

# **Region VII - Falls Task Force**

## **A Training Guide for Avoiding Fall Hazards in the Construction Industry**

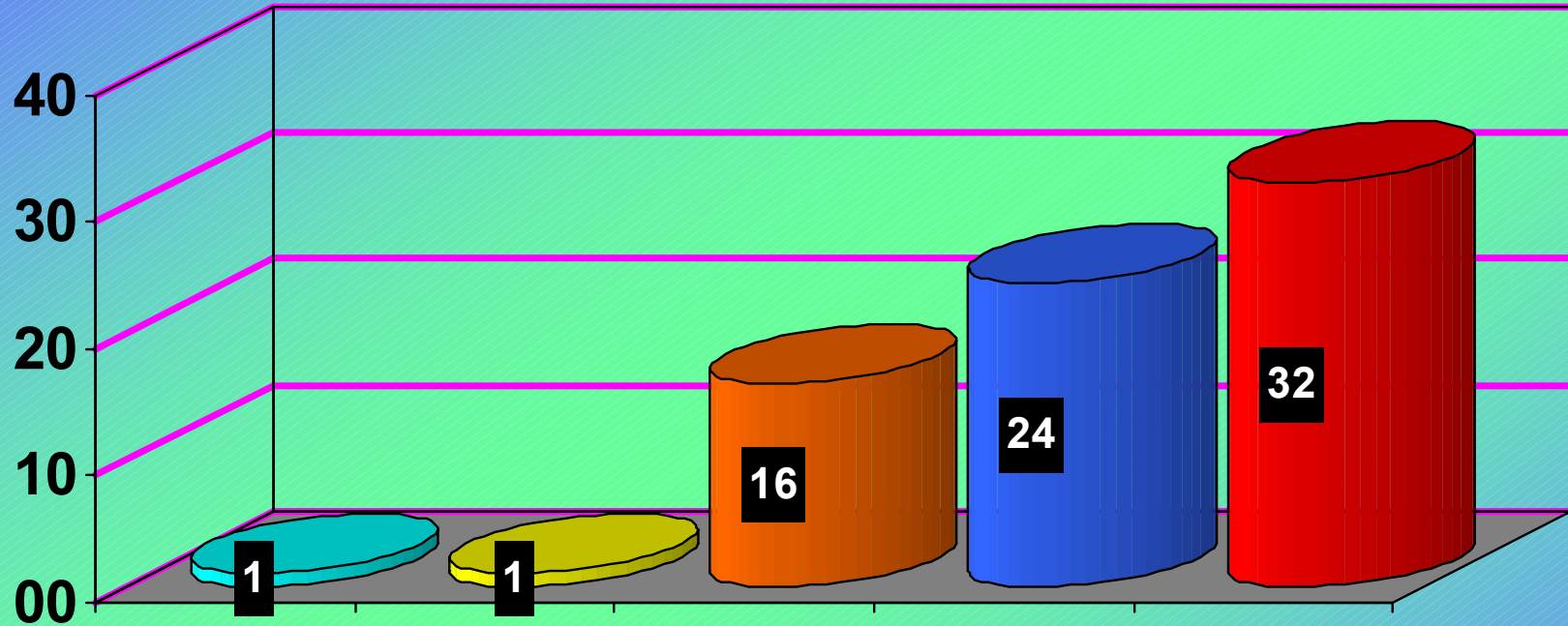
**United States Department of Labor  
Occupational Safety & Health Administration**

**In OSHA's Region VII (KS, MO and NE), 46% of the fatal and catastrophic incidents occurred in the construction industry.**

