

Outside Warning Lines

- Parapet up to at least 39"
- Fall Restraint
- Safety Monitors



Open Sided Floors

- Open edges on decks, roof, mezzanines, etc. over 6' high must be protected



Stay Back from Edges

- Stay away from edges unless work requires it
- Always face the edge
- Work from your knees



Don't Create a Greater Hazard



Holes

- Covers
- Guardrails



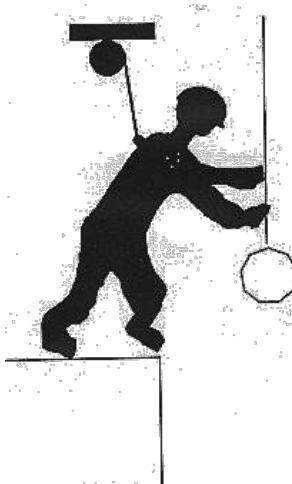
Access Ways

- Offset guardrails are recommended
- Watch for tripping hazards at tops of ladders and stairs



Material Handling Platforms & Hoist Areas

- Material handling platforms must have guardrails
- When the guardrails are opened to receive material, workers must be tied off
- Gates are preferred to removable rails



Slip & Trip Hazards

- Housekeeping!

- Watch trip hazards
- Here trash creates a trip hazard for everyone in the building



Stairways

- Stair pans should not be used for access until poured, and until guardrails and handrails installed
- Be sure all debris is removed immediately



Scaffolds & Ladders



Scaffold Requirements

- Be on a firm foundation with base plates
- Be plumb, square and adequately braced
- Have a fully planked work deck
- Have guardrails over 10 feet
- Be tied-in over 4:1 height to base ratio
- Have an adequate means of access and egress

Good Foundations



Mason's Adjustable
Frames



Hydro-mobile



Access

- No access by cross braces
- Bottom rung can not be more than 24" high
- You must use a ladder or frames designed to be used as ladders



Proper Access

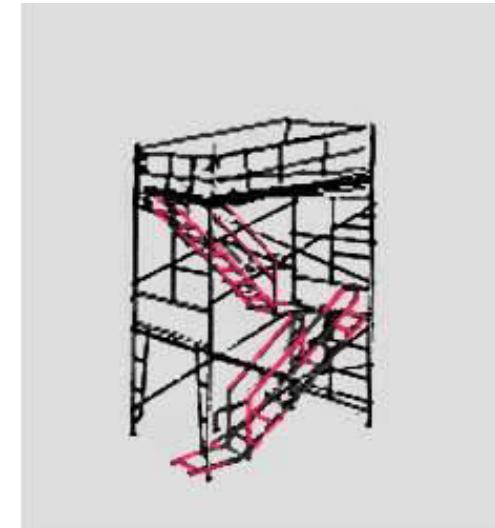
Ladder Tower
with gate



Ladder
Platform



Ladder Frame



Stairway Frame

Baker-type Scaffolds

- Baker scaffolds can be unstable
- Never use a double stack without outriggers



Falling Object Protection

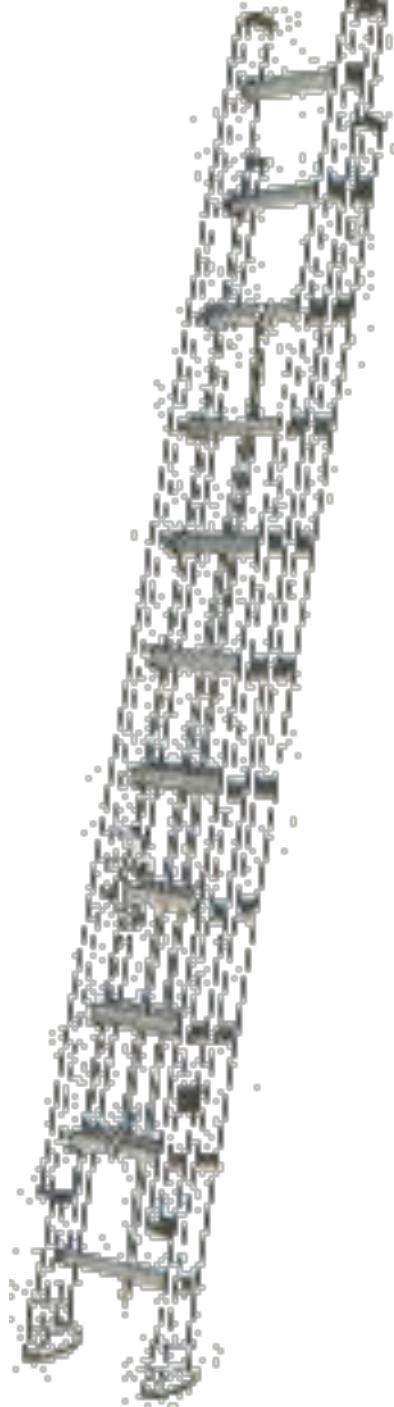
1926.451(h)

- Toe boards at edges of platforms
- Use panels or screens when accessed from below
- Barricade areas below
- Use canopies where walkways cross underneath



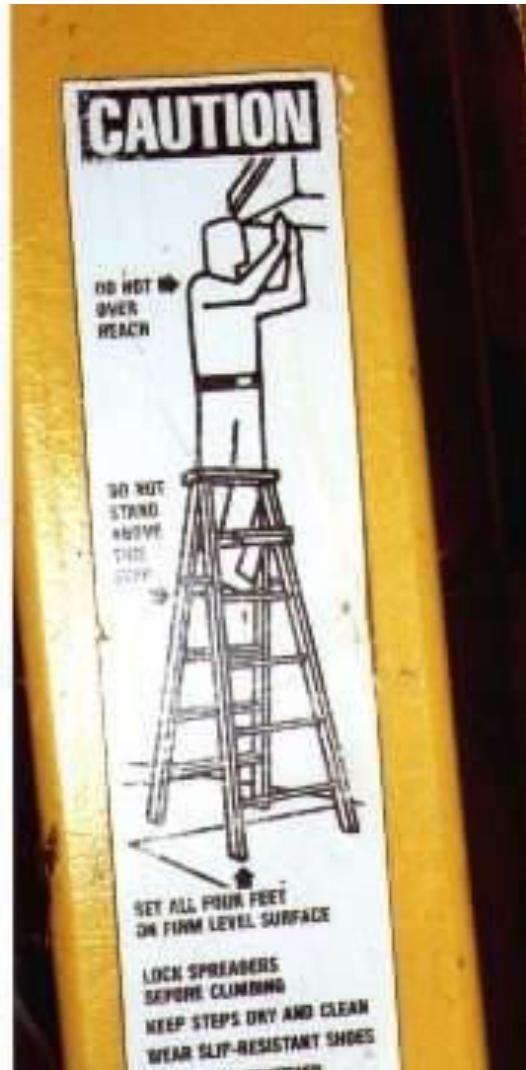
Ladder Types

- Type I-AA ladders are extra heavy duty and can handle up to 375 lbs.
- Type I-A ladders are heavy-duty and can handle up to 300 lbs.
- Type I ladders can hold up to 250 lbs.
- Type II ladders can hold 225 lbs.
- Type III ladders are for light duty only and can hold up to 200 lbs.



Read the Warning Labels

- Labels are there for a reason!



Proper Ladder Climbing

- Use both hands to climb a ladder
- Always face the ladder when climbing, descending or working
- Avoid the top two steps of a stepladder and the top four rungs on other ladders

Don't Lean a Step Ladder

- The support leg can contact the ground causing the step leg to kick out
- Also employees should not work from the top or second step



Do Not Stand On The Top Step!!!



Obey the Labels!!



NO!

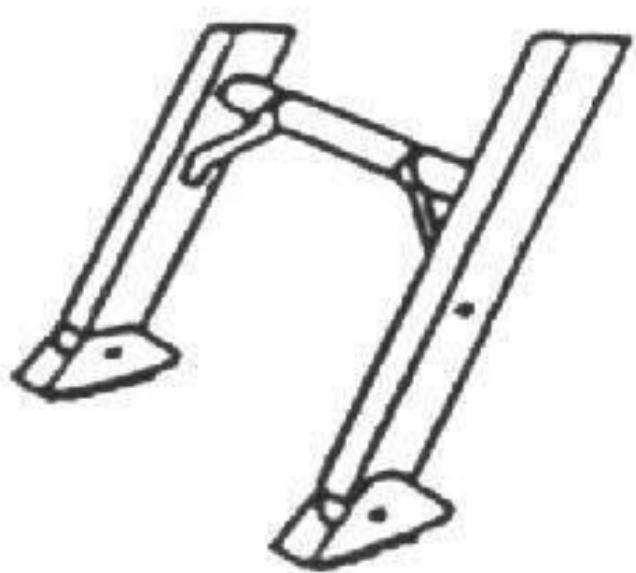
Working Above Protections



When employees work above railings, they must be protected from falling over the railings.

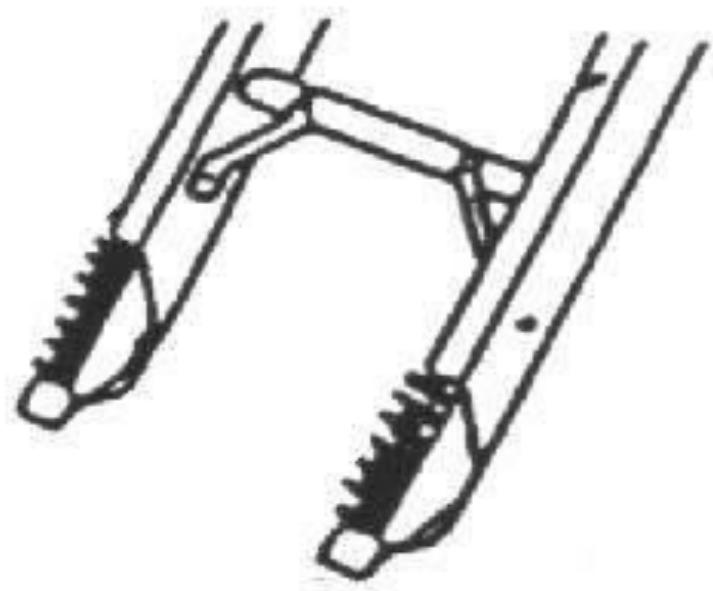


Set Feet Properly



Firm Base

**Set both feet level and
on the pads**



Soft Base

**Set on the spikes and
seat the ladder in the
ground.**

Proper Access Ladders

- Ladders should be set at 1 horizontal to 4 vertical
- Ladders must be secured
- Ladder access ways must be guarded
- Ladders must extend 3' above the landing surface, or an adequate grabrail must be provided



Bridges



Bridge Fall Protection

- Bridge edges must be protected
- When working over water flotation devices must be worn



Falls While Decking



Leading edges must be protected

Equipment

- Do not jump from equipment
- Use three point contact at all times
- Be sure of your footing
- Do not strain your shoulders
- Be sure steps are clear of mud and ice



Protect Yourself



Proper Seats



Competent Person

- A **competent person** is someone who:
 - Is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and
 - Has the authorization to take prompt corrective measures to eliminate them

Incident Free

- Planning
- Training
- Inspection
- Oversight
- Lessons learned
- Re-evaluate

Summary

- The focus four hazards are responsible for the majority of physical, financial, and emotional losses in construction — **and they exist on nearly every jobsite.**
- It takes a well-trained crew (the entire crew!) and lots of pre-planning to recognize and respond to those hazards. **Safety is everyone's responsibility — ALL of the time.**



Fall Protection

Orlando Huguet, Jr.

Description

This training will provide a basic overview and information about fall protection and the current OSHA standards. Items covered include the principals of fall protection, the different components of a fall arrest systems, limitations and general discussion of real and hazardous situations.

Course Objectives

- Identify appropriate fall protection devices and systems
- Identify common fall hazards
- Identify possible abatement/correction methods for common fall hazards
- Briefly review and discuss applicable OSHA standards







Anatomy of a Fall

ANATOMY OF A FALL

Least you think that falling is not a serious thing and that you probably can catch yourself before too much damage is done – read on, you might find the below information interesting:

<u>ELAPSED TIME (SEC)</u>	<u>FREE FALL DISTANCE</u>	<u>SPEED FT/SEC</u>	<u>HUMAN RESPONSE</u>
0.1	2"	3.3	Unaware
0.2	8"	7.0	Aware
0.3	18" (1.5')	10.0	Aware
0.4	31"	13.0	Reflex
0.5	48" (4')	16.0	Start to move
0.6	70"	19.3	Start to move
0.61	72" (6')	19.6	Slight movement
0.7	95"	23.0	Slight movement
0.8	124"	26.0	Movement
0.9	156"	29.0	Movement
1.0	193" (16')	32.0	Movement
2.0	773" (64')	64.0	Movement

Note: “Start to move” and “Slight movement” do NOT equate to reaching out and grabbing something. By the time you have conscience, controlled movement 8/10ths (or more) of a second have passed and you have already fallen roughly 10.3' (124")! OSHA requires fall protection to start at heights of 6'.



Two Factors Influence Falls

- Body Weight ---(W)
- Free Fall Distance---(D)
- Forces= $W \times D$
- So a 215lbs worker w/ 6 lbs of tools who falls 6' can generate fall forces of 1,290lbs across a person's body
- W/O adequate deceleration or shock absorbers this could cause serious injuries.

Falls

- Falls are the *leading cause of fatalities* in the construction industry.
- In 2008 there was 700 fatal falls
- In 2009 there was 617 fatal falls
- Half of these falls were in construction
- Fall injuries cost millions each year

Top 10 OSHA Violations

2010

2009

2008

Scaffolding	Scaffolding	Scaffolding
Fall Protection	Fall Protection	Hazard Communications
Hazard Communications	Hazard Communications	Fall Protection
Respiratory Protection	Respiratory Protection	Respiratory Protection
Ladders	Control of Hazardous Energy (lockout/tagout)	Control of Hazardous Energy (lockout/tagout)
Control of Hazardous Energy (lockout/tagout)	Electrical – Wiring Methods	Electrical – Wiring Methods
Electrical (wiring methods)	Powered Industrial Trucks	Powered Industrial Trucks
Powered Industrial Trucks	Machine Guarding	Ladders
Electrical (general)	Ladders	Machine Guarding
Machine Guarding	Electrical – General	Electrical – General



Fatal Falls From:

- Roofs 109
- Scaffolds 53
- Ladders 122
- Falls from same level 83
- Fall from to lower level 518

Top Fall Protection Violations

- 1926.451/Scaffolding.....9,093
- 1926.501/Fall Protection Scope....6771
- 1926.1053/Ladders.....3072

(FY 2010)

- MARCO ISLAND — The U.S. Department of Labor's Occupational Safety and Health Administration is proposing \$60,900 in penalties against Naples-based Morca Contracting Corp. for 14 serious safety violations found at a worksite on Marco Island. Violations include multiple failures to prepare and maintain adequate scaffolding, resulting in workers being exposed to fall hazards; a lack of fall protection for workers; and inadequate training for employees on recognition and prevention of fall hazards. "I have a small business, the fine (violation costs) is more than I make a year," Morales said. Morca has 13 employees, down from 29 in good building times.

Primary Causes of Fall Related Fatalities

- Unprotected sides, edges and holes
- Improperly constructed walking/working surfaces
- Improper use of access equipment (ladders and lifts)
- Failure to properly use PFAS
- Slips and Trips (housekeeping)

Fatality and Stats

- 85% of all citations and 90% of dollars applied as fines are related to the Focus Four Hazards-Struck By, Caught In-Between, Falls and Electrocution
- 79% of all fatalities are related to the above

FALL PROTECTION

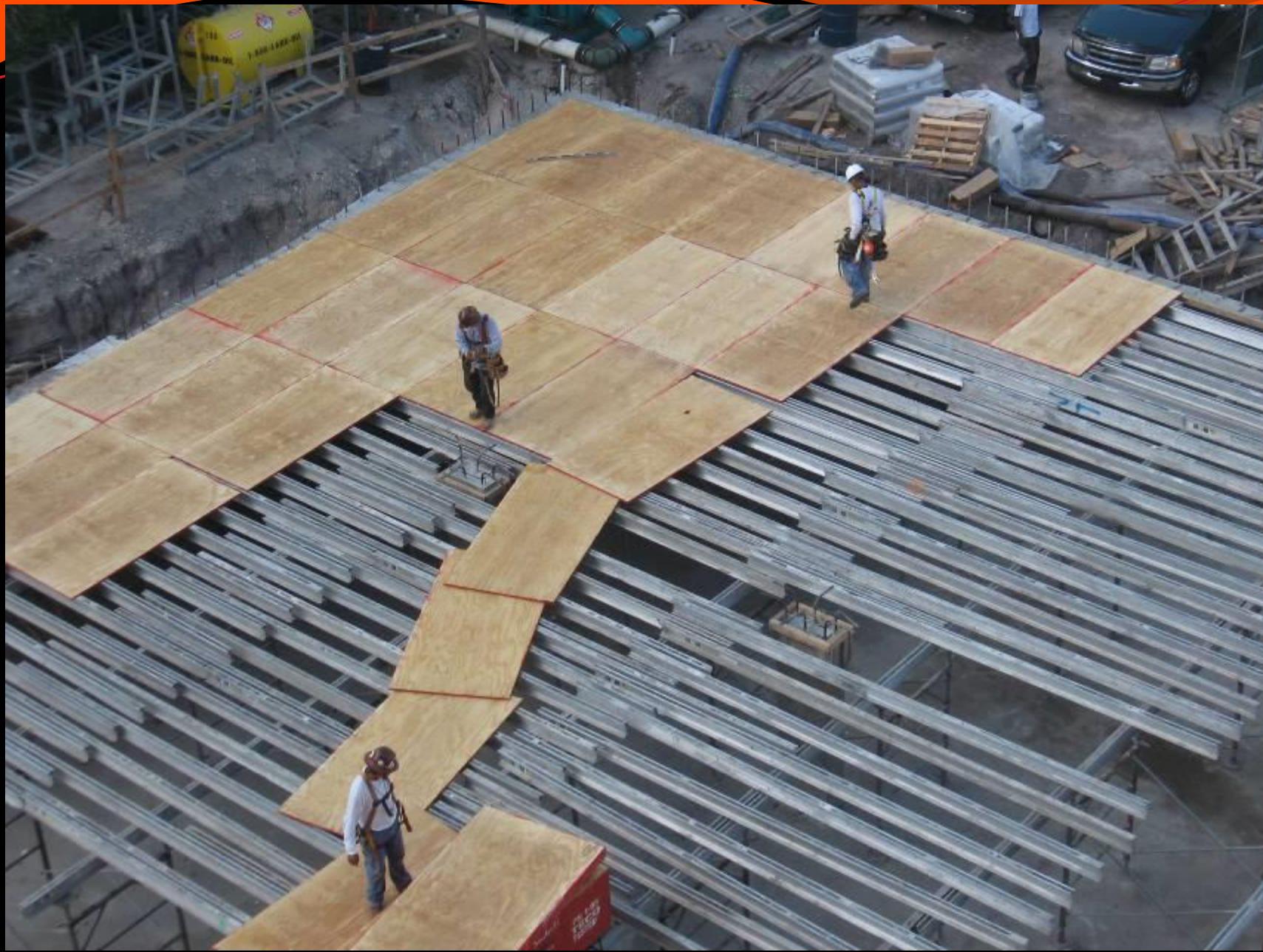


What Is Fall Protection?

- *Answer.....*A series of reasonable steps taken to cause elimination or control of the injurious effects of an unintentional fall while accessing or working at height.

Planning for Fall Protection

- Best practice dictates that fall protection becomes an integral part of the project planning process, from constructability, to systems installation, to use and maintenance
- A project cannot be truly safe unless fall protection is incorporated into every phase of the construction process
- Best if fall protection is planned and designed prior to construction....More...difficult-and costly-once project starts!
- Planning (DOING) will keep workers safe and minimize liability for all parties involved.



Controlling Fall Exposures

- Select fall protection systems appropriate for given situations
- Use proper construction and installation of safety systems
- Supervise employees properly
- Make Supervisor both responsible and accountable for fall protection at workplaces
- Use safe work procedures
- Train Workers in the proper selection, use, and maintenance of fall protection systems
- Evaluate the effectiveness of all steps

Fall Arrest System

A personal fall arrest system is one option of protection that OSHA requires for workers on construction sites who are exposed to vertical drops of 6 feet or more

Ensure that personal fall arrest systems will, when stopping a fall:
Limit maximum arresting force to 1,800 pounds.

Be rigged such that an employee can neither free fall more than 6 feet nor contact any lower level.

Bring an employee to a complete stop and limit maximum deceleration distance to 3½ feet.

Have sufficient strength to withstand twice the potential impact energy of a worker free falling a distance of 6 feet, or the free fall distance permitted by the system, whichever is less

Other Things to Consider

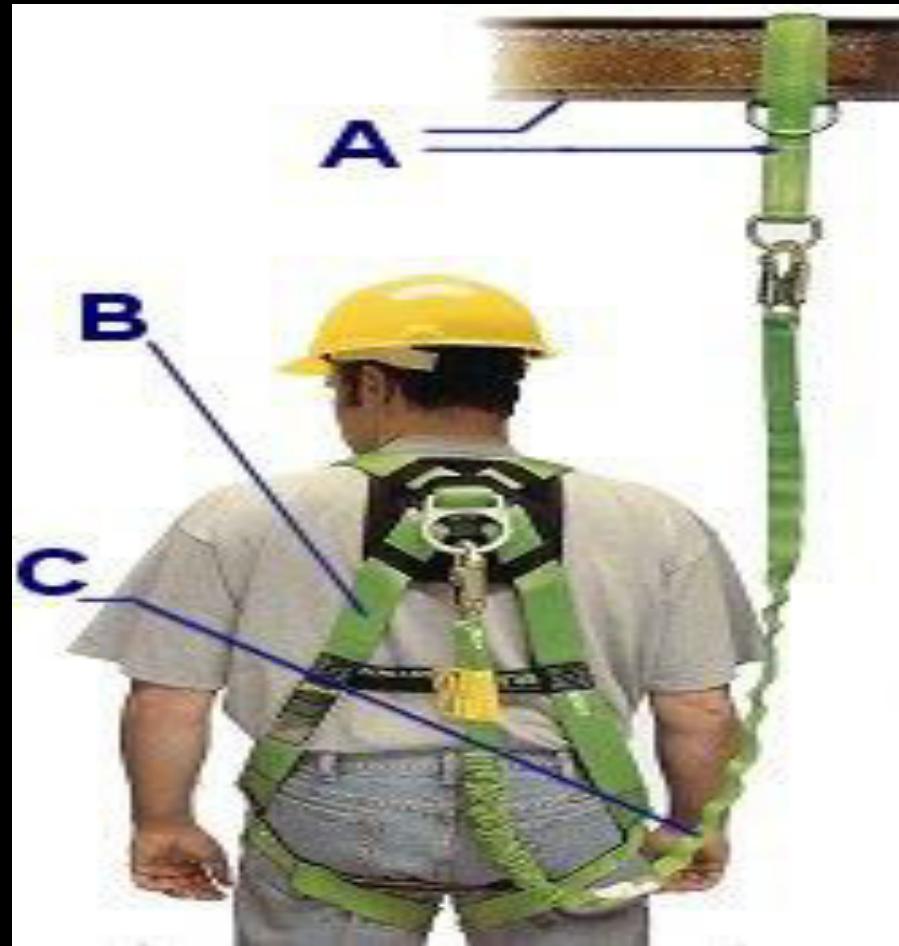
- Remove systems and components from service immediately if they have been subjected to fall impact, until inspected by a competent person and deemed undamaged and suitable for use.
- Promptly rescue employees in the event of a fall, or assure that they are able to rescue themselves.
- Inspect systems before each use for wear, damage, and other deterioration, and remove defective components from service.
- Do not attach fall arrest systems to guardrail systems or hoists.
- Rig fall arrest systems to allow movement of the worker only as far as the edge of the walking/working surface, when used at hoist areas.

Impact Force

- Minimize Fall Distance
- Use Shock Absorbers
- Choose appropriate harnesses, and wear them properly



The ABC's



The A



The Anchor

Anchorages used for attachment of personal fall arrest equipment must be independent of any anchorage being used to support or suspend platforms, and capable of supporting at least 5,000 pounds per employee attached, or must be designed and used as follows:

As part of a complete personal fall arrest system which maintains a safety factor of at least two.

Under the supervision of a qualified person.

Improper Anchor Points

- Standard Guardrails
- Standard Railings
- Ladder/Rungs
- Scaffolding
- Light fixtures
- Conduit or Plumbing
- Ductwork or Pipe Vents
- Pipe Hangers
- C-Clamps
- Cable Trays
- Another lanyard
- Roofstacks, vents
- Joists, girders (unless qualified person allows same)

The B



The Body Harness



Body Harness Cont..

- Need to be inspected frequently (daily before use by the worker 502(d)(21)
- Recommend monthly by Competent Person
- Should never be modified
- Should be taken out of service immediately if defective or exposed to an impact 502 (d)(9)

Proper Adjustment is Key

- Be able to reach your D-Ring with your thumb
- Maximum four (flat) fingers of slack at the legs, straps as high as comfortably possible
- Ensure chest strap is across the chest/breastbone
- Have a buddy double check for twist..etc.

ABC

- Proper/Adequate ABC's make up the PFAS
- A failure in any of the ABC's can be the difference between a fall arrest and fall related death

Adequate Anchorages are Crucial

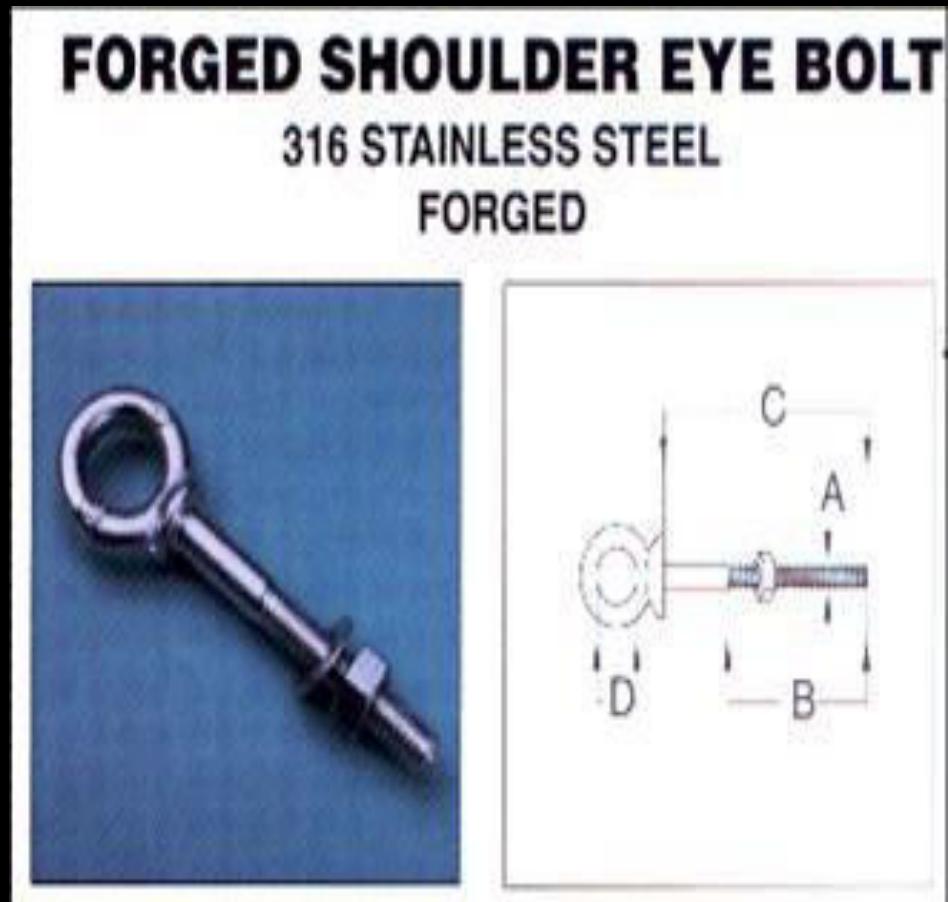
- 29CFR 1926 Subpart M Appendix C (h) OSHA's stance on importance of anchorage points
- Planning by employer is VITAL
- No planning....employees tend to find their own anchorage or don't use any
- Must support 5000lbs per employee attached

What's a Safety Factor of 2?

- Means that you multiply the maximum intended load on the anchorage by two.
- Engineers have come up w 3600lbs since the max arresting forces to a worker in a fall wearing a harness is 1,800lbs
- 1926.32(n) Safety factor: Means the ratio of the ultimate breaking strength of a member or piece of equipment to the actual working stress of safe load

Use of Eye Bolts

- Rated for loading parallel to the bolt axis
- If wall mounted the rating perpendicular to the axis must be good for 5,000lbs per employee.









Horizontal Life Lines

- Provide maneuverability
- Must be designed , installed and used under the guidance of a qualified person with safety factor of at least 2
- See Subpart M, Appendix C (h) (6)
- See ANSI A 10.14 1991-pp5

Vertical Lifelines

- 29CFR 1926.104
- Min breaking strength 5,000lbs
- Separate lifelines per employee 502.(d)(10)
- Elevator erection 2 employees on VLL as long as its rated for 10,000lbs
- No knots in VLL, can reduce strength by 50%

The C



The Connectors

Connectors, including D-rings and snap hooks, must be made from drop-forged, pressed or formed steel, or equivalent materials. They must have a corrosion-resistant finish, with smooth surfaces and edges to prevent damage to connecting parts of the system.



Connector (Lanyards)

- Should be inspected before each use
- Should not be tied back to themselves
- Should be worn with timpact absorber/shock pack at the D-ring
- Should have the appropriate clip for the intended anchorage points

Retractable Life lines

- Very effective for vertical applications
- Will normally lock up in 1 to 2 feet, minimizing total fall distance and impact forces on the employee's body

SRL and Deceleration Devices

- Self retracting lifelines which limit free fall to 2' or < must capable of sustaining minimum tensile load of 3000lbs to device is fully extended position
- SRL which don't limit fall to 2' or < ripstitch lanyards and tearing type lanyards must maintain min tensile load of 5,000lbs to lifeline/lanyard in fully extended position

Do Not Hook Lanyards to Retractables

This can cause hook failures and affect the locking capability of the retractable

The retractable should be attached directly to the D-ring

No plan for SWING factor in the event of a fall.





PFAS Must limit Max Arresting Forces to the Worker

- Per 29CFR 1926 502(d)(16)
- Body Belt MAF to 900lbs
- Full body harness MAF 1,800lbs
- Locking snap lanyards w/built in shock absorbers reduce fall arrest forces by 65% to 85%

Information

- Steel Lanyard: 3,970lbs of force
- Nylon rope lanyard: 2,395lbs of force
- Shock absorbing lanyard: 830lbs of force



Snap Hooks

- **Snaphooks** must have a minimum tensile strength of 5,000 pounds, and be proof-tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or becoming permanently deformed. They must also be locking-type, double-locking, designed and used to prevent the disengagement of the snaphook by the contact of the snaphook keeper with the connected member.

Unless it is designed for the following connections, snaphooks must not be engaged:

- Directly to webbing, rope, or wire.
- To each other.
- To a D-ring to which another snaphook or other connector is attached.
- To a horizontal lifeline.
- To any object which is incompatibly shaped in relation to the snaphook such that the connected object could depress the snaphook keeper and release itself.
- 29 CFR 1926 Subpart M, Fall protection. OSHA Standard.
 - 1926.502, Fall protection systems criteria and practices
 - 29 CFR 1926.502(d)(1)



Impacting Structures Below

- Consideration
 - Anchor
 - Lanyard Length
 - Harness Elongation
 - Shock Absorber
 - D Ring position



Free Fall Distance

- How far a worker falls before shock absorbing or deceleration equipment begins to take effect
- Affects both impact forces and total fall distance?

Free Fall Cont...

- Anchorage point location in relation to D-ring height
 - Below the D-ring allows excessive falls
 - Above the D-ring minimizes free fall to less than 6'

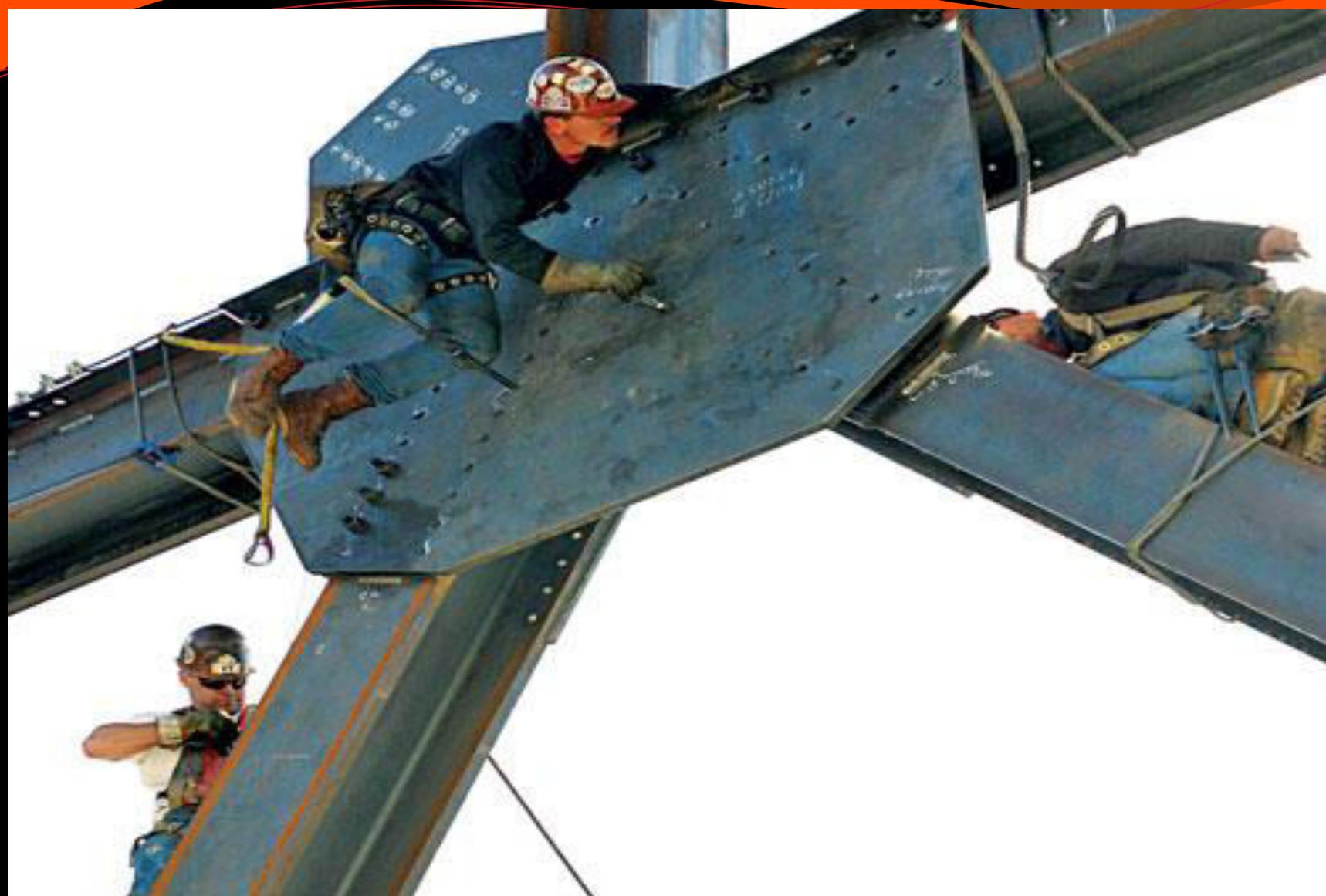
Competent Person

- Means one who is capable of identifying existing and predictable hazards in the surrounding, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has the authorization to take prompt corrective measures to eliminate them.

Qualified Person

- Means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated their ability to solve or resolve problems related to the subject matter





Guard Rail System

- Primary Issues
 - Complete System
 - Full Coverage
 - Accessways/Ladders
 - Material Handling Areas
- Proper Construction
 - Strength 200lbs
 - Deflection-Top rail not less than 42" from walking surface
- Maintenance
- Custody & Control

Osha Standards

- 1) For wood railings: Wood components shall be minimum 1500 lb-ft/in² fiber (stress grade) construction grade lumber; the posts shall be at least 2-inch by 4-inch (5 cm x 10 cm) lumber spaced not more than 8 feet (2.4 m) apart on centers; the top rail shall be at least 2-inch by 4-inch (5 cm x 10 cm) lumber, the intermediate rail shall be at least 1-inch by 6-inch (2.5 cm x 15 cm) lumber. All lumber dimensions are nominal sizes as provided by the American Softwood Lumber Standards, dated January 1970.

Osha Stand Cont...

For pipe railings: posts, top rails, and intermediate railings shall be at least one and one-half inches nominal diameter (schedule 40 pipe) with posts spaced not more than 8 feet (2.4 m) apart on centers.

Osha Stand Cont

For structural steel railings: posts, top rails, and intermediate rails shall be at least 2-inch by 2-inch (5 cm x 10 cm) by 3/8-inch (1.1 cm) angles, with posts spaced not more than 8 feet (2.4 m) apart on centers



Wood Guardrails

- Proper Height 42" (+ or - 3")
 - Adequate strength 200lbs outward or downward direction
- Midrails- In between the top and walking surface
 - Adequate strength 150lbs outward or downward direction
- Toeboard
 - Adequate strength 50lbs outward or downward direction













RIVERGATE
PLAZA

SUNTRUST



Cable Guardrails

- Proper Height 42”
 - Can not deflect below 39”
- Marked every 6’
 - High visibility material
- Termination and attachments must meet standards (per Appendix B Subpart M)
- Wire rope
 - 1/4” nominal diameter





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HOLES

Holes

- Must be covered
 - By material that leaves no openings more than 1 inch wide. The cover shall be securely held in place to prevent tools or material from falling through.
- Guardrails
 - May be used in accordance with applicable standards



PEP G350

PEP 30



Safety Nets



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Where workers on a construction site are exposed to vertical drops of 6 feet or more, OSHA requires that employers provide fall protection in one of three ways *before* work begins:

Placing guardrails around the hazard area,

Install safety nets, or

Providing personal fall arrest systems for each employee.

Many times the nature and location of the work will dictate the form that fall protection takes. If the employer chooses to use a safety net system, he must comply with the following provisions:

Safety nets must be installed as close as practicable under the surface on which employees are working, but in no case more than 30 feet below. When nets are used on bridges, the potential fall area must be unobstructed.

Safety nets must extend outward from the outermost projection of the work surface as follows:

Vertical distance
from working level
to horizontal plane
of net

Up to 5 feet

5 to 10 feet

More than 10 feet

Minimum required horizontal
distance of outer edge of net
from the edge of the working
surface

8 feet

10 feet

13 feet

Safety nets must be installed with sufficient clearance to prevent contact with the surface or structures under them when subjected to an impact force equal to the drop test described below.

Safety nets and their installations must be capable of absorbing an impact force equal to the drop test described below.

Safety nets and safety net installations must be drop-tested at the jobsite:

After initial installation and before being used.

Whenever relocated.

After major repair.

At 6-month intervals if left in one place.

The drop test consists of a 400 pound bag of sand 28-32 inches in diameter dropped into the net from the highest surface at which employees are exposed to fall hazards, but not from less than than 42 inches above that level.

When the employer can demonstrate that it is unreasonable to perform the drop-test described above, the employer or a designated competent person shall certify that the net and net installation have sufficient clearance and impact absorption by preparing a certification record prior to the net being used as a fall protection system. The certification must include:

Identification of the net and net installation.

Date that it was determined that the net and net installation were in compliance.

Signature of the person making the determination and certification.

The most recent certification record for each net and net installation must be available at the jobsite for inspection.

Safety nets must be inspected for wear, damage, and other deterioration at least once a week, and after any occurrence which could affect the integrity of the system.

Defective nets shall not be used, and defective components must be removed from service.

Objects which have fallen into the safety net, such as scrap pieces, equipment, and tools, must be removed as soon as possible from the net and at least before the next work shift.

Maximum mesh size must not exceed 6 inches by 6 inches. All mesh crossings must be secured to prevent enlargement of the mesh opening, which must be no longer than 6 inches, measured center-to-center.

Each safety net, or section thereof, must have a border rope for webbing with a minimum breaking strength of 5,000 pounds.

Connections between safety net panels must be as strong as integral net components, and must not be spaced more than 6 inches apart.







Installing the Nets













Material Handling Platforms

Material Handling Platforms

- MHP must have guardrails
- When the guardrails are opened to receive material workers must be tied off
- Gates are preferred to removable rails
- 29 CFR 1926.501(b)(3) and 502 (b)(10)







SCAFFOLDS

Climbing the structural cross-braces of a scaffold is *unsafe*, and ***specifically forbidden*** by federal standards. However, OSHA permits direct access from another scaffold, structure, or personnel hoist.

If such access is not possible, portable ladders, hook-on ladders, attachable ladders, stair towers, stairway-type ladders, ramps, walkways, or built-in ladders must be used, under the following regulations

Hook-on and Attachable Ladders

Must have their lowest rung no more than 24 inches above the level on which the scaffold is supported.

- When used on a supported scaffold more than 35 feet high, must have rest platforms at 35-foot maximum intervals.
- Must have a maximum rung length of $11\frac{1}{2}$ inches, and a maximum space between rungs of $16\frac{3}{4}$ inches.
- Must be specifically designed for the type of scaffold with which they are used.



Built-in Scaffold Ladders

- Must be specifically designed and constructed for use as ladder rungs.
- Must not be used as work platforms when rungs are less than 11½ inches, unless each employee uses fall protection or a positioning device [29 CFR 1926.502(e)].
- Must be uniformly spaced within each frame section.
- Must have rest platforms at 35-foot maximum intervals on all supported scaffolds more than 35 feet high.
- Must have a maximum space between rungs of 16¾ inches.



Direct Access?







Scaffold Types

- Supported
 - Fabricated Frame
 - Tube & Coupler
 - Wall Brackets
 - Form Brackets
 - Ladder Jacks
 - Pump Jacks
- Suspended
 - Swings
 - Multi-point
 - Catenary

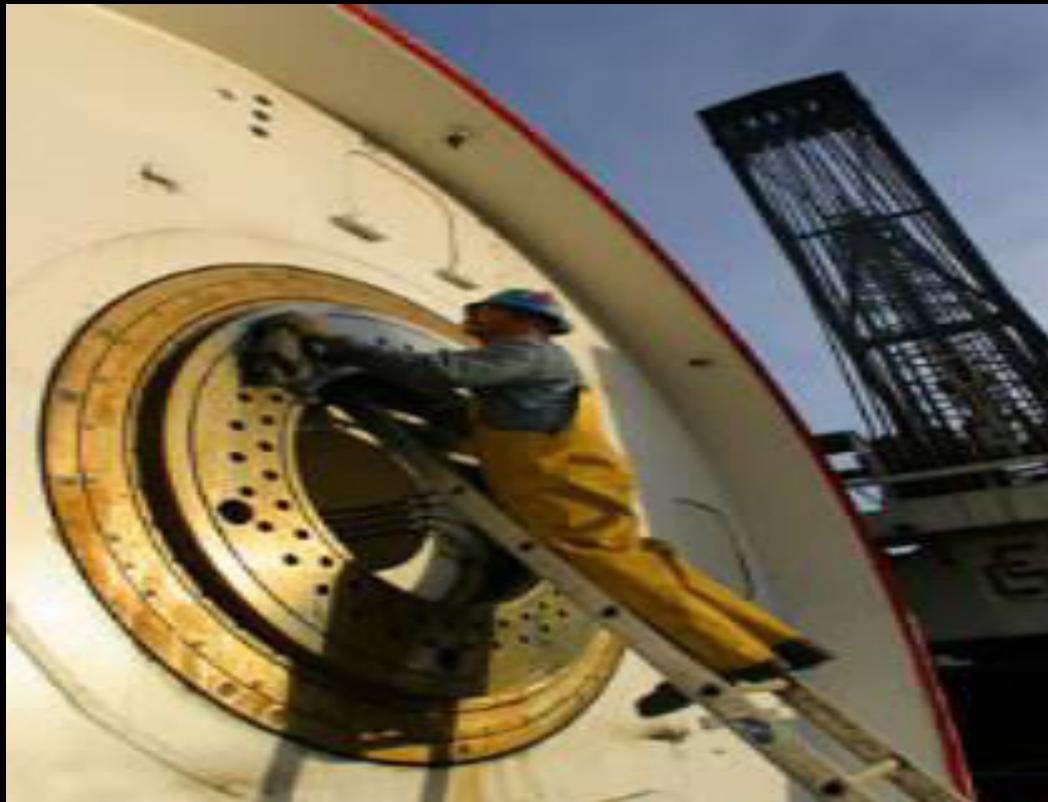


Ladders and Stairs

- Ladders
 - Extension
 - Step
 - Vertical Fixed
 - Job built



Extension Ladder





You risk falling if portable ladders are not safely positioned each time they are used. While you are on a ladder, it may move and slip from its supports. You can also lose your balance while getting on or off an unsteady ladder. Falls from ladders can cause injuries ranging from sprains to death.









Step Ladders







This is improperly using the top rung of this step ladder to work from.







How Do I Avoid Hazards?

Position portable ladders so the side rails extend at least 3 feet above the landing.