**36% of those fatalities and catastrophes involved a fall.**

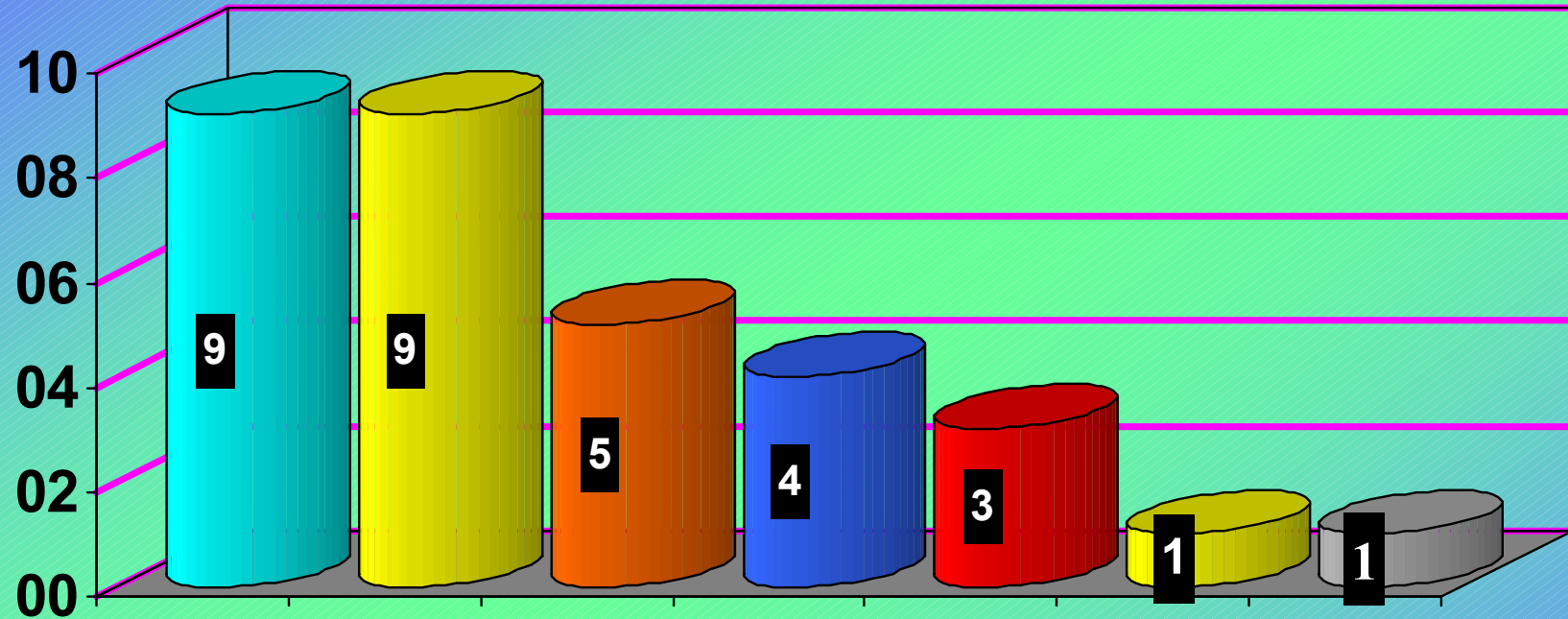
# Fatal/Catastrophic Incidents FY98

## Breakdown By Industry



- Construction
- All General Industry (Excluding Manufacturing)
- Manufacturing
- Mining
- Agriculture, Fishing, Forestry

# Fatal/Catastrophic Incidents Comparison by Type of Accident FY 98



- Fall
- Crush
- Electrocutation
- Trench
- Struck by
- Explosion
- Other

You are about to see some typical violations that you may have encountered in some of your job-sites. It is our intention, that after seeing the following program, you will have a better understanding of potential fall and overhead power-line hazards and may be able to correct them before an accident occurs.

Region VII Falls Taskforce

After some slides in the presentation, another slide will follow stating the potential violation and the location where that referenced violation can be found in the Code of Federal Regulations (CFR) 1926.



## Frequently Violated OSHA Standards Related to Fall Hazards in the Construction Industry

- ① Subpart L - Scaffolds/Aerial Lifts
- ② Subpart M - Fall Protection (#1 Nationwide)
- ③ Subpart R - Steel Erection
- ④ Subpart X - Stairways & Ladders

**Using A Forktruck Without  
A Proper Personnel  
Platform To Elevate  
Workers Is A Practice That  
Has Proved Deadly In  
Construction And In  
General Industry**

**For more complete  
specifications on  
personal platforms  
refer to CFR  
1926.602(c)(1)(vi)  
and ANSI B56.1\***

**\* Elevating personnel using rough terrain forklift trucks is now covered under ANSI B56.6, Sections 5.15 and 8.25.**







**Aerial lifts provide a safe method of reaching your working area.....as long as they are used appropriately.**


**This is definitely NOT the appropriate way to use an aerial lift or a stepladder.**

When using a lift, such as a scissors lift, the employee need not use any type of restraint. However, the employee must remain on the platform of the lift and the cage must have a guardrail system with endrails.

When using a lift that has an articulating boom, employees must wear a body belt and lanyard attached to the boom or basket as a restraint device

For further information on aerial lifts, refer to CFR 1926.453

For further information on ladders, refer to CFR 1926.1053 - .1060



**It's the fall distance from the working level to the lower level that determines the need for guardrails on scaffolds.**

**Fall protection on scaffolds is required if the fall distance exceeds 10 feet.**



Can you explain the proper way this scaffold should have been set up ?

1. Supported scaffold poles, legs, posts, frames and uprights shall bear on base plates and mud sills. 1926.451(c)(2)

2. Each platform on all working levels shall be fully planked or decked. 1926.451(b)(1)

3. Each employee on a scaffold more than 10 feet above a lower level shall be protected from falling. 1926.451(g)(1)

4. A suitable means of access shall be provided when scaffold platforms are more than 2 feet above or below a point of access.  
1926.451(e)(1)

There can be no logical explanation why someone would risk their life while working on this scaffold.

What are some questions you would ask before working on this setup ?



1. Is the wood capable of supporting, without failure, its own weight and at least 4 times the maximum intended load. 1926.451(a)(1)
2. Who is the qualified person that designed this scaffold ? 1926.451(a)(16)
3. Who performed the daily inspection of the scaffold ? 1926.451(f)(3)
4. What are some methods of fall protection these guys could have used ?  
(Under 1926.451(g)(1) fall protection is to be used when an employee on a scaffold is more than 10 feet above a lower level.)