Secure side rails at the top to a rigid support and use a grab device when 3 foot extension is not possible.

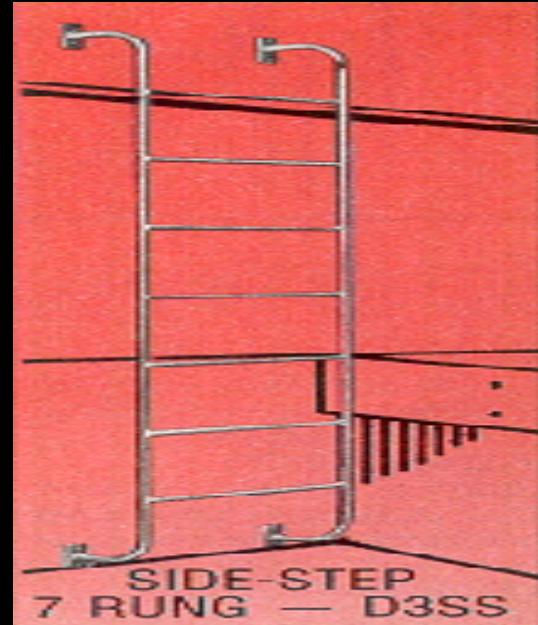
Make sure that the weight on the ladder will not cause it to slip off its support.

Before each use inspect ladders for cracked or broken parts such as rungs, steps, side rails, feet and locking components.

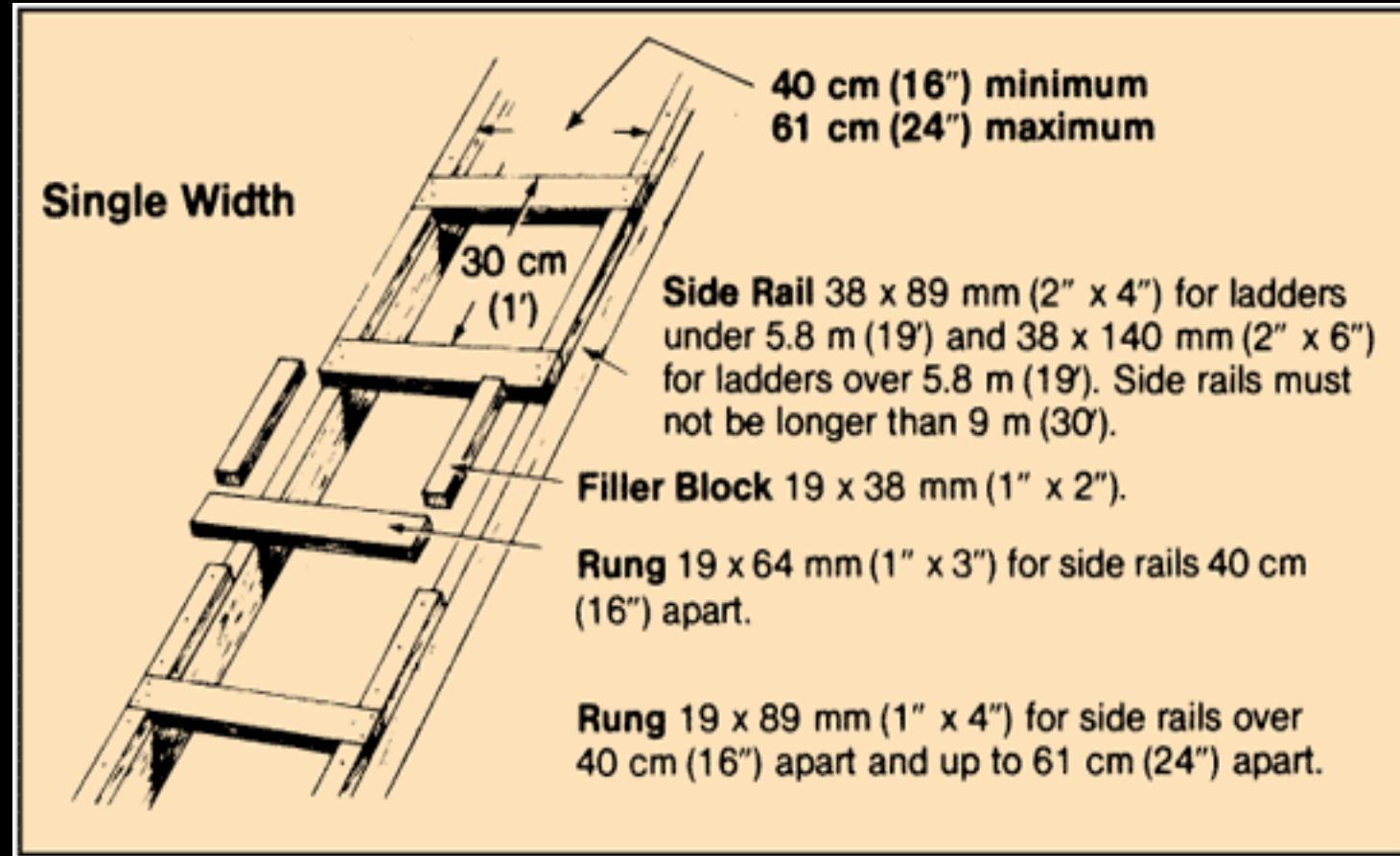
Do not apply more weight on the ladder than it is designed to support [*For additional information, see Ladder Safety.*]

Use only ladders that comply with OSHA design standards [29 CFR 1926.1053(a)(1)].

Vertical Fixed



Job Built







HOLE

Training Required

- Under the provisions of the standard, employers must provide a training program for each employee using ladders and stairways. The program must enable each employee to recognize hazards related to ladders and stairways and to use proper procedures to minimize these hazards. For example, employers must ensure that each employee is trained by a competent person in the following areas, as applicable:
 - The nature of fall hazards in the work area;
 - The correct procedures for erecting, maintaining, and disassembling the fall protection systems to be used;
 - The proper construction, use, placement, and care in handling of all stairways and ladders; and
 - The maximum intended load-carrying capacities of ladders used. In addition, retraining must be provided for each employee, as necessary, so that the employee maintains the understanding and knowledge acquired through compliance with the standard.













Fall Rescue-After the Fall

Rescue Plan

- Needs to be considered by every employer who has fall exposures and is providing PFAS
- How are you going to get the guy down?
- How long have you got before the guy hanging is hurting. Maybe they are already hurt?

Rescue Plan Cont..

- Its not as easy as calling 911
- 29CFR 1926.502(d)(20)
 - Insists employer provide for prompt rescue of fallen employees, IF the employee cant rescue themselves
- Worst case scenario? That's what the employer should plan for.
- What are some options for rescue?

During a Free Fall

- Forces generated to the body can be extreme
- When fall arrest occurs these forces are transferred all over the human body and the support device
- Study in 1968 found that participants in body belt in a jack knife position could last only 1.38 min's before injury

Free Fall Cont...

- In the same study, those in full body harness the average time before injuries started was approximately 30 min's
- According to Argonaut Insurance, the average tolerance time while suspended before numbness, tingling and nausea develop is 14.28 minutes in a harness, and 1.63 min in a belt!

















FT.
LAUD
FIRE
RESCUE

FT. LAUD
FI
RESCUE









EXAM TIME



Introduction & Understanding of OSHA

OSHA®



A vertical American flag is positioned on the left side of the slide, with its stars and stripes extending from the top towards the bottom. The flag is partially cut off at the right edge.

What is OSHA

?????????



OSHA IS

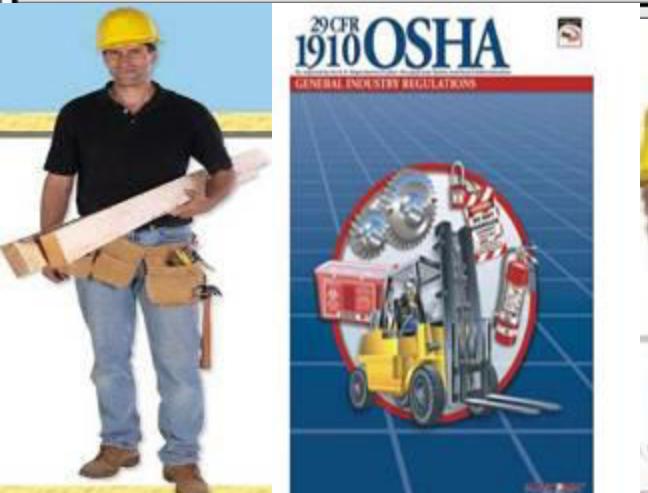
- The
Occupational
Safety and
Health
Administration
- 



DANGER

CONFINED SPACE

ENTER BY PERMIT ONLY



CERTIFIED ONLINE OSHA COURSES

Canary

- OSHA 10/30 HOUR & MORE...
 - PROJECT MANAGEMENT....
 - ESTIMATING...

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GENERAL INFORMATION

Take Your Construction Experience To The Next Level





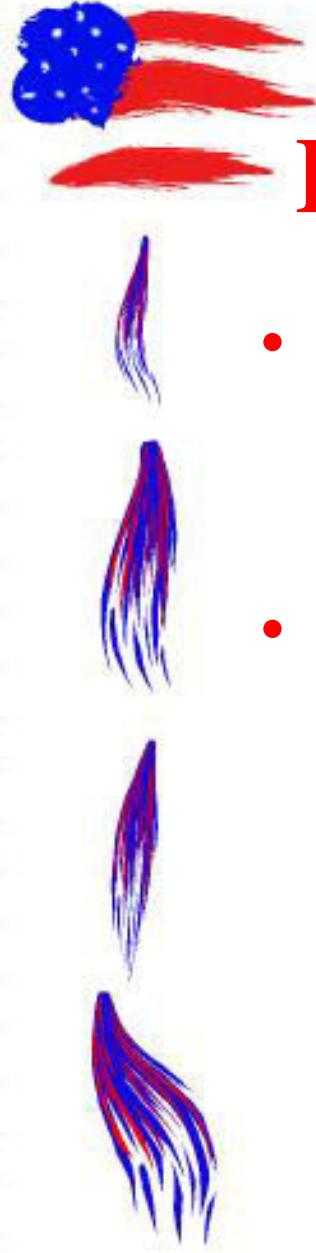
Why Does OSHA Exists

- Because until 1970, no uniform or comprehensive provisions existed to protect against workplace safety and health hazards.
 - On average, 15 workers die every day from work injuries. That's approx., 5,600 workers annually.
 - Approximately 4 million non-fatal job injuries and illnesses reported.
- 



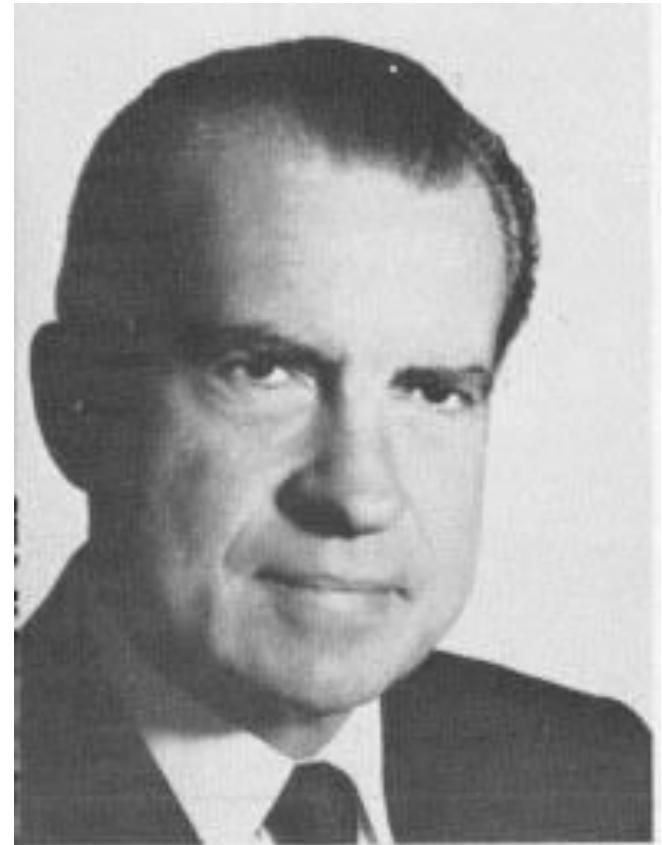
When did OSHA Start?





The Occupational Safety and Health Act of 1970 – 29 USC 653

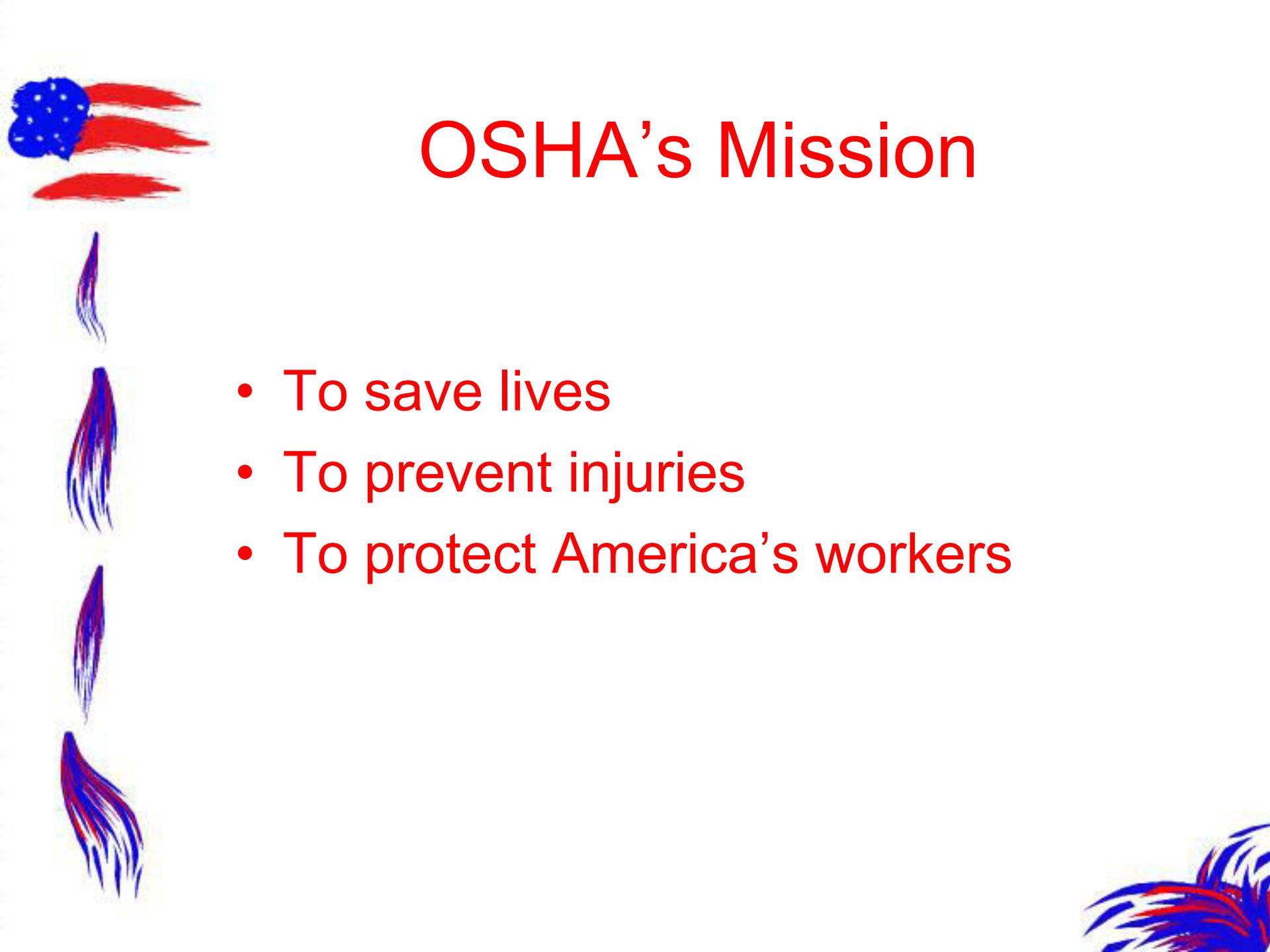
- Signed into law on December 29, 1970 by Richard M. Nixon.
- Act established OSHA (Occupational Safety and Health Administration), and its responsibility to provide worker safety and health protection.





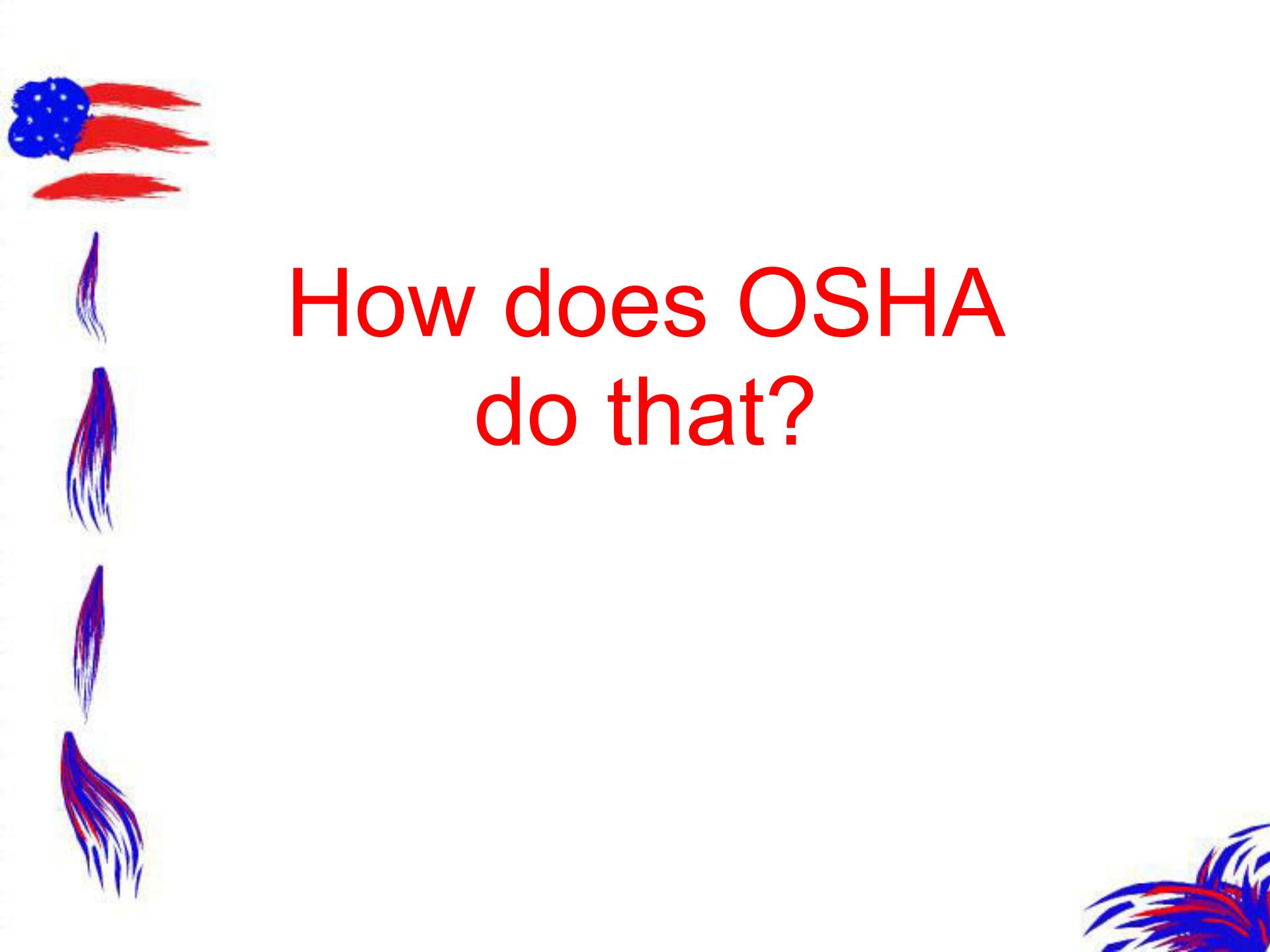
What is OSHA's Mission?



A stylized American flag is positioned vertically along the left side of the slide. It features blue stars in the upper left corner, red and white horizontal stripes, and a fringe of blue and red stars at the bottom.

OSHA's Mission

- To save lives
- To prevent injuries
- To protect America's workers

A stylized American flag is positioned vertically along the left side of the slide. It features blue stars in the upper left corner, followed by horizontal stripes in red, white, and blue. Three vertical tassels, each composed of red, white, and blue fibers, hang from the stripes. A small portion of the flag is visible in the bottom right corner.

How does OSHA do that?

- Provide for research
- Establish separate but dependent responsibilities and rights for employers/employees
- Maintain reporting & recordkeeping system
- Establish safety training prgs
- Develop & enforce safety standards
- Evaluate and approve state safety prgs

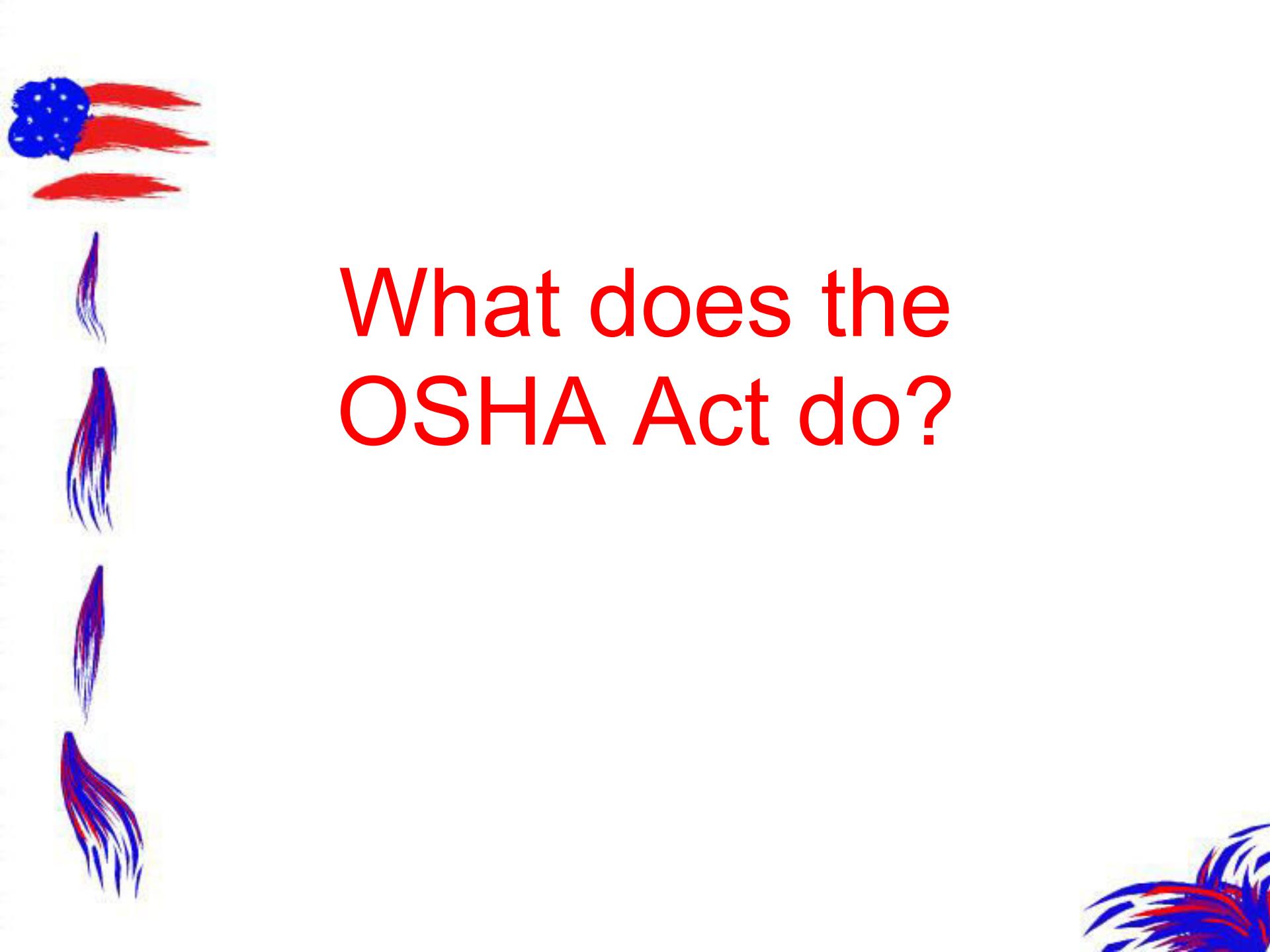


THE OSH ACT



**Is Also Known As The
Williams Steiger
Occupational Safety and
Health Act of 1970**



A stylized American flag is positioned vertically along the left side of the slide. It features blue stars in the upper left corner, followed by horizontal stripes in red, white, and blue. Three vertical stripes extend from the bottom of the flag towards the center of the slide, each ending in a small, flowing brushstroke.

What does the OSHA Act do?



The OSHA Act

- Establishes specific responsibilities to Employer
 - Establishes specific responsibilities to Employees
- 



OSHA Act Coverage Cont...

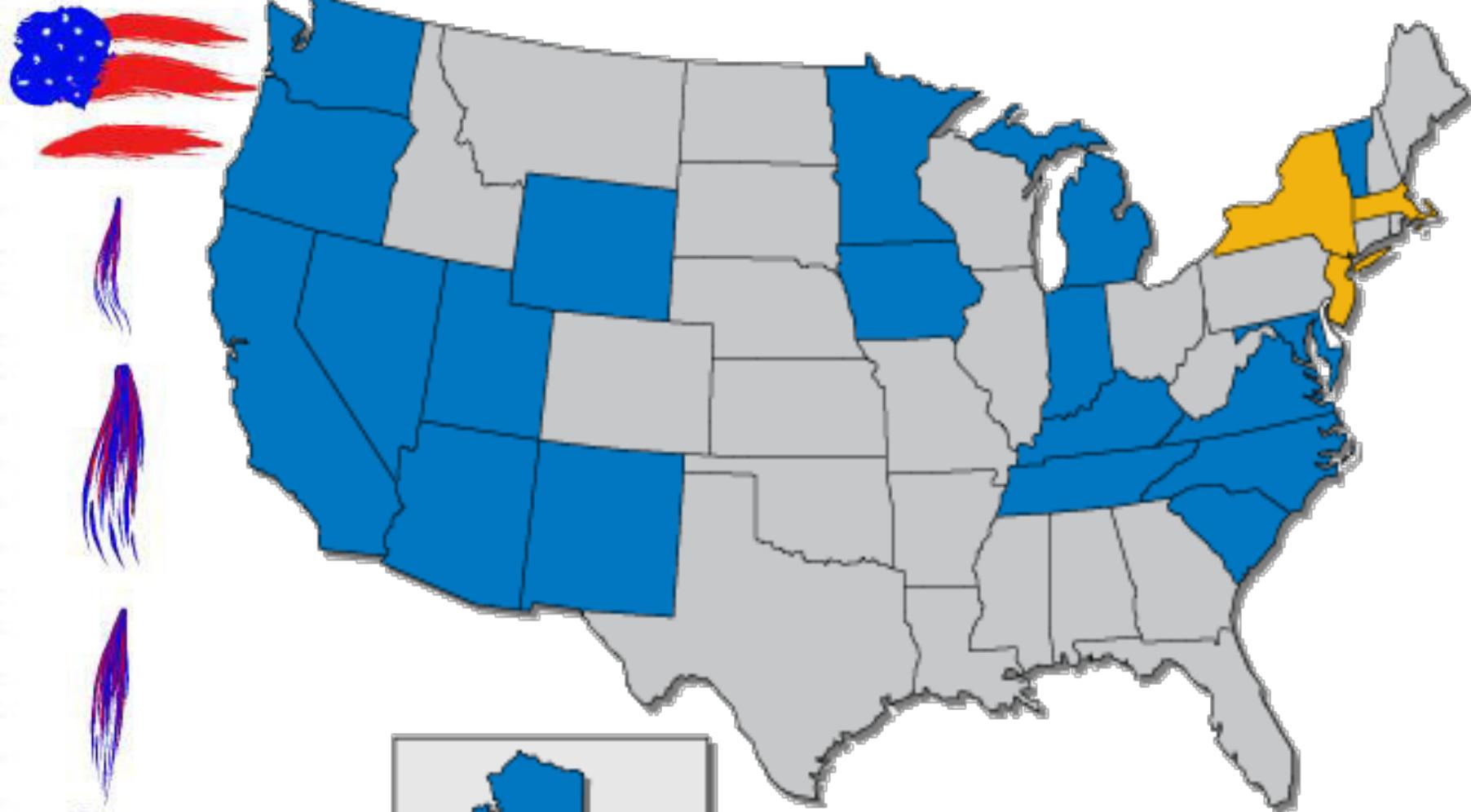
- It does not cover self employed persons
 - Farms at which only immediate family members are employed
 - Workplaces already protected by other govt agencies under other federal laws
- 



Federal and State OSHA

- The *OSH Act* covers employers and employees either directly through federal OSHA or through an OSHA approved state program.
- 24 States, plus Puerto Rico and the Virgin Islands have approved programs.

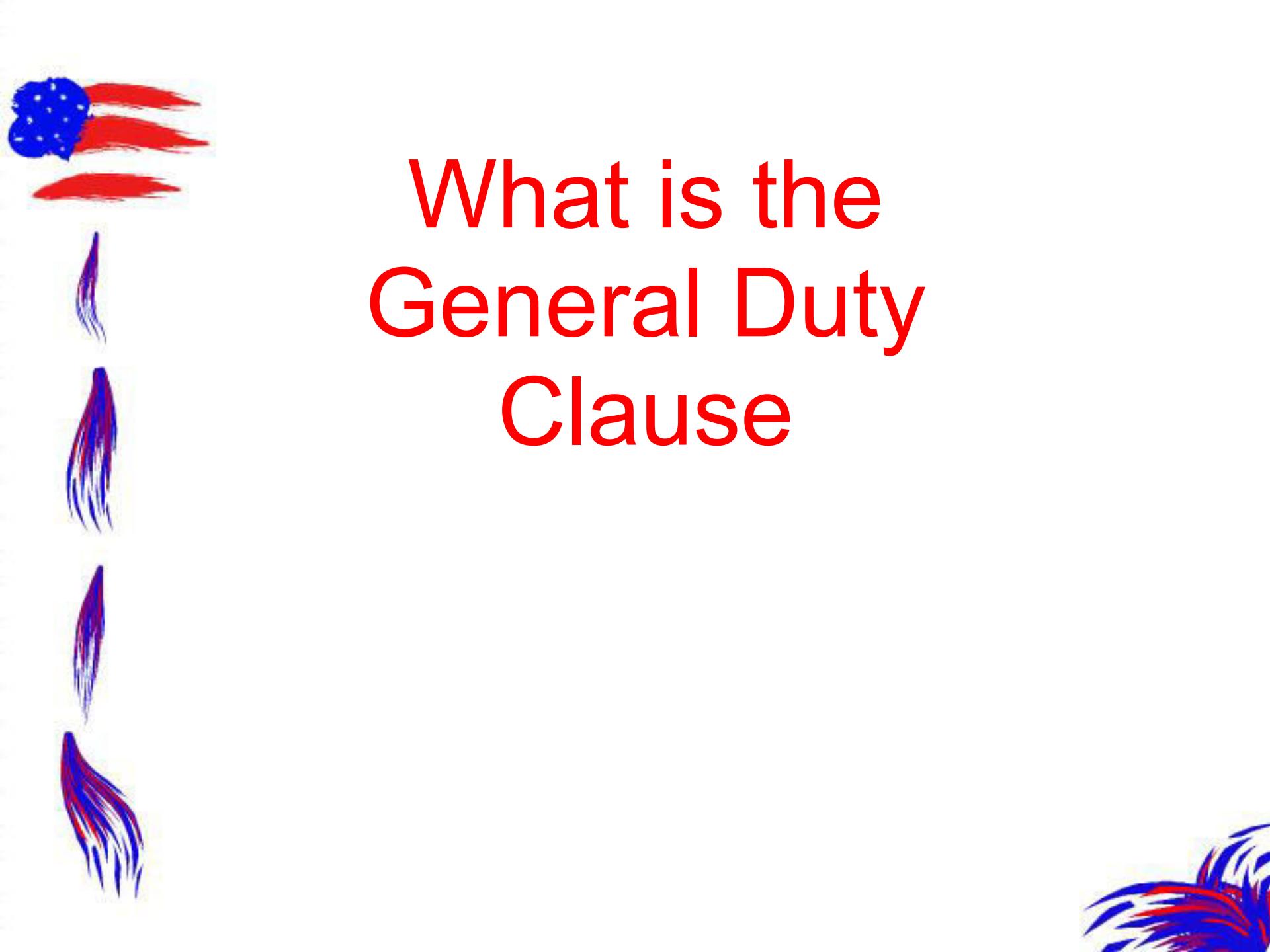




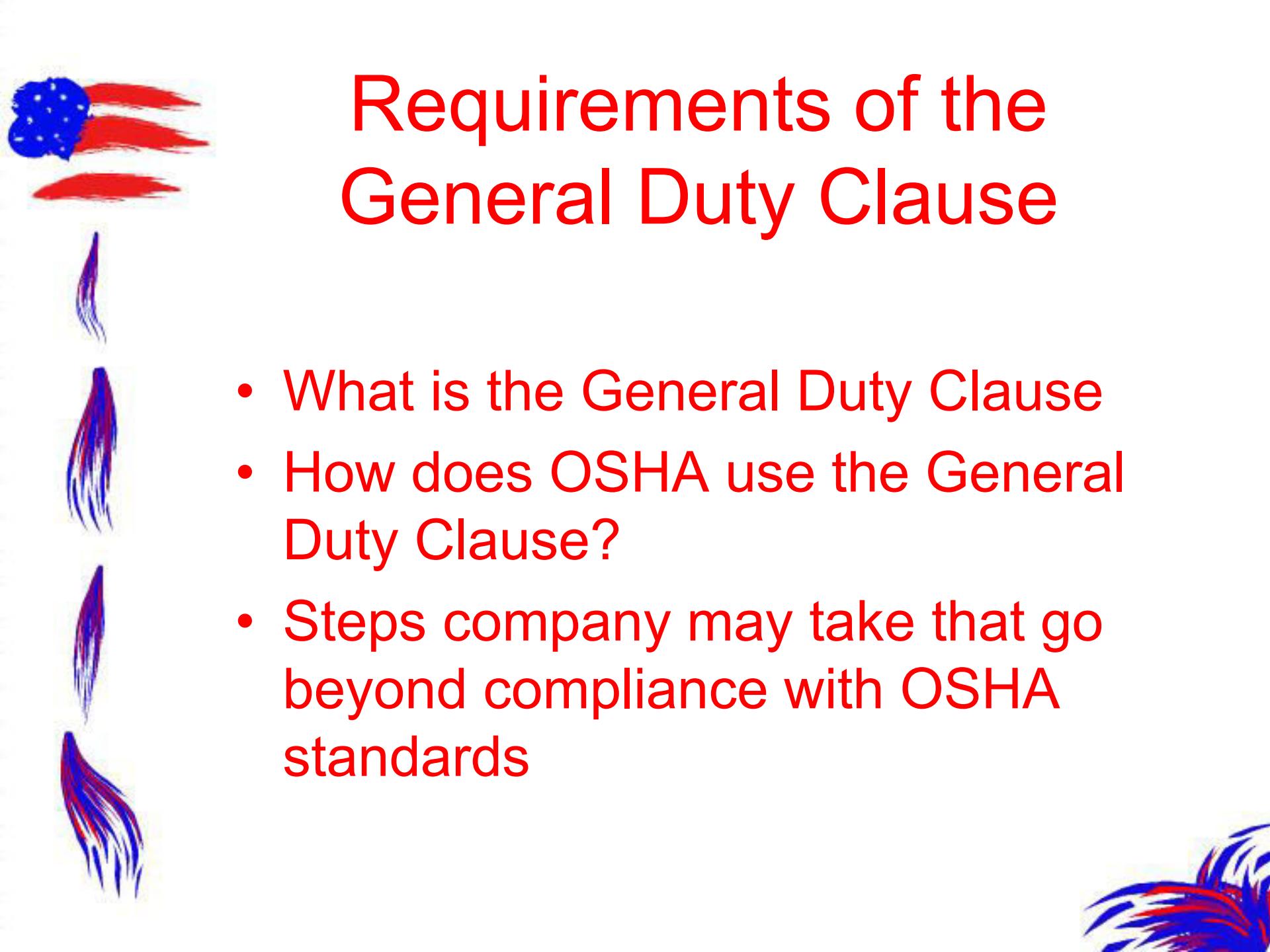
■ States with Occupational Safety and Health Plans (21)

■ States with OSH plans pertaining only to the public sector (3)



A vertical American flag is positioned on the left side of the slide. It features the stars and stripes in red, white, and blue. The flag is partially visible, with the top portion showing the stars and stripes, and the bottom portion showing the blue field with white stars. The flag is oriented vertically, running from top to bottom.

What is the General Duty Clause

A decorative border on the left side of the slide features vertical stripes in red, white, and blue, with a small American flag at the top.

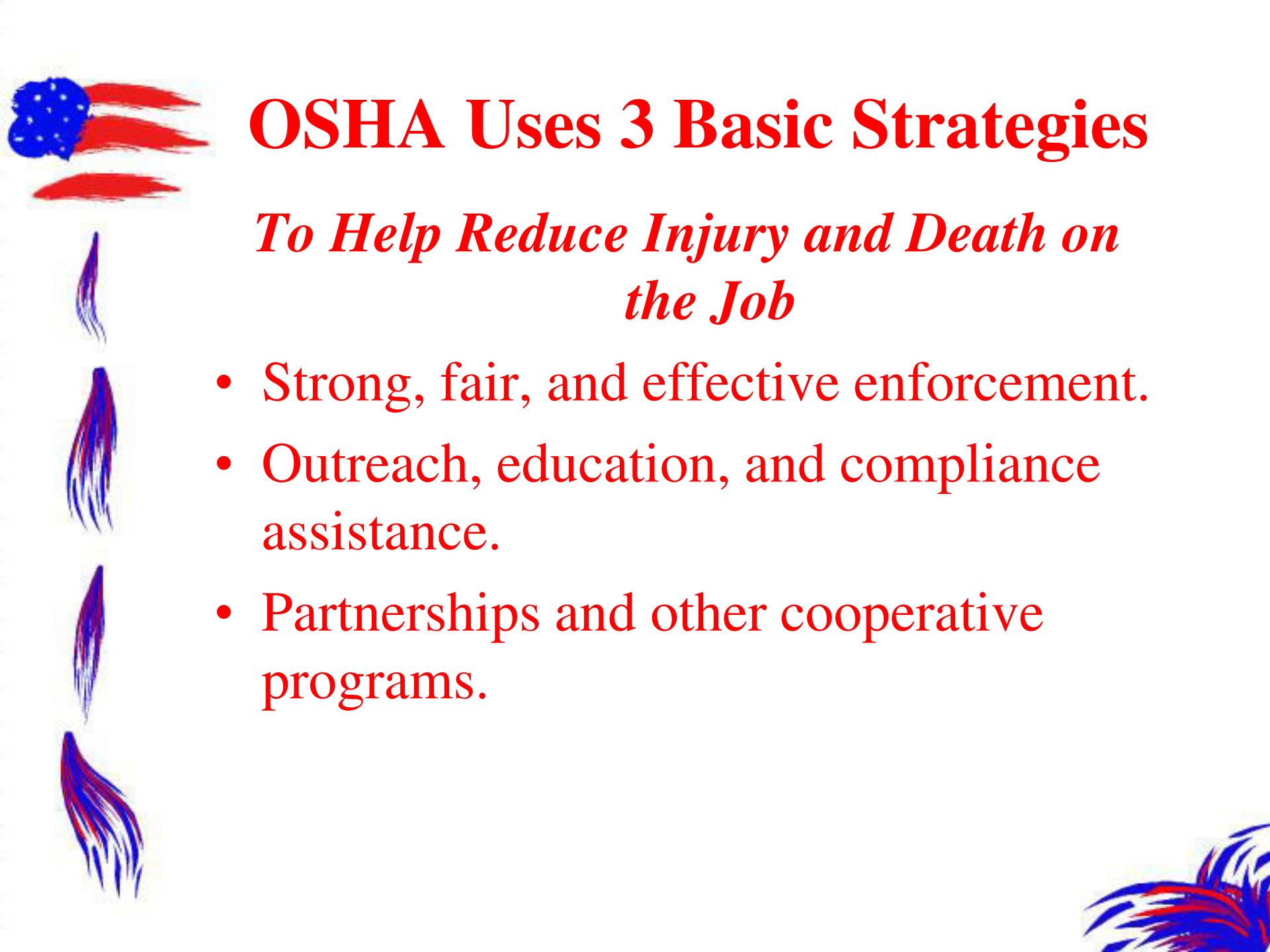
Requirements of the General Duty Clause

- What is the General Duty Clause
- How does OSHA use the General Duty Clause?
- Steps company may take that go beyond compliance with OSHA standards



How does OSHA Accomplish its Mission



A decorative graphic of the American flag, featuring stars in the upper left corner and horizontal stripes across the rest of the slide.

OSHA Uses 3 Basic Strategies

*To Help Reduce Injury and Death on
the Job*

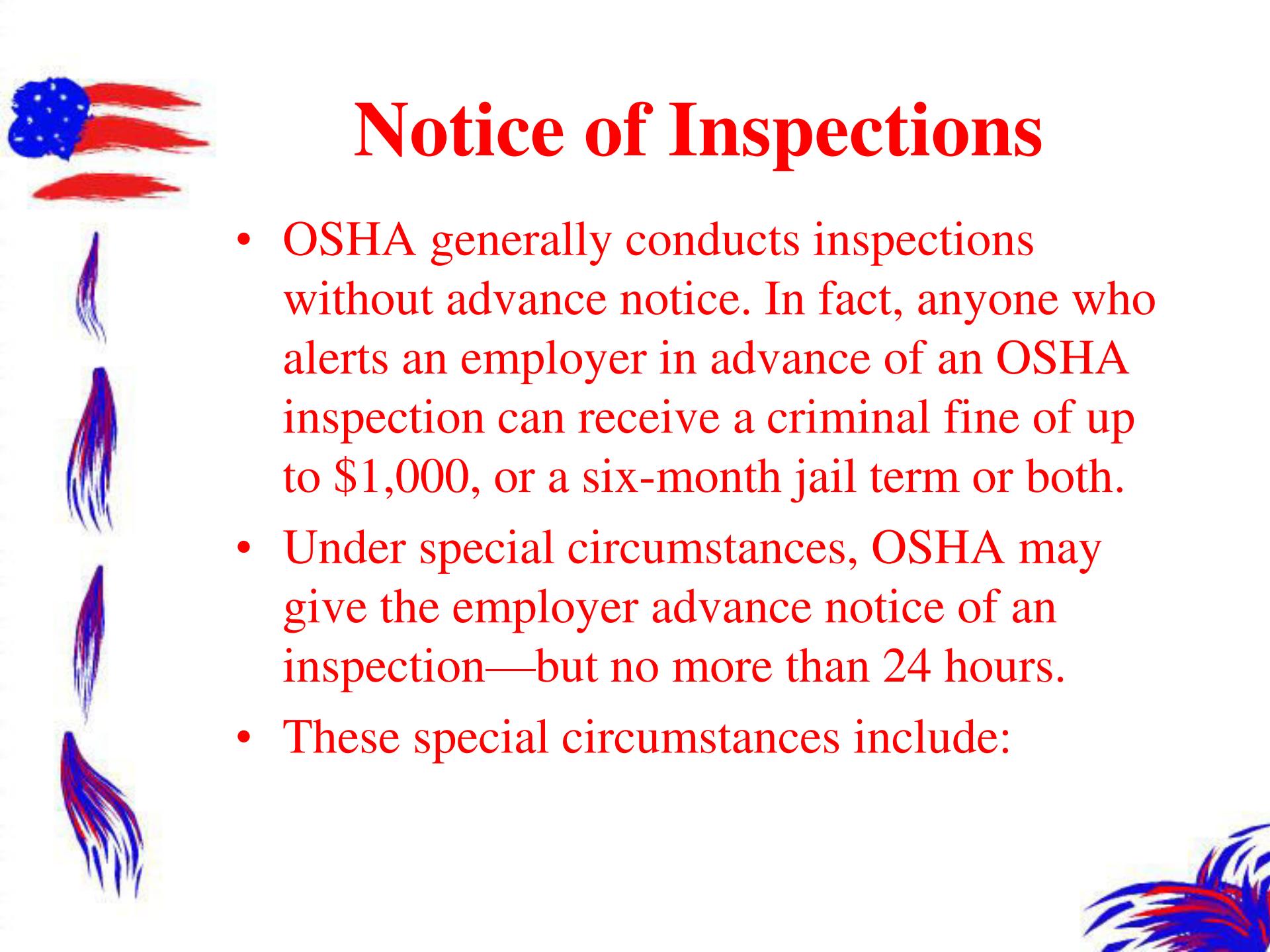
- Strong, fair, and effective enforcement.
- Outreach, education, and compliance assistance.
- Partnerships and other cooperative programs.



Workplace Inspections

- Authority
- Normally notice is not given
- Employee's representative must be informed



A vertical decorative element on the left side of the slide, featuring the stars and stripes of the United States flag. It is composed of several horizontal stripes of varying widths, with a cluster of stars at the top. The colors are a mix of blue, red, and white.