**Two common  
scaffold  
violations:**

**No fall  
protection  
system.**

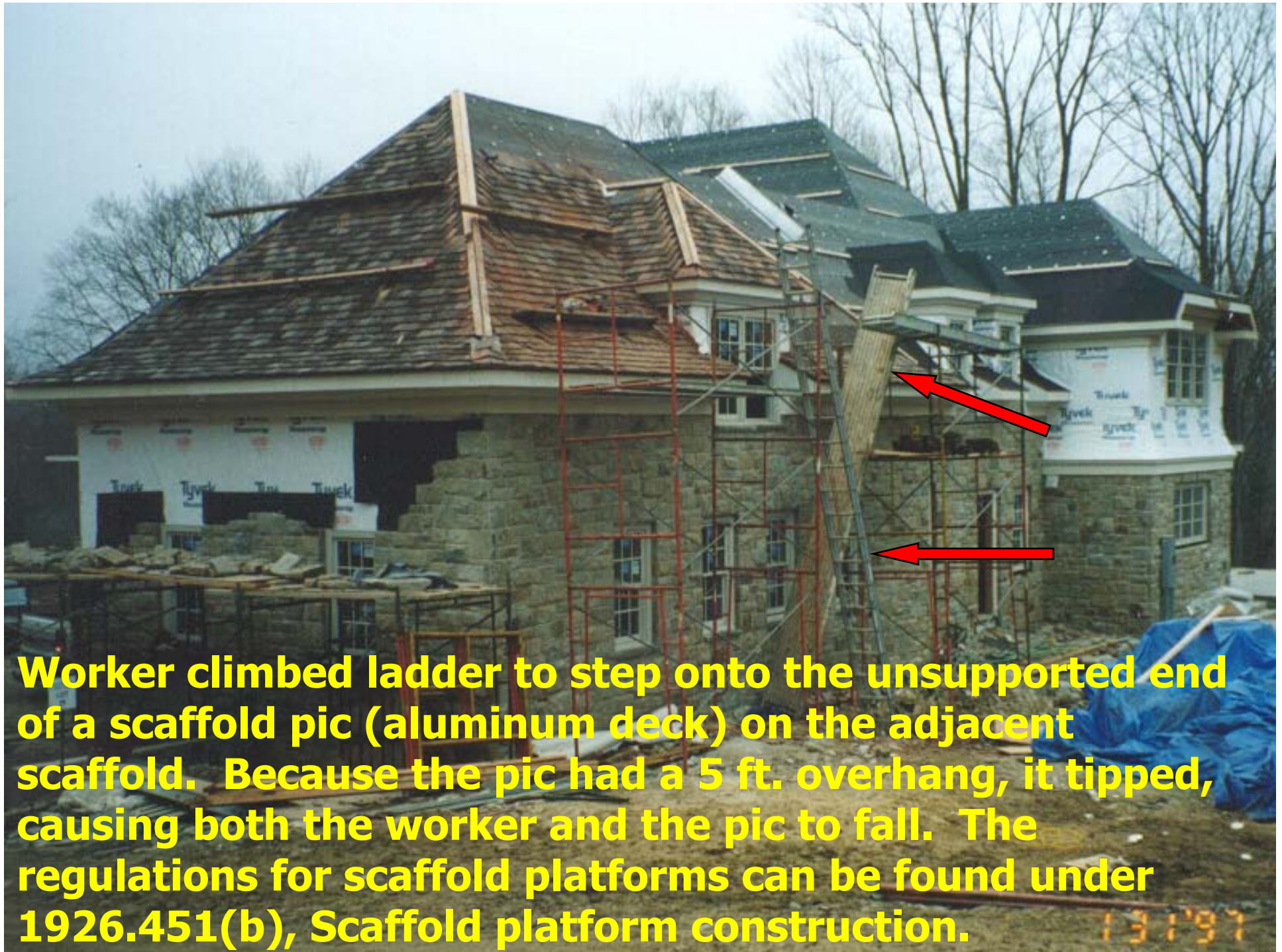
**1926.451(g)(1)**

**No safe access**

**1926.451(e)(1)**



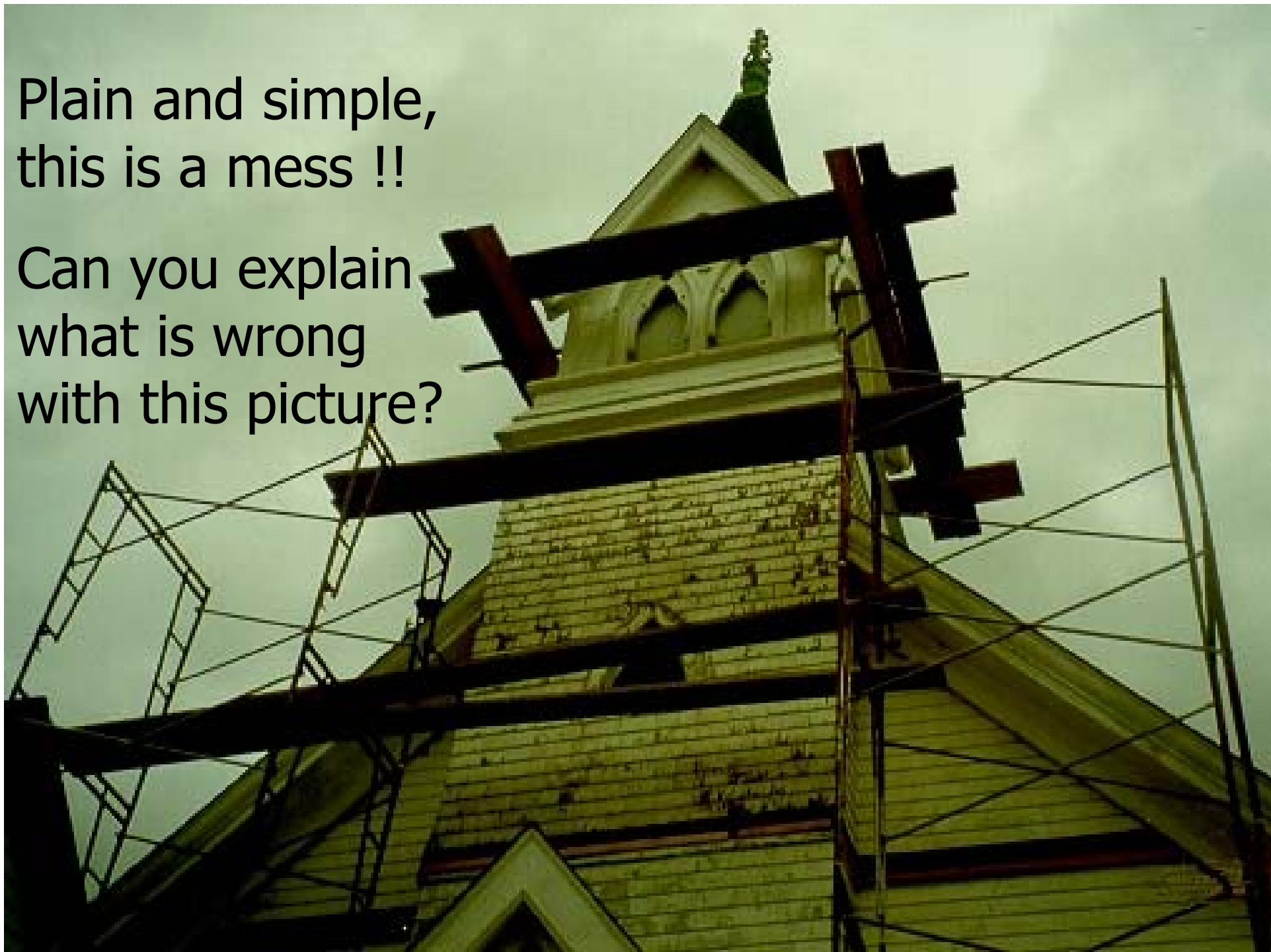




**Worker climbed ladder to step onto the unsupported end of a scaffold pic (aluminum deck) on the adjacent scaffold. Because the pic had a 5 ft. overhang, it tipped, causing both the worker and the pic to fall. The regulations for scaffold platforms can be found under 1926.451(b), Scaffold platform construction.**

Plain and simple,  
this is a mess !!

Can you explain  
what is wrong  
with this picture?



1. No support for the work platforms.
2. What is the means of access to the working levels?
3. What are the workers going to use for fall protection?
4. Is the scaffold adequately braced?
5. Was the scaffold erected under direction of a competent person?
6. Will the work platforms support at least 4 times their maximum intended load?
7. Will the work platforms support employees without tipping?
8. Is the scaffold tied off to the building at the proper height and width?

Excessive  
overhang on  
planks



No fall  
protection



Guardrail  
missing on  
working levels



3 17'98

Before you start, develop a work plan so that situations like this can be avoided.



**Floor Holes are a common hazard**

**It is very easy to step backwards into them, or step into them when carrying something that blocks one's forward view.**

**Floor holes over 2 inches in their least diameter must be covered.  
1926.501(b)(4)(i)-(iii)**



**Floor covers must be marked and secured so that they are not removed and the hole left unguarded.**





**Roof openings (including skylights) must be properly covered or employee fall protection provided in accordance with 1926.501 or 1926.760.**

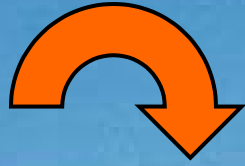
**Covers must be marked "HOLE" or "COVER" and capable of supporting, without failure, 2X the weight of employees, equipment, and materials that may be imposed on the cover.**



**More workers fall to their deaths from, or through, roofs than any other work surface. For further information refer to 1926.501 or 1926.760 Duty to Have Fall Protection**



**All open holes must be covered in areas where work is being performed.**



**Ladder too short - No handhold at top**



**Guardrails need to be installed on the walking/working platform**





**Again, there is no protective system installed. The workers could have used a harness or guardrail system along with end rails.**