Notice of Inspections

- OSHA generally conducts inspections without advance notice. In fact, anyone who alerts an employer in advance of an OSHA inspection can receive a criminal fine of up to \$1,000, or a six-month jail term or both.
- Under special circumstances, OSHA may give the employer advance notice of an inspection—but no more than 24 hours.
- These special circumstances include:

- Imminent danger situations, which require correction immediately.
- Inspections that must take place after regular business hours, or require special preparation.
- Cases where OSHA must provide advance notice to assure that the employer and employee representative or other personnel will be present.
- Situations in which OSHA determines that advance notice would produce a more thorough or effective inspection.



OSHA Inspection Priorities

- **Imminent Danger** or any condition where there is reasonable certainty that a danger exists that can be expected to cause death or serious physical harm immediately.
- **Catastrophes and fatal accidents** resulting in the death of any employee or the hospitalization of three or more employees.

A vertical decorative element on the left side of the slide, featuring the stars and stripes of the United States flag. It consists of several horizontal stripes of varying widths, with a cluster of stars at the top.

OSHA Inspection Priorities

- **Employee complaints** involving imminent danger or an employer violation that threatens death or serious physical harm.
- **Referrals** from other individuals, agencies, organizations, or the media.
- **Planned, or programmed, inspections** in industries with a high number of hazards and associated injuries.
- **Follow-ups** to previous inspections.



Inspections Process

A typical OSHA on-site inspection includes four stages:

1. Presentation of inspector credentials.
 2. An opening conference.
 3. An inspection walk-around.
 4. A closing conference.
- 



Opening Conference

- In the opening conference, the compliance officer:
- Explains why OSHA selected the establishment for inspection.
- Obtains information about the establishment.
- Explains the purpose of the visit, the scope of the inspection, walk-around procedures, employee representation, employee interviews, and the closing conference.
- Determines whether an OSHA funded consultation is in progress or whether the facility has received an inspection exemption.
- If so, the compliance officer usually terminates the inspection.



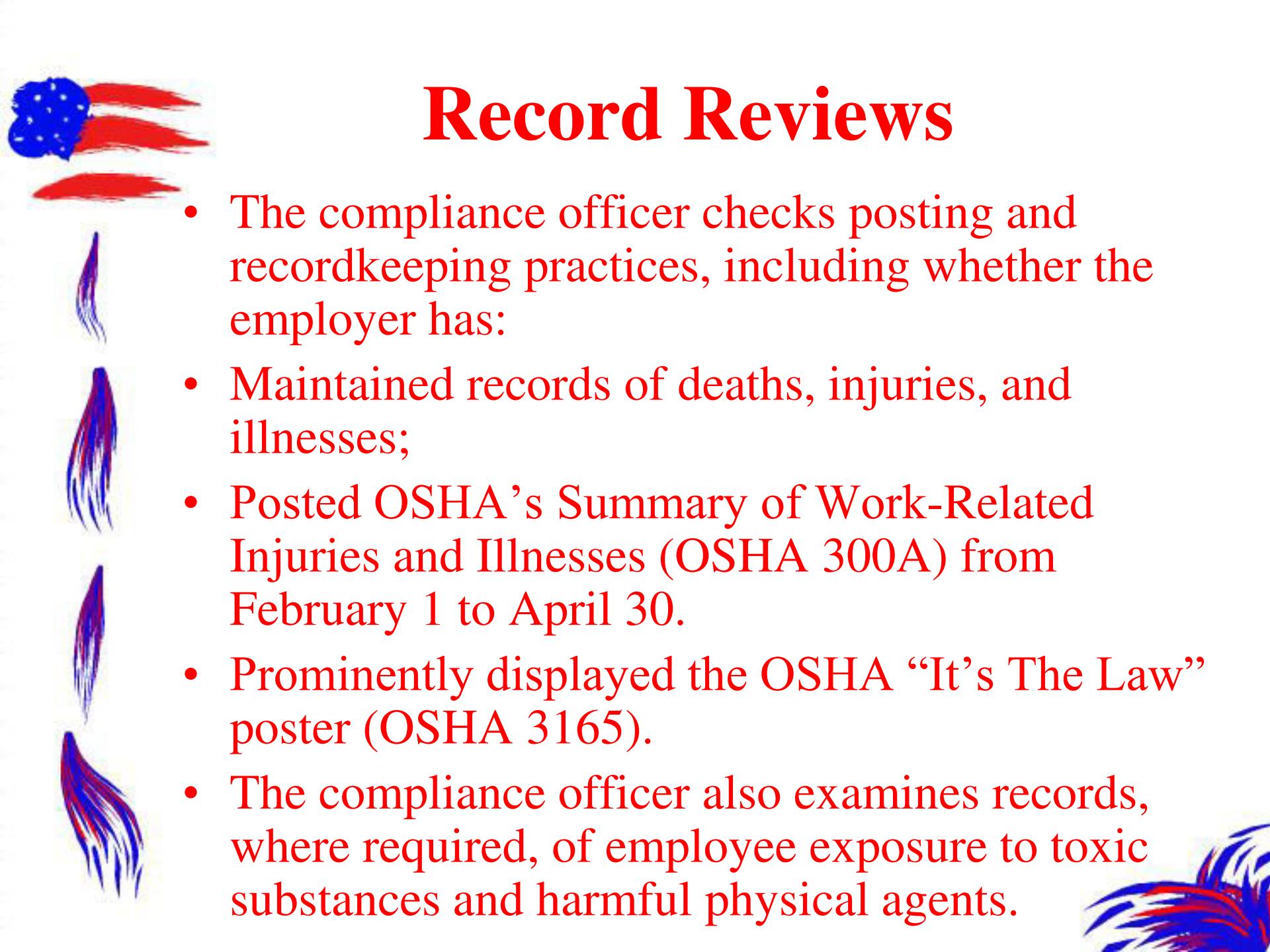
Inspection Walk-around

- After the opening conference, the compliance officer and accompanying representatives proceed through the establishment, inspecting work areas for potentially hazardous working conditions.
- The compliance officer will discuss possible corrective actions with the employer.
- OSHA may consult, at times privately, with employees during the inspection walk-around.



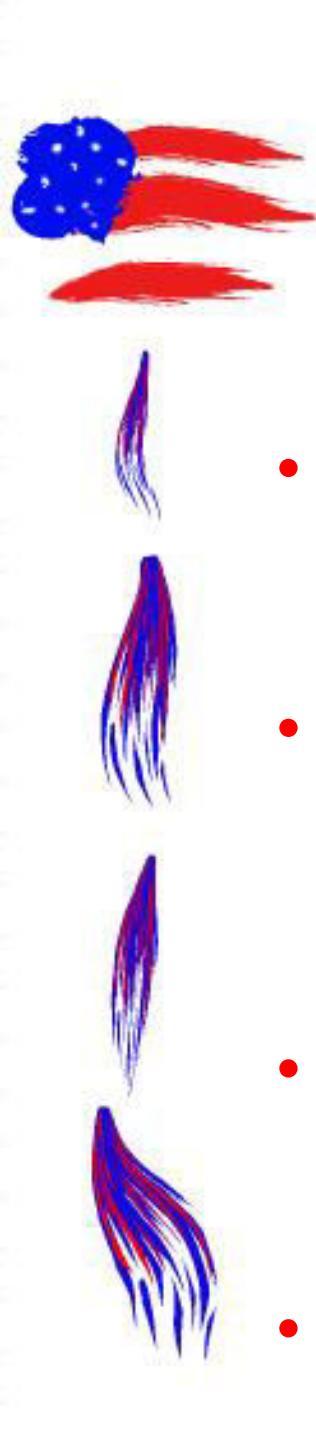
Inspection Walk-around

- An inspection walk-around may cover only part of an establishment – particularly if the inspection resulted from a specific complaint, fatality, or catastrophe, or, is part of a local or national emphasis program.
- Other inspections may cover the entire facility, “wall to wall.”
- Trade secrets observed by the compliance officers are kept confidential.
- Federal employees who release confidential information without authorization are subject to a \$1,000 fine, one year in jail, or both, and removal from office or employment.



Record Reviews

- The compliance officer checks posting and recordkeeping practices, including whether the employer has:
- Maintained records of deaths, injuries, and illnesses;
- Posted OSHA's Summary of Work-Related Injuries and Illnesses (OSHA 300A) from February 1 to April 30.
- Prominently displayed the OSHA "It's The Law" poster (OSHA 3165).
- The compliance officer also examines records, where required, of employee exposure to toxic substances and harmful physical agents.

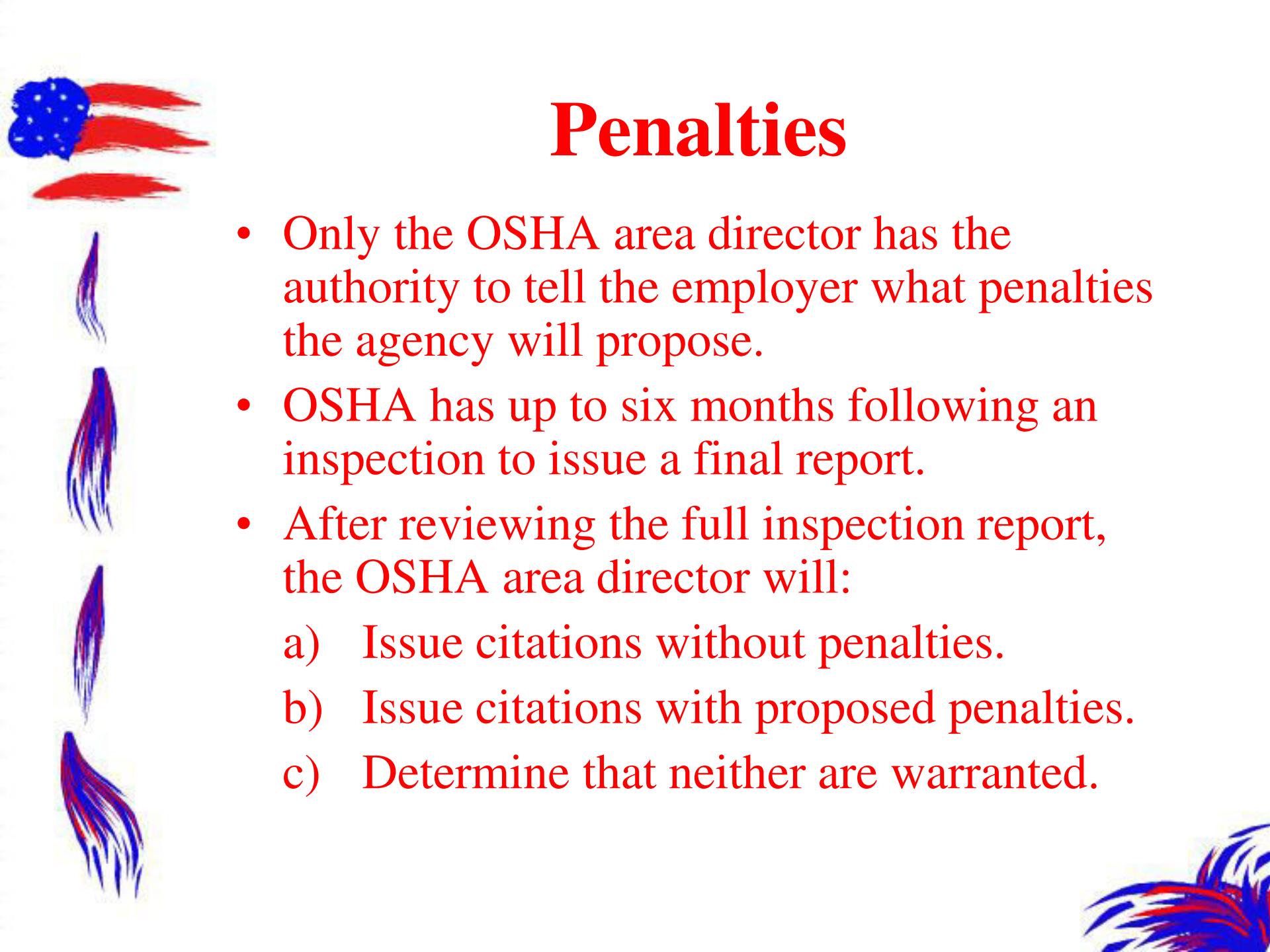


OSHA Citations

Citations inform the employer and employees of:

- Regulations and standards the employer allegedly violated.
- Any hazardous working conditions covered by the *OSH Act's* general duty clause.
- The proposed length of time set for abatement of hazards.
- Any proposed penalties.





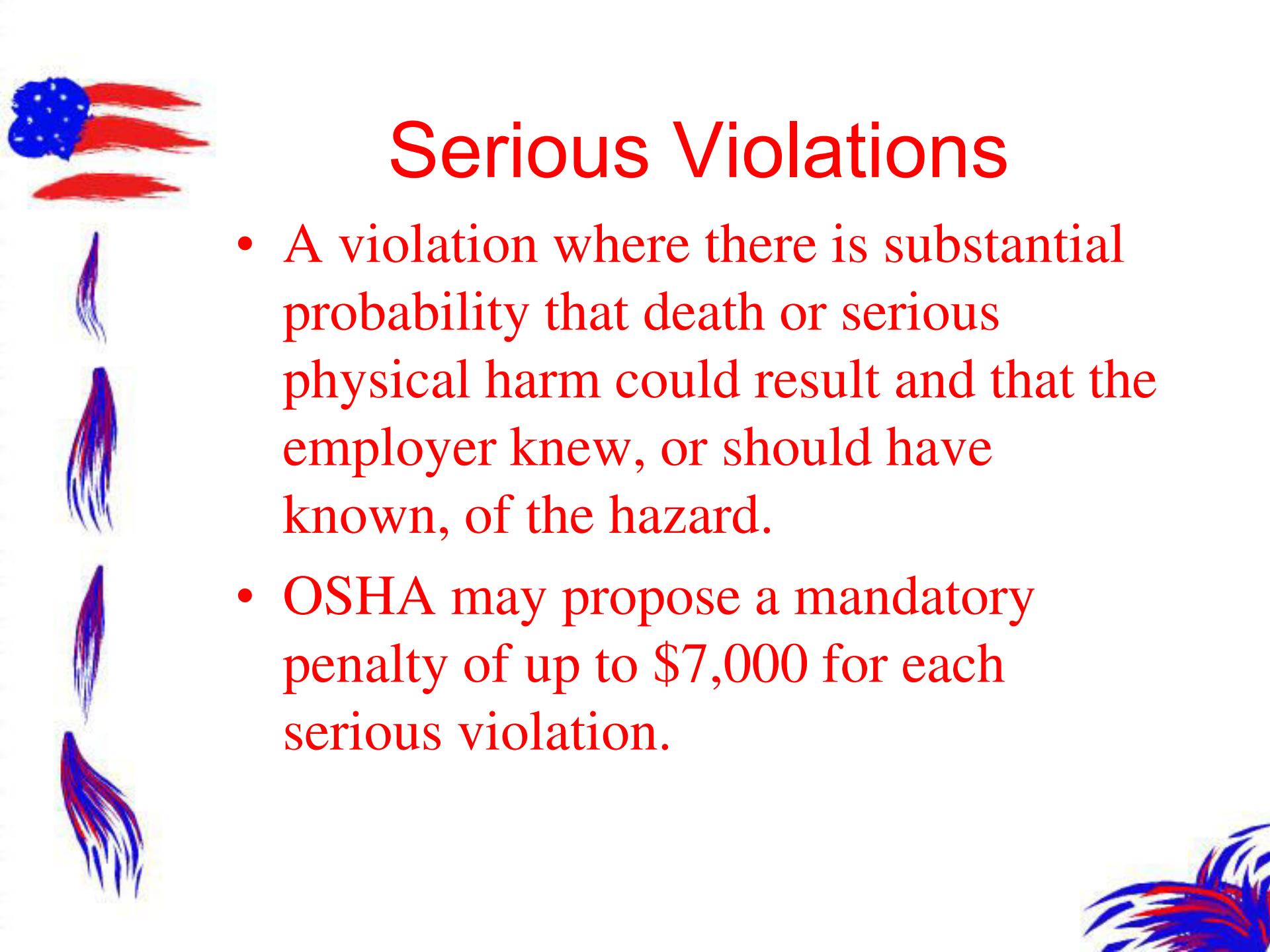
Penalties

- Only the OSHA area director has the authority to tell the employer what penalties the agency will propose.
- OSHA has up to six months following an inspection to issue a final report.
- After reviewing the full inspection report, the OSHA area director will:
 - a) Issue citations without penalties.
 - b) Issue citations with proposed penalties.
 - c) Determine that neither are warranted.



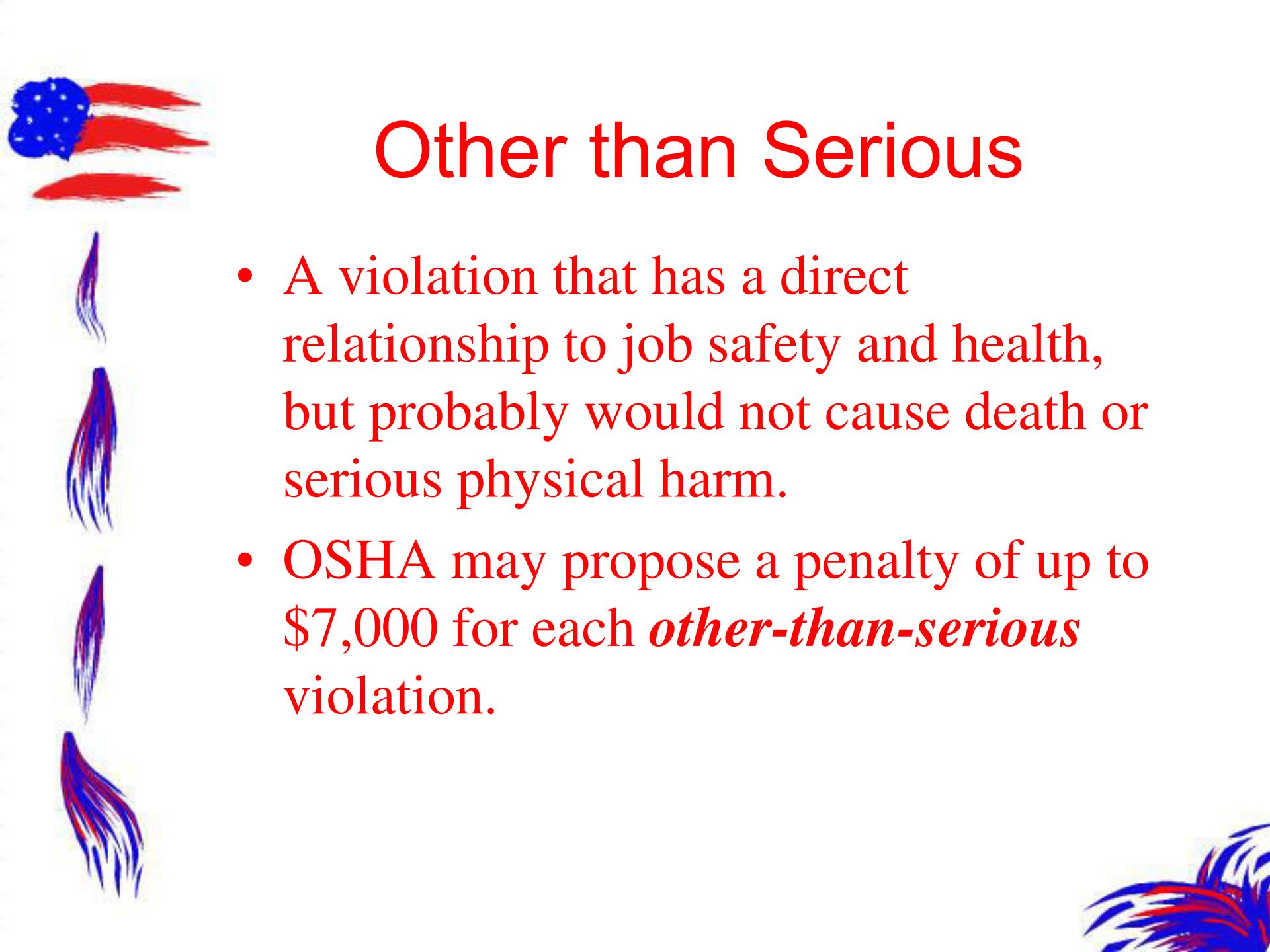
Penalties Cont....

- Serious
 - Other than serious
 - Willful
 - Repeat
 - Failure to Abate
- 

A decorative border for the slide featuring the American flag's stars and stripes in a stylized, brush-stroke style.

Serious Violations

- A violation where there is substantial probability that death or serious physical harm could result and that the employer knew, or should have known, of the hazard.
- OSHA may propose a mandatory penalty of up to \$7,000 for each serious violation.