**1926.451(g)(1)**



**The side rails of ordinary ladders are not strong enough to be used as scaffold platforms**

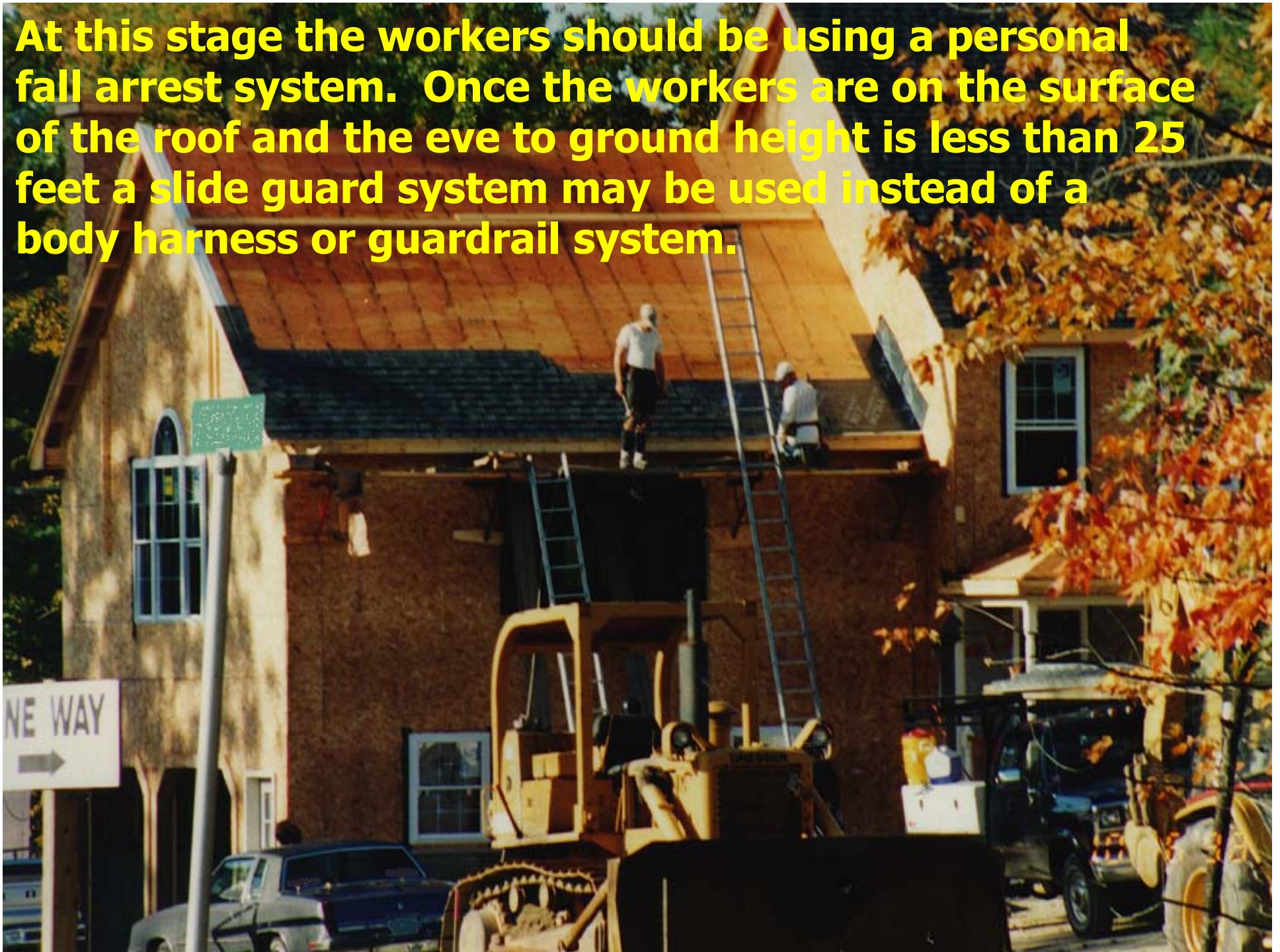
**Employees on pumpjack platforms over 10 ft. high must be equipped with guardrails on all open sides or use a personal fall arrest system.**

**No fall protection system**

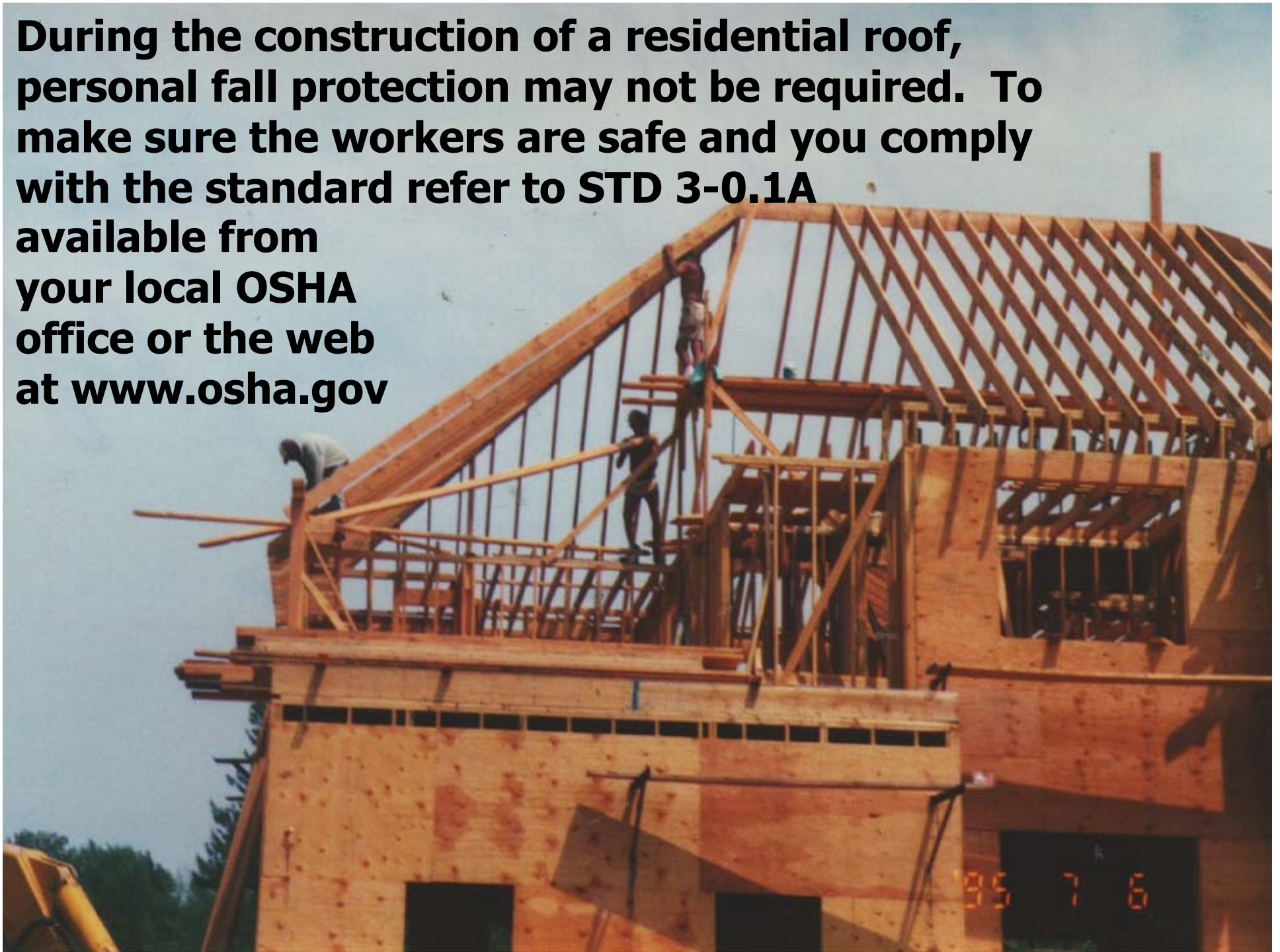
**Use appropriate size stepladder for the job**



**At this stage the workers should be using a personal fall arrest system. Once the workers are on the surface of the roof and the eave to ground height is less than 25 feet a slide guard system may be used instead of a body harness or guardrail system.**