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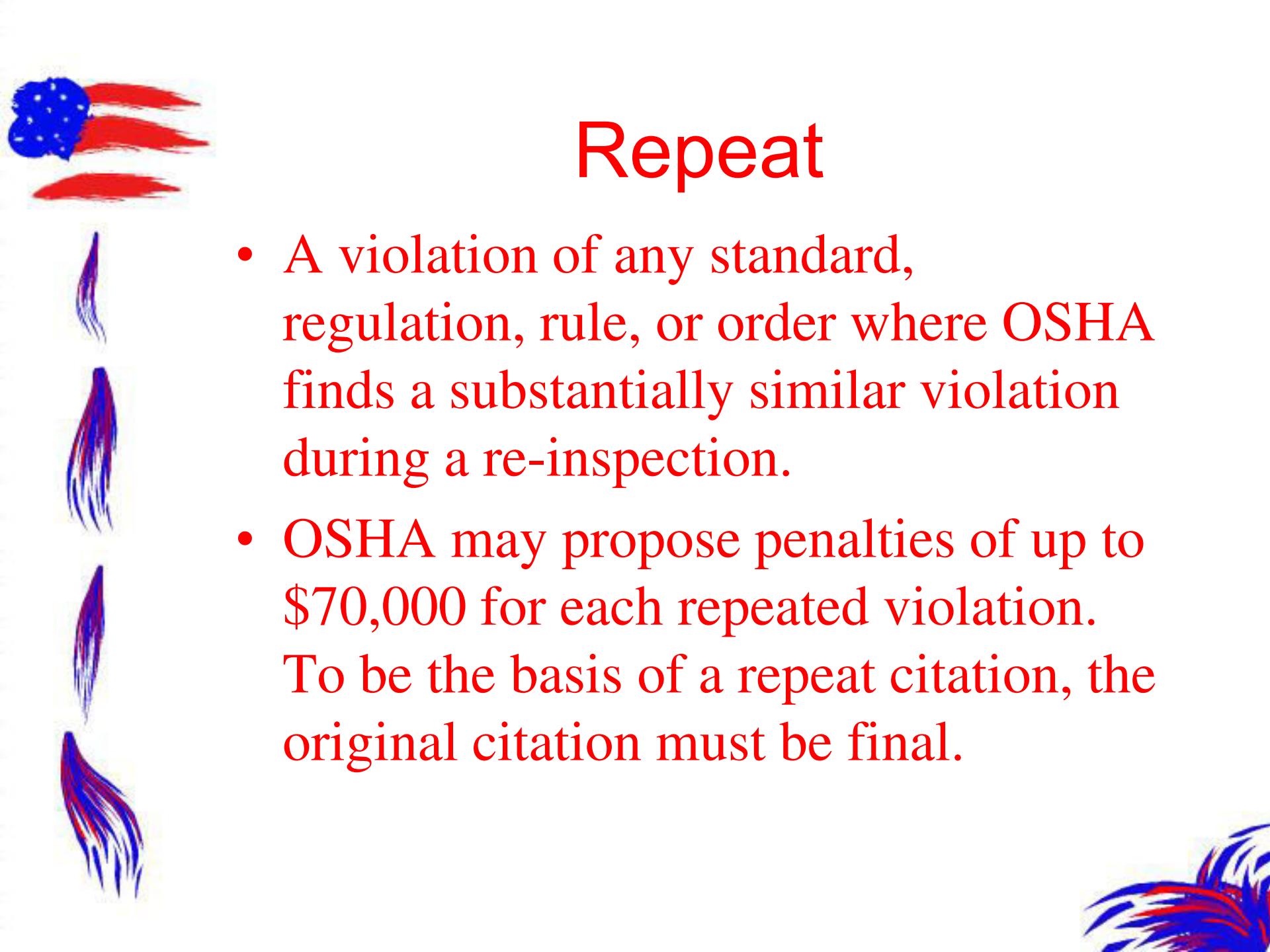
Other than Serious

- A violation that has a direct relationship to job safety and health, but probably would not cause death or serious physical harm.
- OSHA may propose a penalty of up to \$7,000 for each *other-than-serious* violation.



Willful

- A violation that the employer intentionally and knowingly commits or a violation that the employer commits with plain indifference to the law. The employer either knows that what he or she is doing constitutes a violation, or is aware that a hazardous condition existed and made no reasonable effort to eliminate it.
- OSHA may propose penalties of up to \$70,000 for each willful violation, with a minimum penalty of \$5,000 for each willful violation

A decorative border on the left and bottom edges of the slide features a stylized American flag. The top edge shows stars and the bottom edge shows red and white stripes. Vertical blue and red streamers extend from the sides.

Repeat

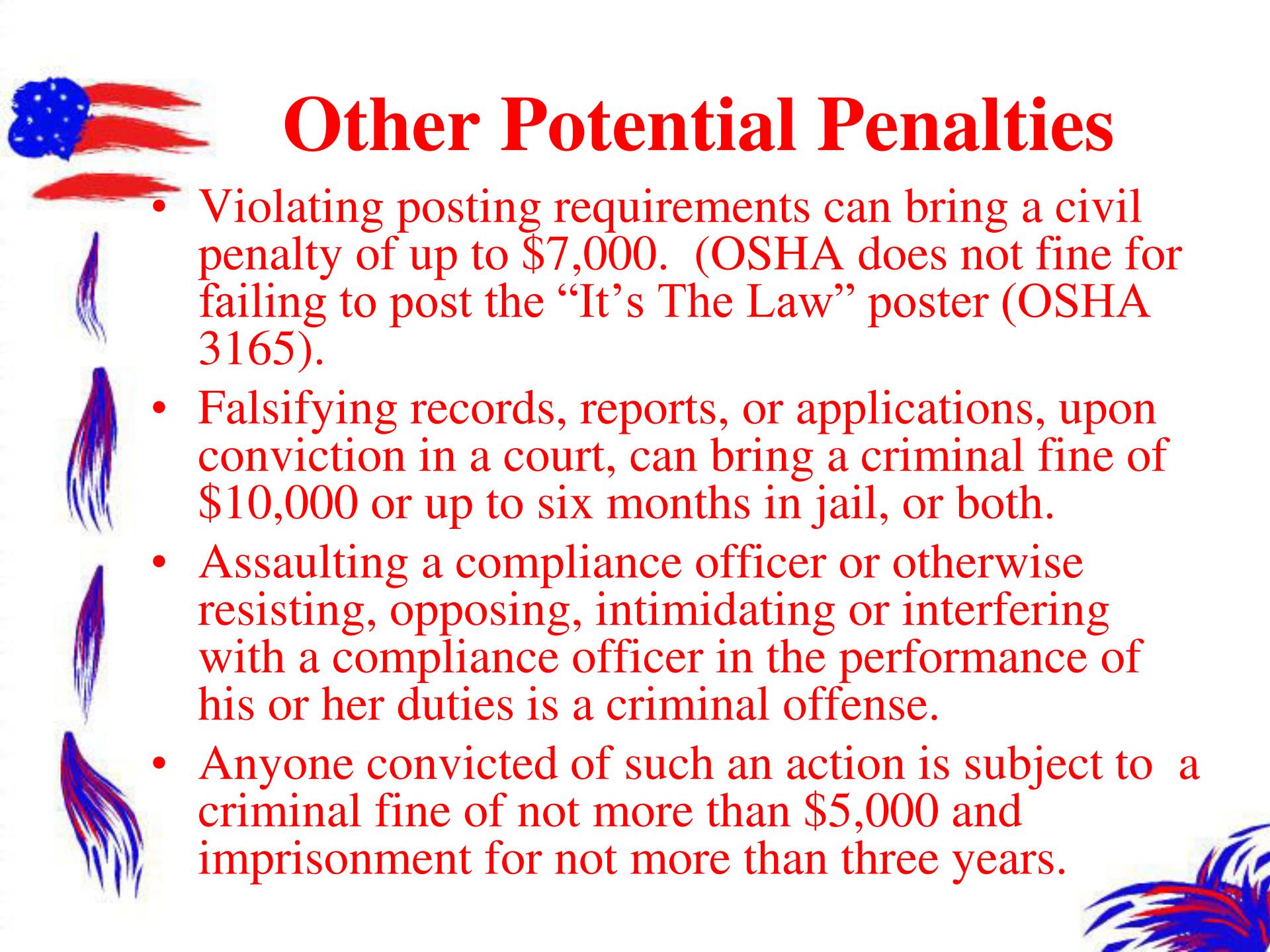
- A violation of any standard, regulation, rule, or order where OSHA finds a substantially similar violation during a re-inspection.
- OSHA may propose penalties of up to \$70,000 for each repeated violation. To be the basis of a repeat citation, the original citation must be final.



Failure to Abate

- OSHA may propose an additional penalty of up to \$7,000 for *each day* an employer fails to correct a previously cited violation beyond the prescribed abatement date.





Other Potential Penalties

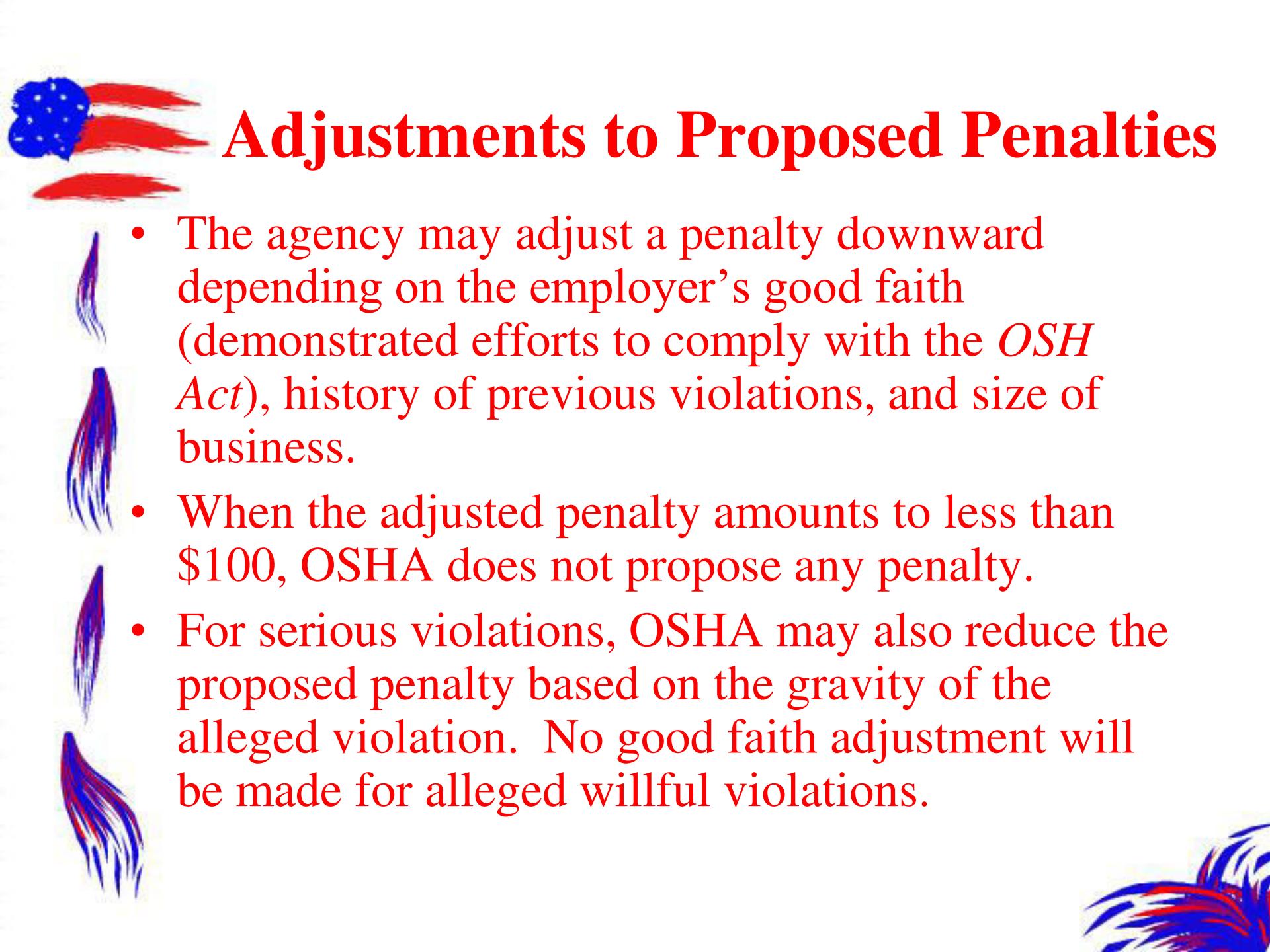
- Violating posting requirements can bring a civil penalty of up to \$7,000. (OSHA does not fine for failing to post the “It’s The Law” poster (OSHA 3165).)
- Falsifying records, reports, or applications, upon conviction in a court, can bring a criminal fine of \$10,000 or up to six months in jail, or both.
- Assaulting a compliance officer or otherwise resisting, opposing, intimidating or interfering with a compliance officer in the performance of his or her duties is a criminal offense.
- Anyone convicted of such an action is subject to a criminal fine of not more than \$5,000 and imprisonment for not more than three years.

Violation Categories and Possible Penalties

Type of Violation	Minimum Penalty Per Violation	Maximum Penalty Per Violation
Other-than-serious		\$7,000
Serious	\$100*	\$7,000
Posting		\$7,000
Willful	\$5,000	\$70,000
Willful, with fatality, first conviction		\$250,000/\$500,000 or six months in prison or both **
Willful, with fatality, second conviction		\$250,000/\$500,000 or one year in prison or both **
Repeated	\$5,000	\$70,000
Failure to abate		\$7,000 per day

* Set as OSHA policy in the Field Inspection Reference Manual (FIRM)

** The monetary criminal fine is set by *Title 18 of the U.S. Code* (Crimes and Criminal Procedure), Section 3571, which states that individuals found guilty of an offense may not be fined more than \$250,000, and organizations not more than \$500,000.



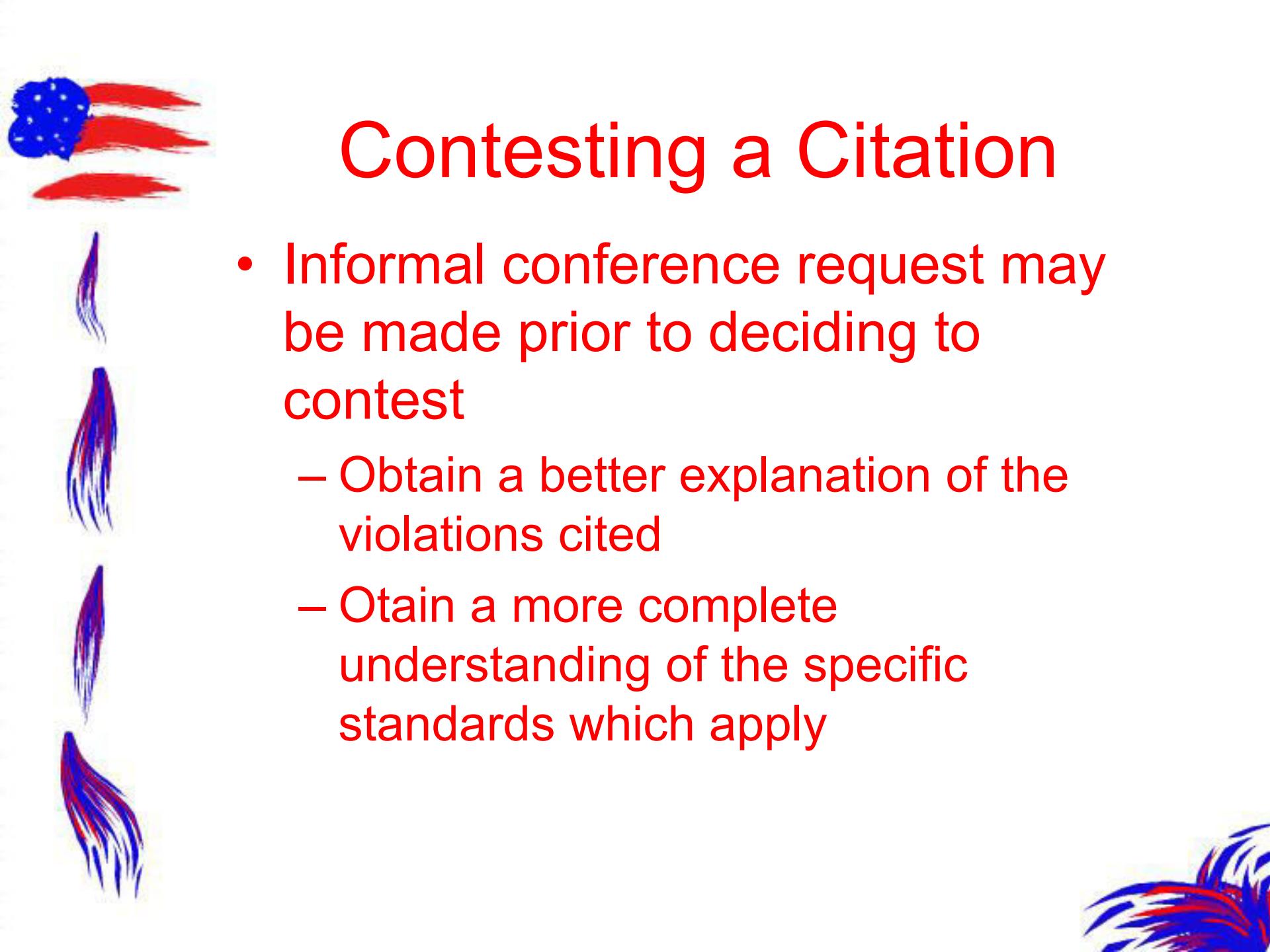
Adjustments to Proposed Penalties

- The agency may adjust a penalty downward depending on the employer's good faith (demonstrated efforts to comply with the *OSH Act*), history of previous violations, and size of business.
- When the adjusted penalty amounts to less than \$100, OSHA does not propose any penalty.
- For serious violations, OSHA may also reduce the proposed penalty based on the gravity of the alleged violation. No good faith adjustment will be made for alleged willful violations.

Criminal Penalties

- An employer who is convicted in a criminal proceeding of a willful violation of a standard that has resulted in the death of an employee may be fined up to \$250,000 (or \$500,000 if the employer is a corporation) or imprisoned up to six months, or both.
- A second conviction doubles the possible term of imprisonment.



A decorative graphic of the American flag is positioned vertically along the left side of the slide. It features the stars and stripes in red, white, and blue, with frayed, flowing ends at the bottom.

Contesting a Citation

- Informal conference request may be made prior to deciding to contest
 - Obtain a better explanation of the violations cited
 - Obtain a more complete understanding of the specific standards which apply

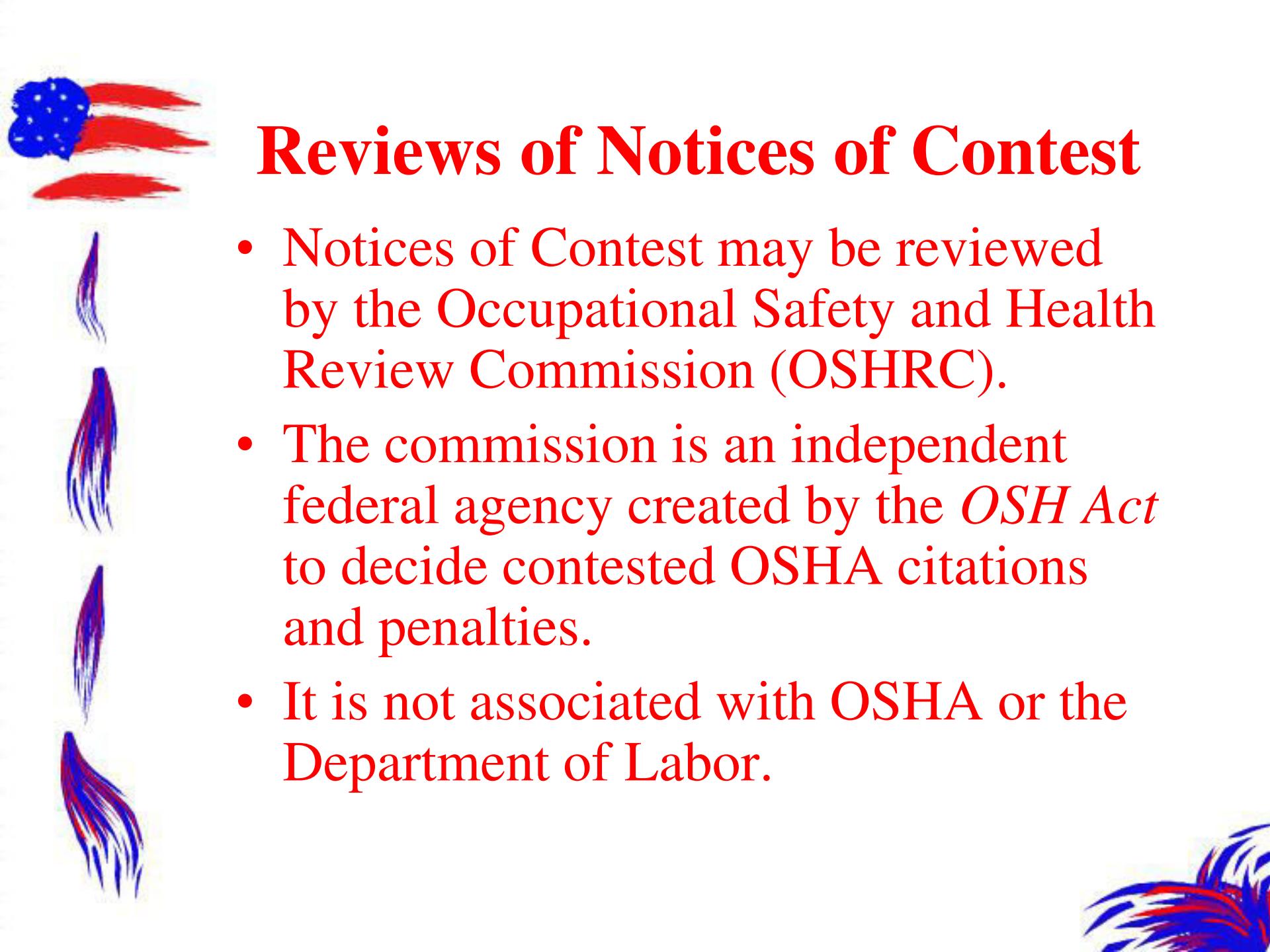
A vertical decorative element on the left side of the slide features a stylized American flag. It includes a blue canton with white stars at the top, followed by horizontal stripes in red, white, and blue. Below the flag, there are four vertical stripes of the same colors (blue, white, red, blue) arranged vertically.

Contesting Cont...

- Negotiate and enter into an informal Settlement Agreement
- Discuss ways to correct the violations
- Discuss problems with the abatement dates
- Discuss problems concerning employee
- Resolve disputed citations/penalties

Review of Notices of Contest



A stylized American flag graphic is positioned on the left side of the slide. It features the stars and stripes in blue, red, and white colors, with some frayed edges at the bottom.

Reviews of Notices of Contest

- Notices of Contest may be reviewed by the Occupational Safety and Health Review Commission (OSHRC).
- The commission is an independent federal agency created by the *OSH Act* to decide contested OSHA citations and penalties.
- It is not associated with OSHA or the Department of Labor.

Reviews of Notices of Contest

- The commission will assign an administrative law judge to hear the case.
- The administrative law judge may:
 - a) Find the contest legally invalid and disallow it, or
 - b) Set a hearing for a public place near the employer's workplace.
- The employer and the employees have the right to participate in the hearing.
- From there, appeals would go to the U. S. Court of Appeals.





OSHA Recordkeeping

Requirements 29 CFR 1904

- OSHA's reporting and recordkeeping regulations require employers to:
- Maintain records in each establishment of occupational injuries and illnesses as they occur, and make those records accessible to employees.
- Keep injury and illness records and post from February 1 through April 30 an annual summary of occupational injuries and illnesses for each establishment.
- A company executive must certify the accuracy of the summary.



Employer Requirements

- Record any fatality regardless of the length of time between the injury and the death.
 - Provide, upon request, pertinent injury and illness records for inspection and copying by any representative of the Secretaries of Labor or HHS, or the state during any investigation, research, or statistical compilation.
 - Comply with any additional recordkeeping and reporting requirements in specific OSHA standards.
- 

OSHA's Form 300

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2001

U.S. Department of Labor

Occupational Safety And Health Administration

Form approved OMB No. 1210-0110

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must record significant work-related injuries and illness that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illness that meet any of the specific recording criteria listed in 29 CFR Part 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 300) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Established Name _____
City _____ State _____

Identify the person**Describe the case****Classify the case**

(A) Case no.	(B) Employee's name	(C) Job title (e.g., Welder)	(D) Date of Injury or onset of illness	(E) Where the event occurred (e.g., loading dock, north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill. (e.g., Second degree burn on right forearm from acetylene torch)
003-2 001	Chamraz, George R.	Quality Assurance Mgr	8/28/2001 monthly.	Factory QA	Laceration, R index finger
003-2 001	Spudwills, et	Machine Assembler B	1/9/2001 monthly.	Machine Shop	Contusion/Strain, Contusion to head, strain to left neck and shoulder
003-2 001	Spudwills, et	Machine Assembler B	1/9/2001 monthly.	Machine Shop	Contusion/Strain, Contusion to head, strain to left neck and shoulder
003-2 002	Rutherford, et	Gum Unwrapping Mach Oper	1/9/2001 monthly.	Gum Recovery 1	Pain, Bilateral thumbs and hands
004-2 001	Pilipauskas, et	Box Ovrwp Mach Oper	01/17/2000 1 monthly.	Inspecting/Packing 1	Strain and possible CTS, Right Shoulder, Arm, and Hand
004-2 001	Pilipauskas, et	Box Ovrwp Mach Oper	01/17/2000 1 monthly.	Inspecting/Packing 1	Strain and possible CTS, Right Shoulder, Arm, and Hand
006-2 001	Coria, Francisco	Laboratory Technician A	1/30/2001 monthly.	Factory QA	Multiple strains, Rt. shoulder, elbow, wrist.
006-2 001	Coria, Francisco	Laboratory Technician A	01/30/2000 4 monthly.	Factory QA	Multiple strains , Rt. shoulder, elbow, wrist. Abrasion to Elbow
007-2 001	Richmond, et	Sheeting Machine Oper	01/30/2000 1 monthly.	Sheeting Sugarkless 1	Fracture, Tuft of left third finger
007-2 001	Richmond, et	Sheeting Machine Oper	01/30/2000 1 monthly.	Sheeting Sugarkless 1	Fracture, Tuft of left third finger

Using these four categories, check ONLY the most serious result for each case:				Enter the number of days the injured or ill worker was:		Check the injury? column or choose one type of illness:														
Death	Days away from work	Remained at work	Job transfer or resignation	On job transfer or resignation (10)	Away from work (14)	1 day	2 days	3 days	4 days	5 days	6 days	7 days	8 days	9 days	10 days	11 days	12 days	13 days	14 days	15 days
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15	days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0	days	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Page Totals ➤

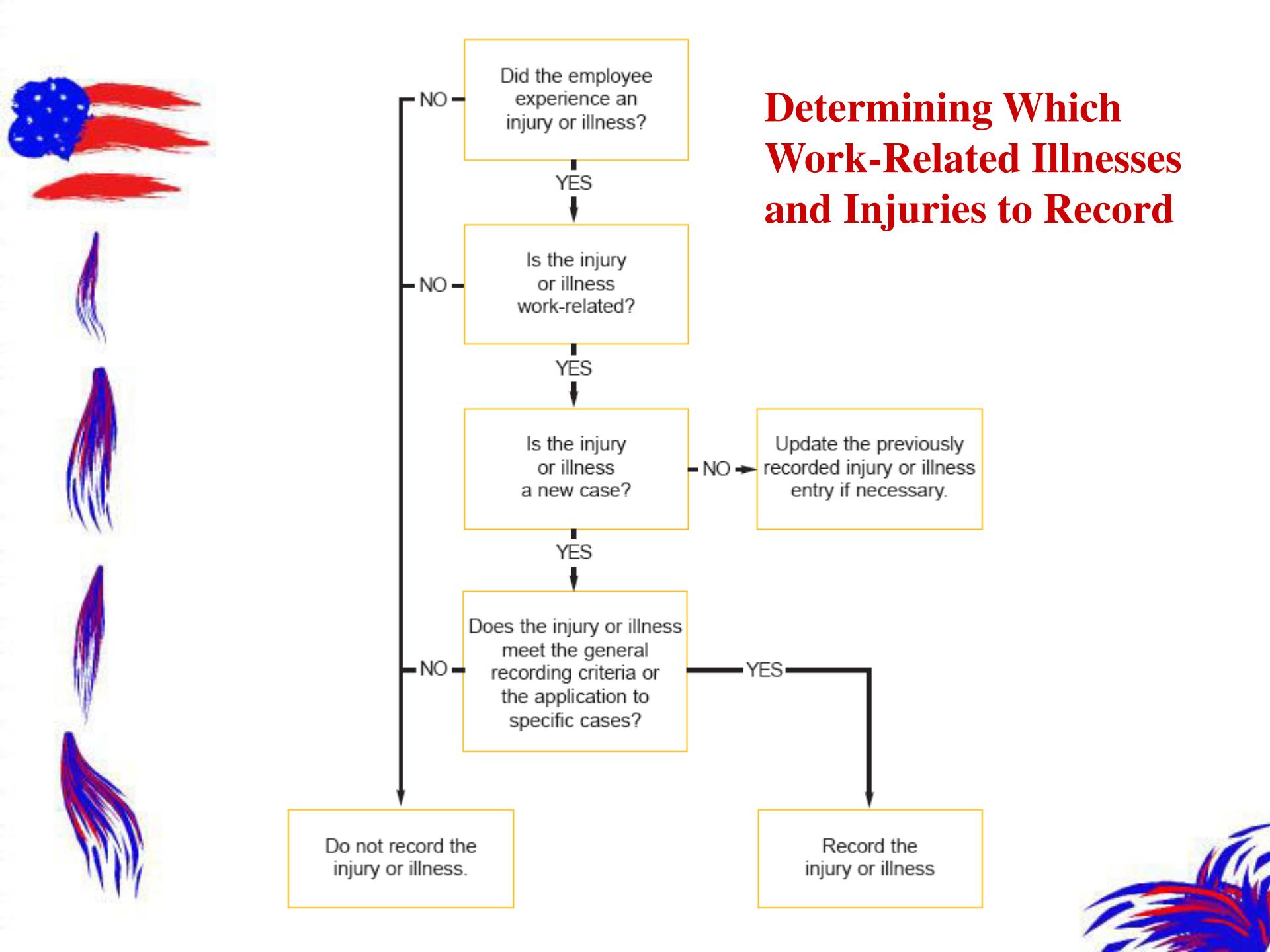
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Be sure to transfer these totals to the Summary page (Form 300A) before you print it.

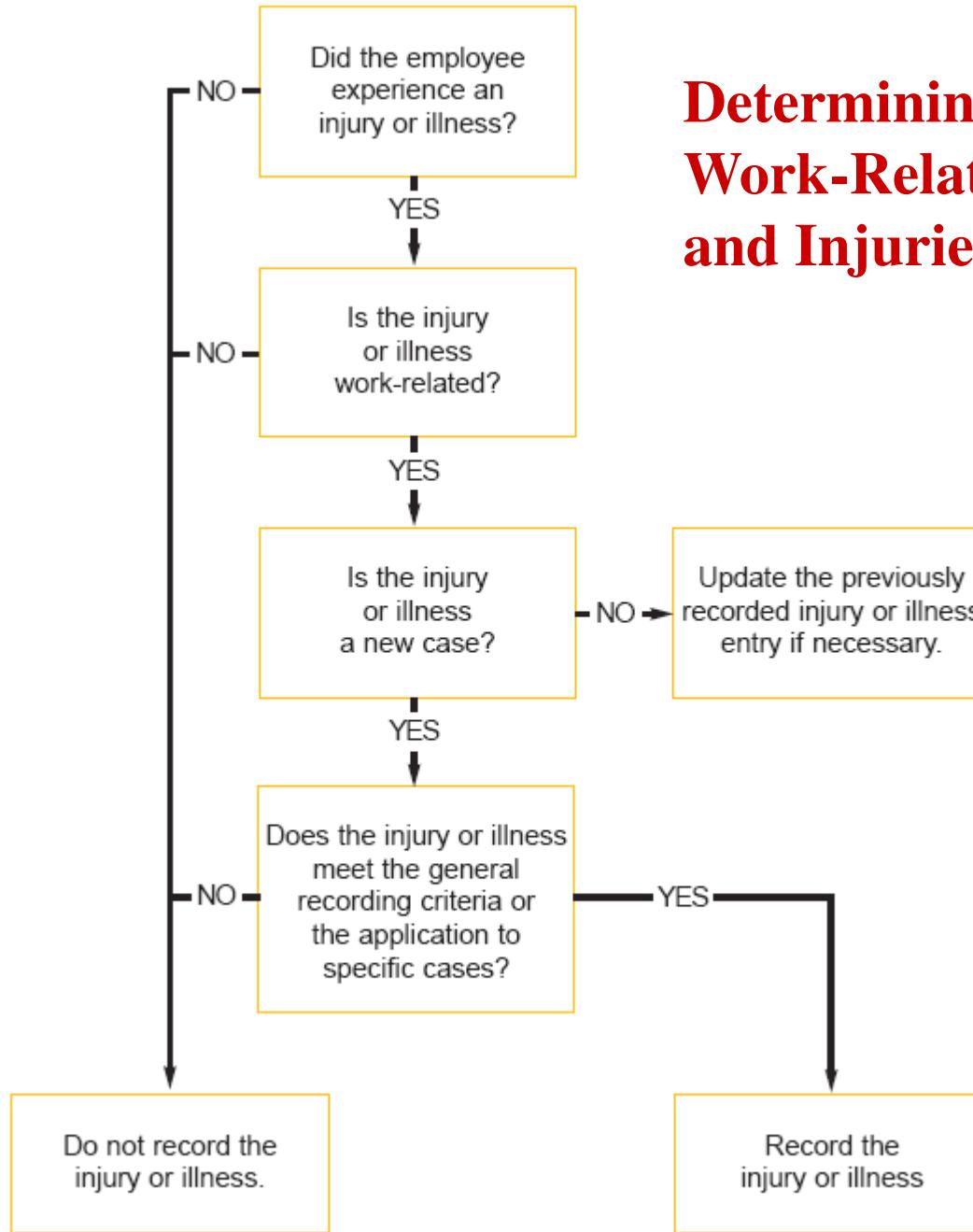
Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instructions, search and gather the data needed, and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any other aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3844, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office.

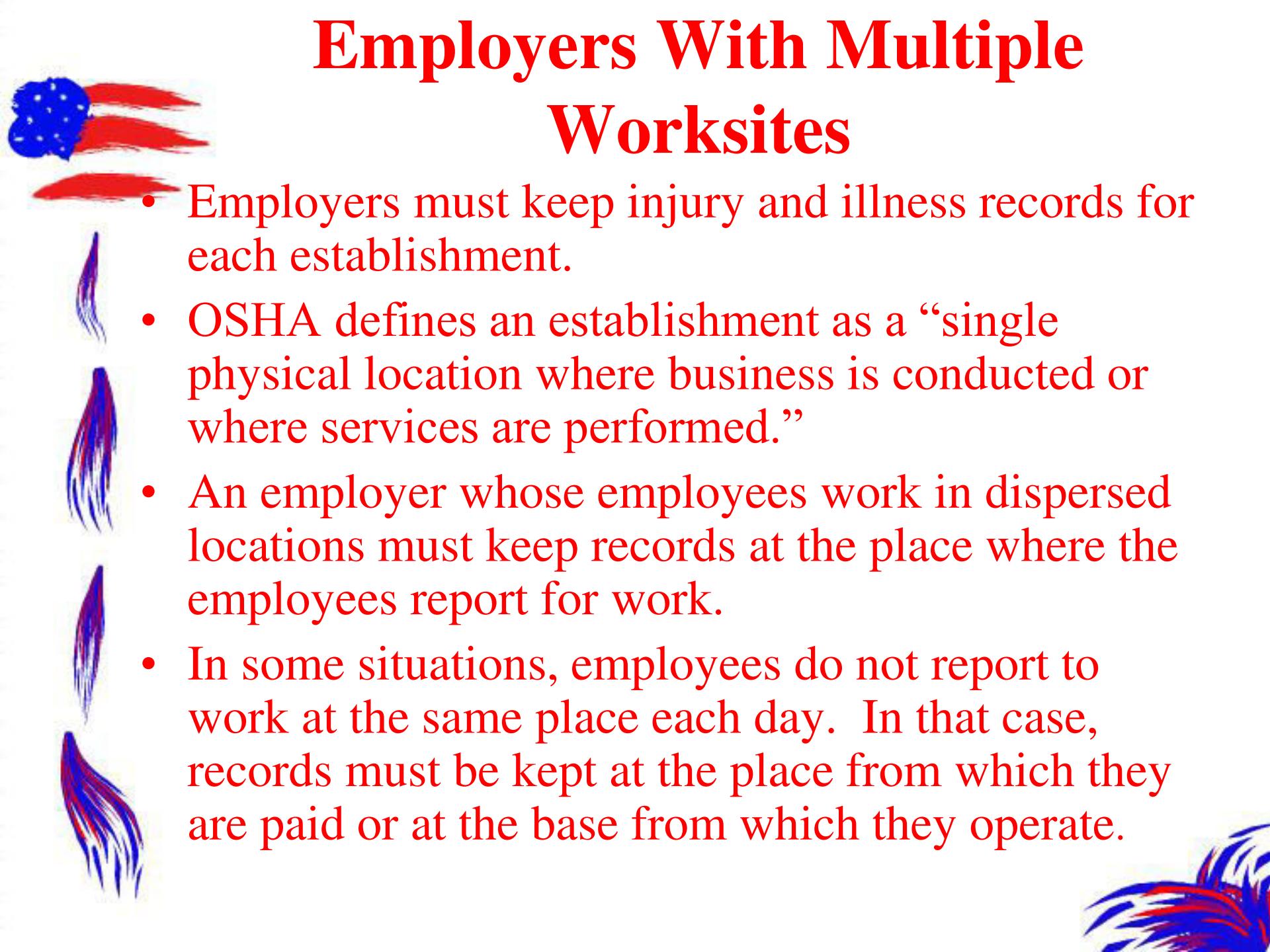
Page 1 of 1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



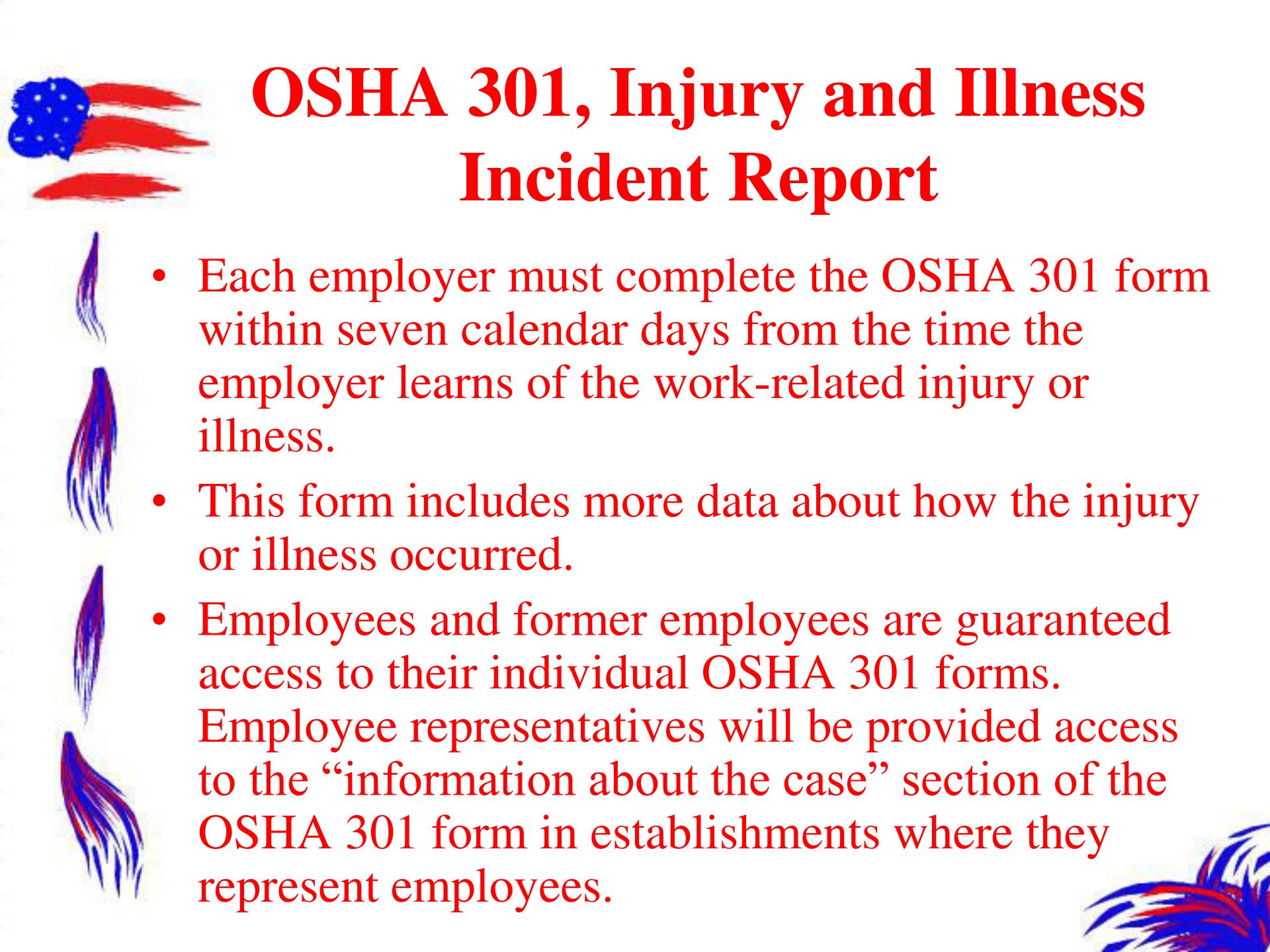
Determining Which Work-Related Illnesses and Injuries to Record





Employers With Multiple Worksites

- Employers must keep injury and illness records for each establishment.
- OSHA defines an establishment as a “single physical location where business is conducted or where services are performed.”
- An employer whose employees work in dispersed locations must keep records at the place where the employees report for work.
- In some situations, employees do not report to work at the same place each day. In that case, records must be kept at the place from which they are paid or at the base from which they operate.



OSHA 301, Injury and Illness Incident Report

- Each employer must complete the OSHA 301 form within seven calendar days from the time the employer learns of the work-related injury or illness.
- This form includes more data about how the injury or illness occurred.
- Employees and former employees are guaranteed access to their individual OSHA 301 forms. Employee representatives will be provided access to the “information about the case” section of the OSHA 301 form in establishments where they represent employees.



OSHA Form 300A Summary of Work-Related Injuries and Illnesses

- This form was created to make it easier to post and calculate incident rates.
 - Employers must post copies of the previous year's records no later than February 1 and keep them in place through April 30.
- 



You Have a Right to a Safe
and Healthful Workplace.

IT'S THE LAW!

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthy conditions in your workplace. You or your representative may participate in the inspection.
- You can file a complaint with OSHA within 30 days of dissatisfaction by your employer for making safety and health complaints or for asserting your rights under the OSH Act.
- You have a right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violation.
- Your employer must correct workplace hazards by the date indicated on the citations and must verify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records or records of your exposure to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.



The Occupational Safety and Health Act, or OSH Act, sets minimum safety and health protection standards for working men and women throughout the Nation. The Occupational Safety and Health Administration, in the U.S. Department of Labor, has the primary responsibility for administering the OSH Act. The rights listed here may depend on the particular circumstances. To file a complaint, report an emergency or talk with OSHA, contact us online or products, visit the website at www.osha.gov or call 1-844-321-OSEA or your nearest OSHA office.

Atlanta (404) 562-2500
Denver (303) 846-1820
San Francisco (415) 553-2210

Boston (617) 212-0050
Honolulu (808) 541-2881
Seattle (206) 501-0284

Chicago (312) 355-2230
Hartford (860) 233-1238
Tucson (520) 726-1221

Edison (212) 262-1231
Philadelphia (215) 963-2300

If you work in a state operating under an OSHA agreement, your supervisor must post this revised notice updated at this page.