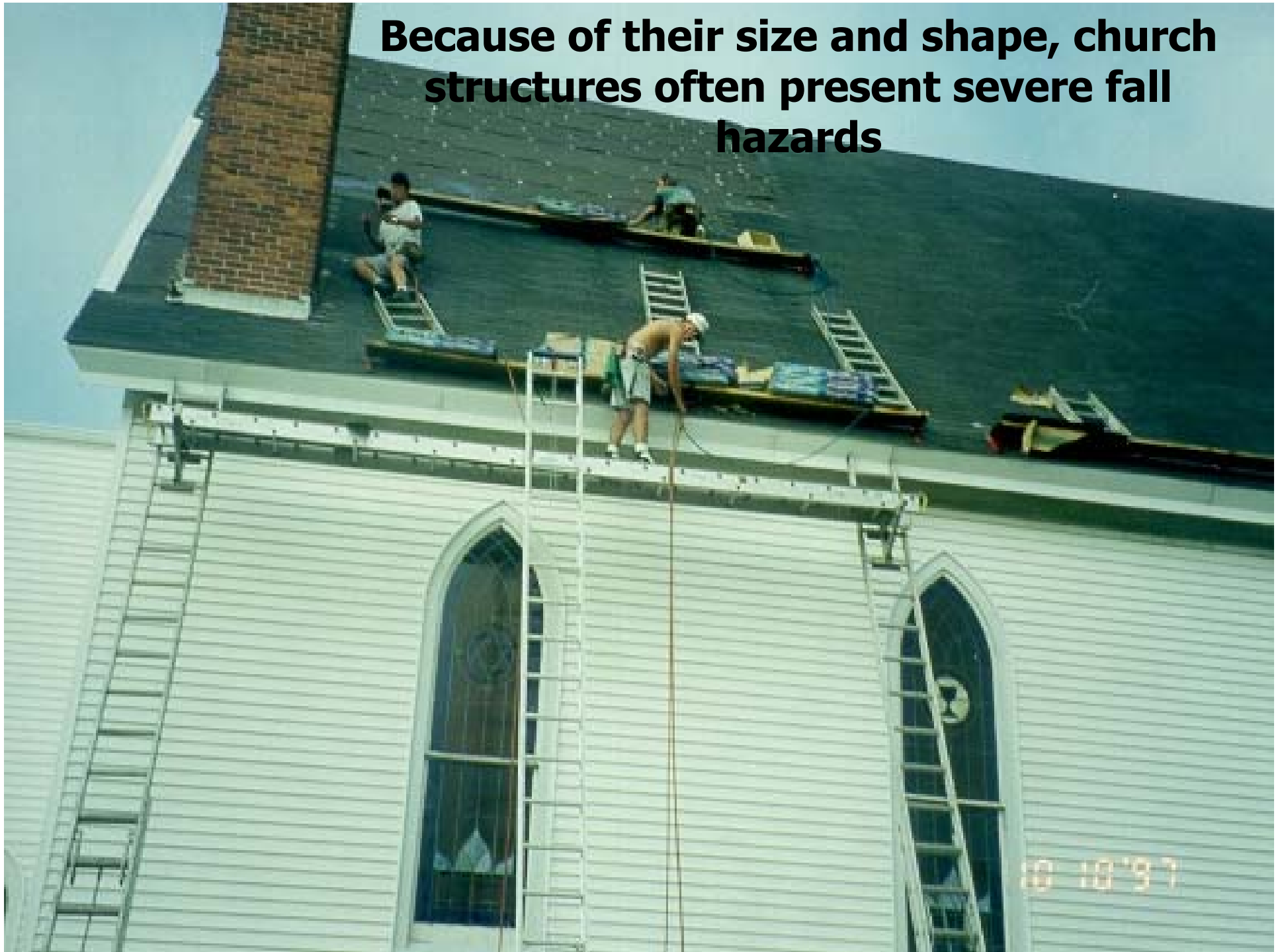


**During the construction of a residential roof, personal fall protection may not be required. To make sure the workers are safe and you comply with the standard refer to STD 3-0.1A available from your local OSHA office or the web at [www.osha.gov](http://www.osha.gov)**





**Because of their size and shape, church structures often present severe fall hazards**





In a situation like this, full body harnesses with lanyards and/or a catch platform would be a suitable means of fall protection.

Additionally, guardrails should be installed on the ladder-jack scaffold or have the employee use a full body harness.

Reference 29 CFR

1926.501(b)(11) roof

1926.451(g)(1) scaffold



**Cable Guardrail systems must support at least 200 lbs.. of pressure and deflect no more than 3 inches.  
1926.502(b)(1) & (b)(3)**

# OSHA'S WEB SITE



- [www.osha.gov](http://www.osha.gov)
- User friendly!
- All OSHA information in one place
- Links to other sites

# The OSHA Home Page

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**Y2K**

▶ The OSHA Partnership Conference was held in Washington, D.C. on Friday, Nov. 13 to showcase the experiences of OSHA, employers, employees, and other safety and health organizations that have achieved increased worker protection through innovative safety and health partnerships.... [ [News Release, more...](#) ]

▶ NASA's Langley Research Center is the first federal worksite recognized for excellence in workplace safety and health and approved for membership in OSHA's Voluntary Protection Program (VPP) Star Program. [ [more...](#) ]

▶ NPS AND OSHA Sign Agreement That Will Improve Employee Safety and Health in National Parks  
[ [more...News Release](#) ]

▶▶ Some files on this website require the [Adobe Acrobat® Reader](#).

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# Using The Search Engine

## Searches Can Be By:

- Word or Phrase
- Information Date
- Specified Standard

The screenshot shows the OSHA website's search interface. The browser title is "OSHA Standards Interpretation and Compliance ... - U.S. Department of Labor Internet Explorer". The page header includes the OSHA logo and "Occupational Safety & Health Administration U.S. Department of Labor". Navigation links for "Home", "Index", and "Search" are present. The main heading is "OSHA Standards Interpretation and Compliance Letters" with a "Table of Contents" link. A search box is labeled "Search" and contains the text "word(s)/phrase)". A "Search" button is to the right. Below the search box are links for "Search Help" and "More Info.". A red box highlights the text "Online Help Provided" with an arrow pointing to the "Search Help" link. At the bottom, there are links for "Information Date" and "Standard Number", with red arrows pointing from the list on the left to these links. A footer contains links for "USDOL", "CONTACT INFORMATION", and "DISCLAIMER".

# OSHA Technical Links Page

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**Click on "Subjects" to bring up the index**

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**Clicking here leads to additional information on fall protection**



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## Fall Protection

In 1995, 1,048 construction workers died on the job, with 32%, or 335 of them, resulting from falls. Each year, falls consistently account for the greatest number of fatalities in the construction industry, and are always a major concern in other industries. Events surrounding these types of accidents often involve a number of factors, including unstable working surfaces, misuse of fall protection equipment, and human error. Studies have shown that the use of guardrails, fall arrest systems, safety nets, covers, and travel restriction systems can prevent many deaths and injuries from falls.

### See also:

- [Construction: General](#)
- [Crane, Derrick, and Hoist Safety](#)
- [Personal Protective Equipment](#)
- [Scaffolding](#)
- [Walking/Working Surfaces](#)

### Recognition

- [Fall Protection in Construction](#). OSHA Publication 3146 (1995), 38 pages, 1.1 MB PDF file. Discusses general fall protection concepts and 1926 Subpart M.
- [OSHA Construction Resource Manual](#). The manual contains sections on 1926 Subpart M (Fall Protection) and other fall protection-related standards.
- [NAHB/OSHA Jobsite Safety Handbook](#). 24 pages, HTML file. Also available in [PDF format](#) (887 KB). This handbook is designed to assist builders and subcontractors in the residential construction industry and includes information on fall protection.
- [Preventing Worker Deaths and Injuries from Falls Through Skylights and Roof Openings](#). NIOSH Alert, Publication No. 90-100 (1989, December), 7 pages.
- [Preventing Falls and Electrocutions During Tree Trimming](#). NIOSH Alert, Publication No. 92-106 (1992, August), 10 pages.
- [NIOSH Issues Nationwide Alert on Dangers of Tree Trimming](#). NIOSH Update, Publication No. 93-122 (1992, December 7), 3 pages.



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## OSHA Fact Sheets

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**Fatal Fact Sheets**  
describe cases that  
represent fatalities  
caused by improper  
work practices

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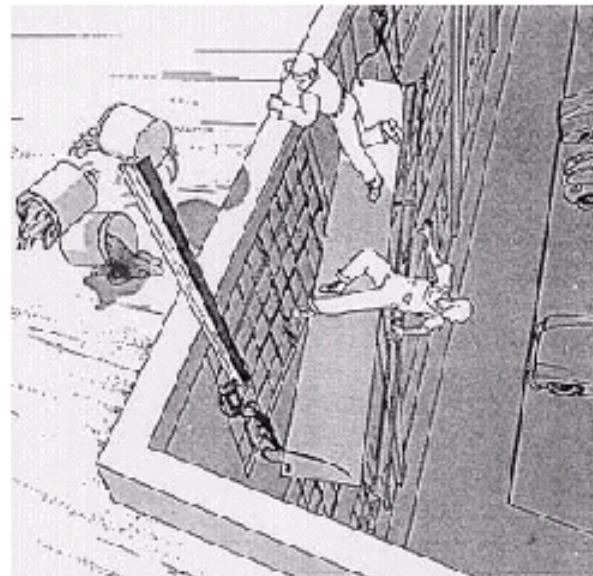
# ACCIDENT REPORT FATAL FACTS

U.S. Department of Labor  
Occupational Safety  
and Health Administration  
No. 14



## ACCIDENT SUMMARY

Accident Type	Fall, Different Level
Weather	Clear, Warm
Type of Operation	Painting Contractor
Crew Size	2
Collective Bargaining	No
Competent Safety Monitor on Site?	No
Safety and Health Program in Effect?	No
Was the Worksite Inspected Regularly?	No
Training and Education Provided?	Inadequate
Employee Job Title	Painter
Age/Sex	29/M
Experience at this Type of Work	Unknown
Time on Project	1 month



## BRIEF DESCRIPTION OF ACCIDENT

Two employees were painting the exterior of a three-story building when one of the two outriggers on their two-point suspension scaffold failed. One painter safely climbed back onto the roof while the other fell approximately 35 feet to his death. The outriggers were inadequately counterweighted with three 5-gallon buckets containing sand and were not secured to a structurally sound portion of the building. Neither painter was wearing an approved safety belt and lanyard attached to an independent lifeline.

## INSPECTION RESULTS

As a result of its investigation, OSHA issued citations for five serious and two other than serious violations of its construction standards. OSHA's construction safety standards include several requirements which, if they had been followed here, might have prevented this fatality.

## ACCIDENT PREVENTION RECOMMENDATIONS

# Other Sources of Information

☆ Government Printing Office - for copies of OSHA regulations and publications & OSHA CD-ROM (202-512-1800)

☆ OSHA-funded free onsite consultation services in each state

☆ Various S&H courses offered by the OSHA Training Institute Des Plaines, IL

☆ Metropolitan Community Colleges, Business & Technology Center, Kansas City, MO (816) 482-5200

# Acknowledgements

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**Region VII's local emphasis program targeting fall and overhead power line hazards was created for the protection of workers in Missouri, Nebraska, Kansas, and Iowa.**

Region 7 Falls/OHPL Task Force Members:

**Corey Beacom**

**Marcia Drumm**

**Brian Drake**

**Peggy Taylor**

**Leland Darrow**

**Matt Thurlby**

Power Point® Fall Hazard training program originally created by Geoff McKinstry, modified for Region VII by Doug Schneider.

Special thanks to Don Kallstrom for providing technical information.