1-800-321-OSHA

OSHA
Occupational Safety
and Health Administration

www.osha.gov | 1-844-321-OSEA

100-00000

OSHA Outreach



American
Safety Council

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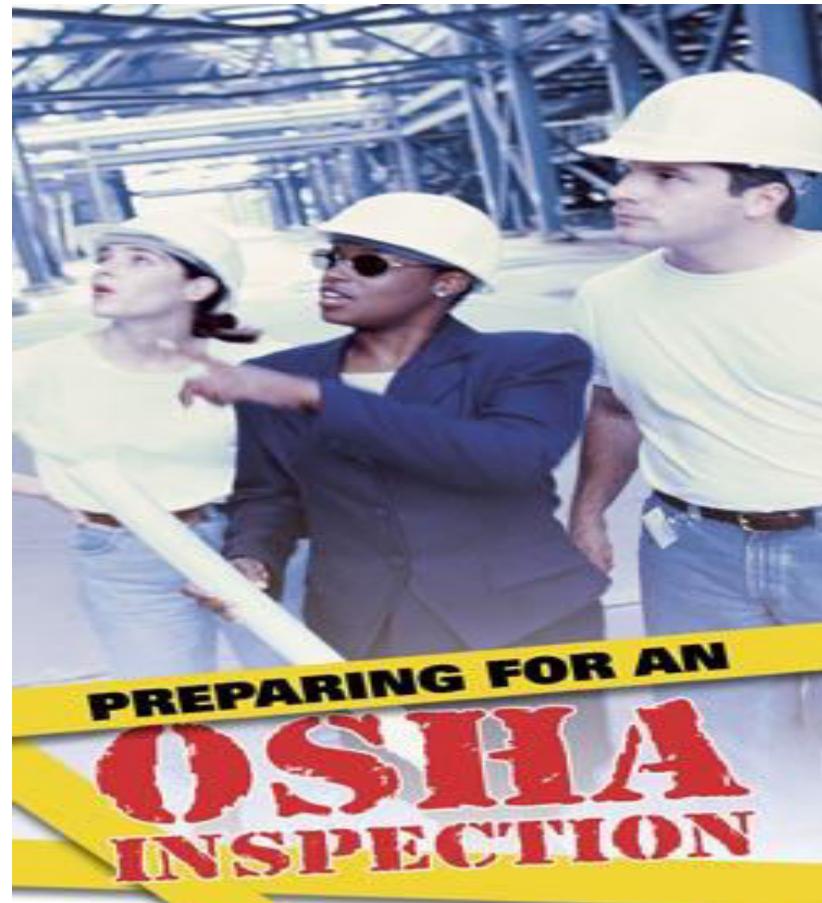
Events Calendar

Doing Business WITH DOL

OSHA Listen Replay - Morning Session



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WE HAVE TO FULFILL



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Minnesota Chapter

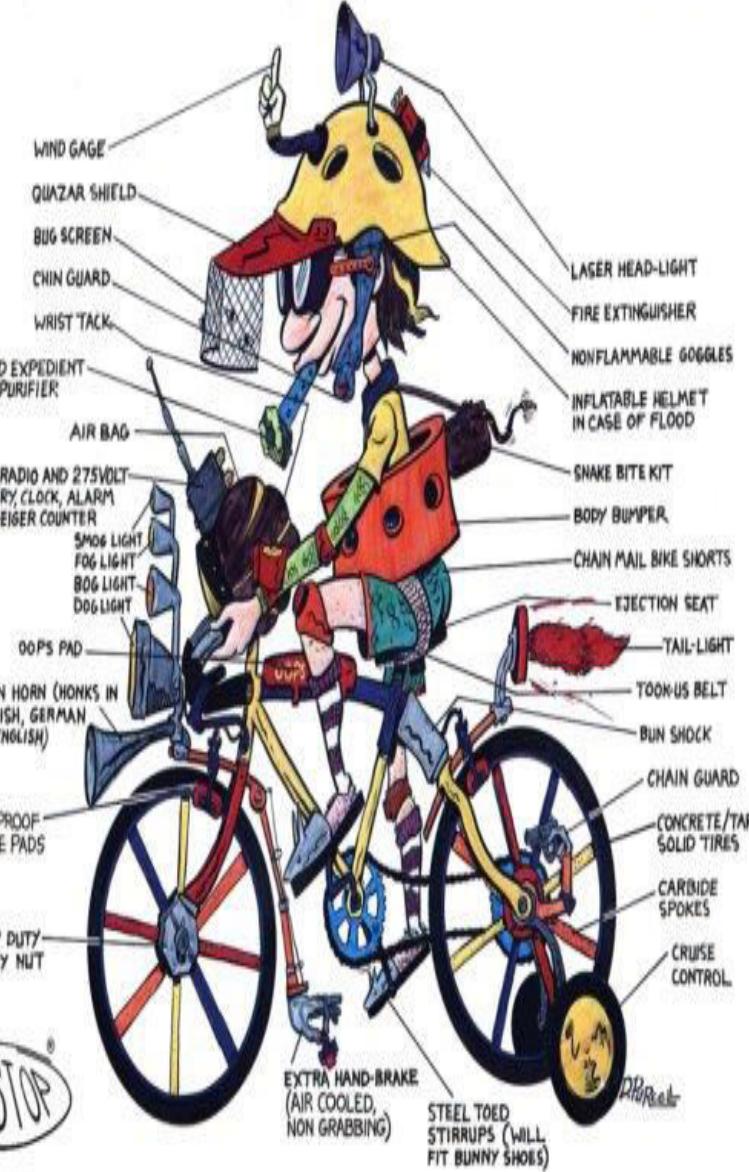


alliance

An OSHA Cooperative Program



PROPOSED CPSC SAFETY STANDARDS (Revised)



OSHA Approved Santa Claus



ALL WEATHER BRAKE SHOES BEAT THE STANDARDS

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Personal Protective Equipment



Personal Protective Equipment

- Employers required to provide hazard-free environment
- Protected against potential hazards
- Purpose of Personal Protective Equipment or PPE

WHAT is PPE?

- Clothing and accessories
- Create a barrier
- Head protection
- Eye and Face protective
- Hearing protection
- Hand protection
- Foot protection
- Respiratory protection



Personal Protective Equipment

- PPE is selected based on the specific job hazards you face.
- Who pays for PPE
- If employees provide PPE

Engineering Controls

- PPE is always considered a last resort
- Temporary type of protection
- First choice will always be to eliminating hazard
 - Examples:
 - Initial design specification
 - Substitute less harmful material
 - Change process
 - Enclose process
 - Isolate process

Work Practice Controls

- Employees can change the process
 - Examples:
 - Job rotation
 - Wet method
 - Personal Hygiene
 - House Keeping
 - Increase Maintenance

Job Hazards

- Examples of Job Hazards are:
 - Noise
 - Chemicals
 - Accidental Impact
 - Sharp objects
 - Flying Particles
 - Dust & Mists
 - Bright Light
 - Vibration

**what you
should know**

About PPE

- You should know
 - Limitations of PPE
 - How to use PPE
 - When to use PPE
 - Inspect before use
 - Replacement
 - Cleaning & Storage

PPE Limitations

- PPE acts as a barrier between you and a hazard
- PPE will not protect you if it is:
 - not designed for the specific hazard
 - damaged or worn
 - not adjusted properly

Using PPE

- For PPE to be effective in protecting you
 - Use it in the manner you have been trained
 - Use it only for the specific hazards for its design

Inspect before using

- Before you use your PPE, inspect it for:
 - Worn or damaged parts
 - Leaks, cracks or deformities
 - Cleanliness
 - Correct size



Replace

- If any PPE is damaged or worn
 - Get it repaired or replaced immediately
 - Do not work without replacement PPE
 - Tell your supervisor you need new PPE

Cleaning & Storage

- Clean your PPE regularly
- Do not store it where it will be in contact with:
 - Dust & Dirt
 - Chemicals
 - Sunlight
 - Water



Written PPE Program

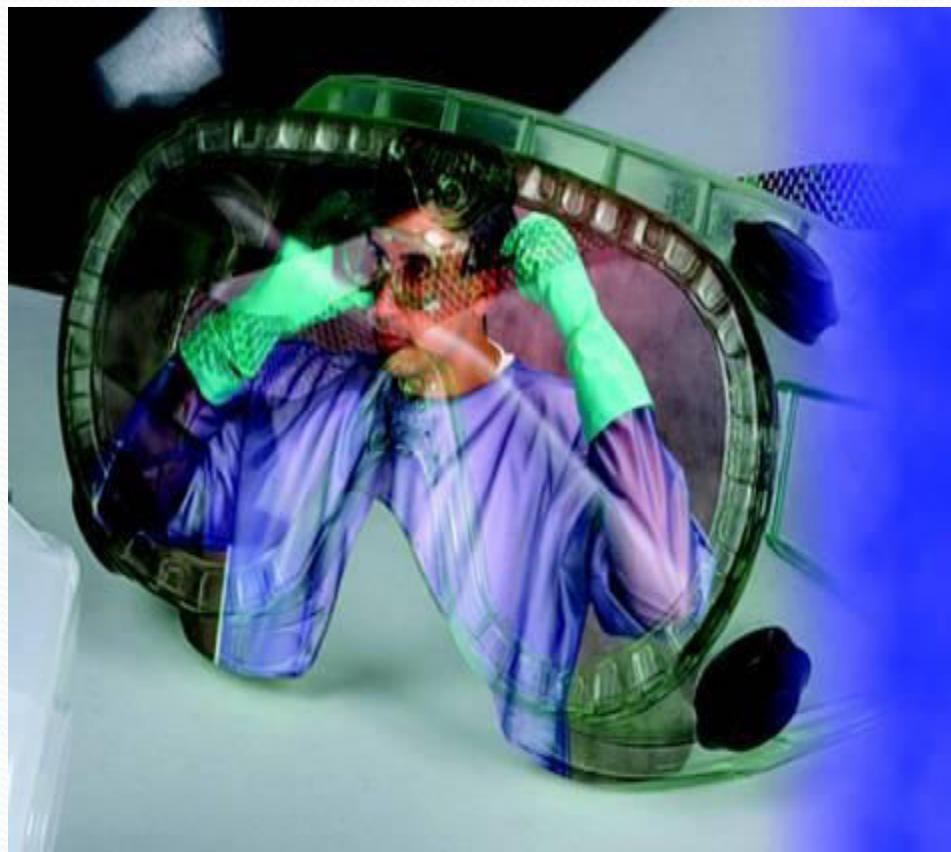
- A written PPE Program should be establish for the job
- Two basic objectives of a PPE Program
 - Protect the wearer
 - Prevent injury



Comprehensive PPE Program

- Hazard identification
- Medical monitoring
- Environmental surveillance
- Selection
- Use
- Maintenance
- Decontamination
- Training

EYE & Face protection



Protecting your eyes

- Your eyes are very sensitive organs and may be easily injured.

Eye Hazards include:

- Chemical Splashes
- Flying dust, chips, sparks
- High Heat
- Intense or UV light



Specific hazards include...

IMPACT - Chipping, grinding
machining, masonry work,
woodworking, sawing, drilling,
chiseling, powered fastening,
riveting, and sanding.

HEAT - Furnace operations,
pouring, casting, hot dipping,
welding

LIGHT or RADIATION - Electric
arc welding, gas welding, gas
cutting

IRRITANTS / CORROSIVES -
mists, dusts, sprays, splashes



Face Protection

- Use a faceshield when any of the following hazards exist:
 - Chemical splashes
 - Liquid spray
 - Flying chips or sparks
 - High Heat
 - Special faceshield



When using a faceshield...

- Always use the correct type eye protection with a faceshield....
- A faceshield is NOT designed to protect your eyes



Types of Eye Protection

- Safety Glasses – for flying chips & low hazards
- Vented Goggles – for dust and non-hazardous mist
- Non-Vented Goggles – hazardous chemicals
- Dark Lenses – intense or UV light



Corrective glasses and eye protection

- Spectacles with protective lenses
- Goggles worn over corrective spectacles
- Goggles that incorporate corrective lenses



Inspection/maintenance of eye protection

- Keep lenses clean
- Daily inspection and cleaning
- Replace pitted lenses, like dirty lenses, can be a source of reduced vision
- Headbands
- Storage



Head Protection



Hardhats...

Hard hats are needed to protect against

- Falling objects
- Accidental impact

Use an electrically rated hard hat when there is a potential for contact with live circuits



Head Protection

- Resist penetration
- Absorb the shock of a blow
- ANSI Standards
 - Z89.1-1986
 - Z89.1-1997



Protective Hat Types

- Type 1
- Type 2
- Three Classes
 - Class G
 - Class E
 - Class C



Helmet construction

- Water Resistant
- Slow Burning
- Shell and suspension
- Adjustable headbands



Replace your hard hat if...

- The suspension system shows signs of deterioration such as:
 - Cracking,
 - Tearing, or
 - Fraying
- The suspension system no longer holds the shell from 1 inch to 1 1/4 inches away from the head.

Replace your hard hat if...

- The brim or shell is cracked, perforated, or deformed.
- The brim or shell shows signs of exposure to heat, chemicals, ultraviolet light, or other radiation. Signs include:
 - - Loss of surface gloss,
 - - Chalking, or
 - - Flaking



Helmet maintenance and inspection

- Cleaning helmets
- Inspect daily
- Exposure to unusual conditions
- Storage



Foot Protection



Foot Hazards

- ◆ Heavy objects such as barrels or tools that might roll onto or fall onto your feet.
- ◆ Sharp objects such as nails or spikes that might pierce the soles or uppers of ordinary shoes.
- ◆ Molten metal that might splash
- ◆ Hot, slippery or wet surfaces
- ◆ Corrosive Chemicals



Hazardous conditions...

IMPACT - Carrying or handling materials such as packages, objects, parts or heavy tools which could be dropped

COMPRESSION - Work activities involving skid trucks (manual material handling carts, around bulk rolls, around heavy pipes)

PUNCTURE - Sharp object hazards such as nails, wire, tacks, screws, large staples, scrap metal, etc

CHEMICAL - Check MSDS for protection

Types of foot protection

- Types of foot protection
- Safety shoes
- Boots
- Leggings





Inspect footwear daily...

- Look for
 - Cracked, torn or worn uppers
 - Wear, holes, tears, cracks, loss of tread on bottom
 - Separation between soles and uppers



Requirements for Safety Shoes

- Sturdy
- Impact resistant toe
- ANSI Z41.1 1967



Hand Protection



Why use hand protection?

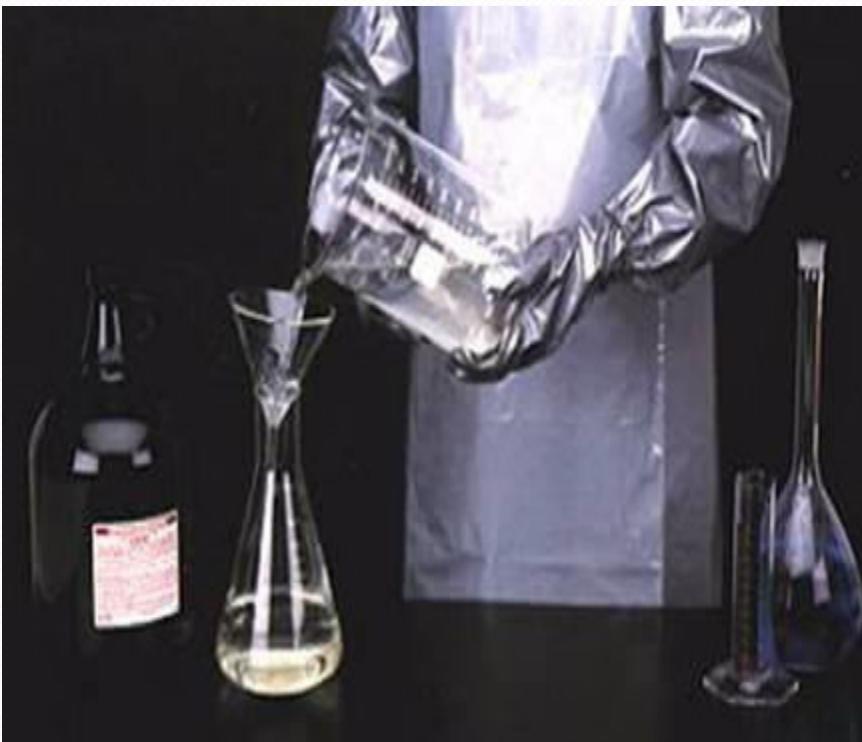
- Burns
- Cuts
- Electrical shock
- Amputation
- Absorption of chemicals



Types of hand protection



Glove selection



- Not all gloves are created equal.... Ensure the glove you use will protect your hands from the specific hazards of the job.
- Chemical gloves do not last forever... understand the chemical and “break-through” characteristics of your specific glove

Before you use...

- ◆ Use the proper glove for the task
- ◆ Remove rings & bracelets
- ◆ Do not wear gloves if they can be caught in machinery
- ◆ Check gloves for wear and damage



Electrical glove checks

- ◆ Hole, tear, puncture, or cut
- ◆ Ozone cutting or ozone checking An embedded foreign object
- ◆ Swelling, softening, hardening, or becoming sticky or inelastic.
- ◆ Any other defect that damages the insulating properties
- ◆ AIR TEST before each use



Hearing protection



Protect your hearing...

- Use hearing protection when:
 - in high noise areas
 - using power saws, impact tools, etc.
 - off the job when shooting, using power tools, etc.
- Replace worn or broken hearing protectors immediately



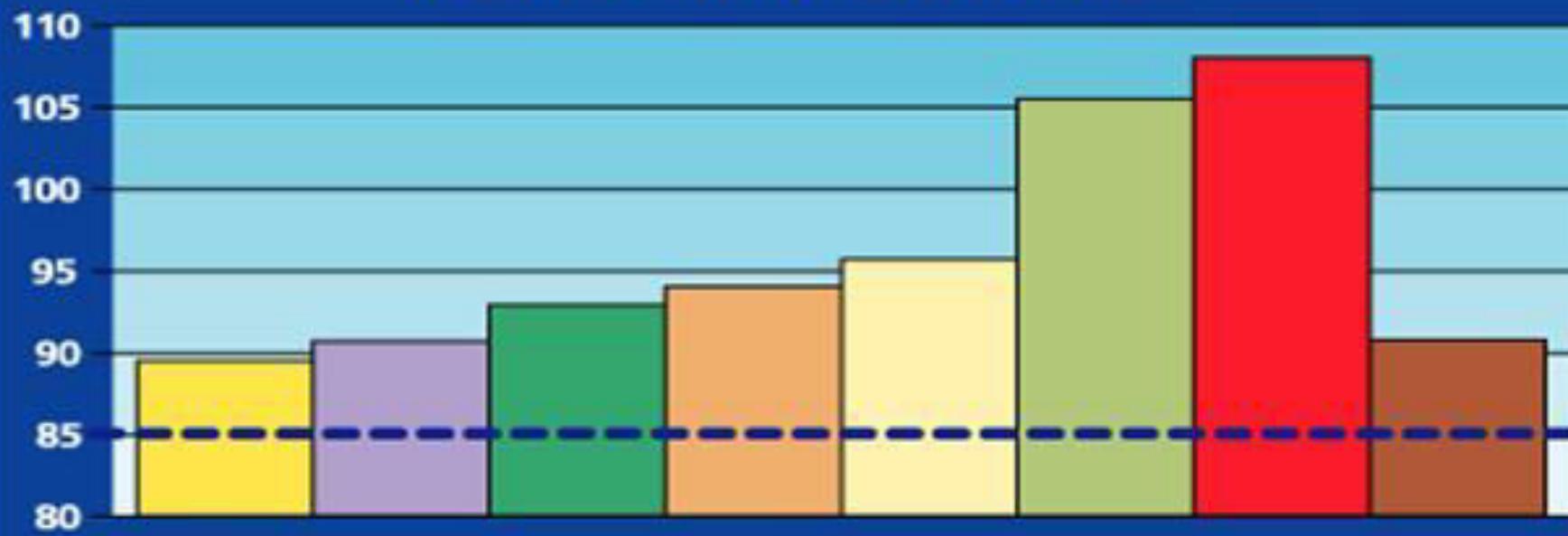
Types of Hearing Protectors



DECIBEL - dB(A)	EQUIPMENT
Double protection recommended above 105 dB(A)	Pile driver Air arcing gouging Impact wrench Bulldozer - no muffle Air grinder Crane - uninsulated cab Bulldozer - no cab Chipping concrete Circular saw and hammering Jack hammer Quick-cut saw Masonry saw Compactor - no cab Crane - insulated cab Loader/backhoe - insulated cab Grinder Welding machine Bulldozer - insulated cab Speaking voice
112	
110	
108	
107	
102-104	
102	
101-103	
97	
96	
96	
96	
95	
94	
90	
87	
86	
85-90	
85	
60-70	

Table 1: Some typical noise levels found on construction sites

Graph 1: Average dB(A) For Some Construction Trades / Activities



Carpenter

Masonry

Framer

Forming

Sheet Metal

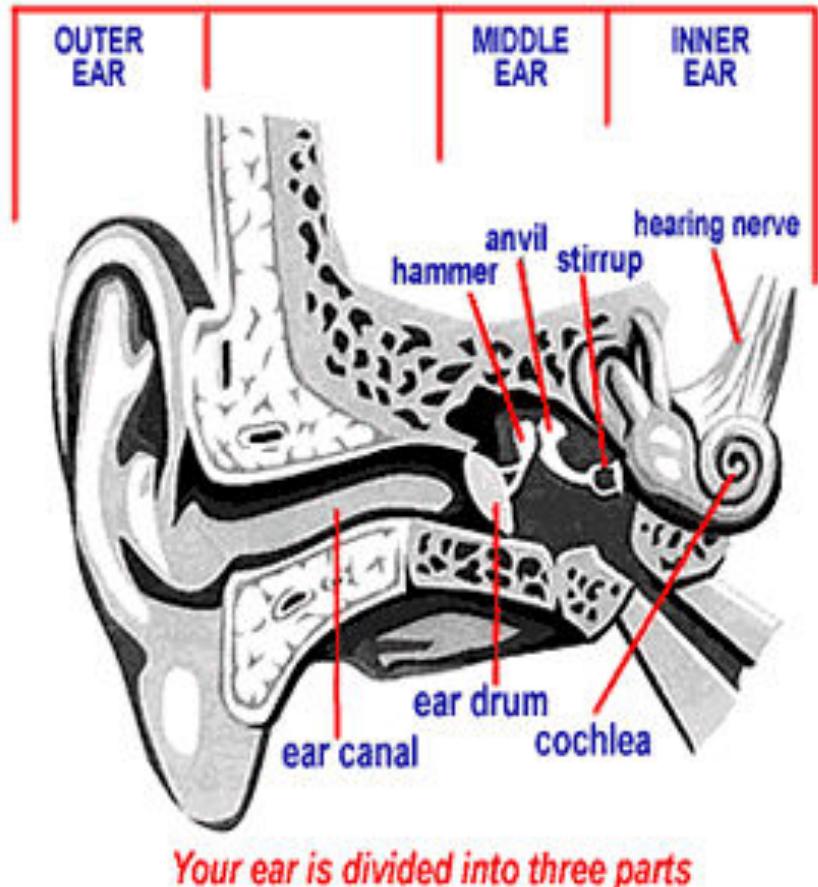
Ironworker

Boilermaker

Heavy Equipment Operator

Symptoms of hearing loss

- Ringing in ears
- Difficulty hearing normal conversations
- Noises are "fuzzy" or muffled



Hearing protection must

- Be kept clean
- Fit snugly against the head or in the ear
- Have no gaps or breaks



Fall Protection Equipment

- Life lines
- Safety
- Lanyards







What else?

Other Hazards

- Life jackets and drowning
- Moving vehicles
- Retroreflective garments



Items highlighted in yellow are class "A" stocked items

NORTH

TRAFFIC COVERALLS

2" SILVER NORTH-LITE™ REFLECTIVE MATERIAL ON BRIGHT ORANGE POLY-COTTON FABRIC

Part #	Description	Size	Stock Lot
TV115/P002	Zipper closure, 2 vertical stripes on front; "4" on back and 360° horizontal stripe around torso & legs.	3L to 5L	\$187.95 ea

*Overall 52 1/4" x 107 1/2" H (± 10%), 34 1/2" x 107 1/2"

2" YELLOW NORTH-LITE™ REFLECTIVE MATERIAL ON BRIGHT ORANGE POLY-COTTON FABRIC

Part #	Description	Size	Stock Lot
TV075/P002	Zipper closure, 2 vertical stripes on front; "4" on back and 360° horizontal stripe around torso & legs.	3L to 5L	\$187.95 ea

*Overall 52 1/4" x 107 1/2" H (± 10%), 34 1/2" x 107 1/2"

2" YELLOW NORTH-LITE™ REFLECTIVE MATERIAL ON FIRE RETARDANT BRIGHT ORANGE WESTEX PROBAN FABRIC

Part #	Description	Size	Stock Lot
TV075/C002	Zipper closure, 2 vertical stripes on front; "4" on back and 360° horizontal stripe around torso & legs. Meets CSA Class 2, Level FR, Table 2B.	3L to 5L	\$188.95 ea

*Overall 52 1/4" x 107 1/2" H (± 10%), 34 1/2" x 107 1/2"

TRAFFIC PARKA AND BOMBER JACKET

2" SILVER NORTH-LITE™ REFLECTIVE MATERIAL ON BRIGHT ORANGE POLY-COTTON FABRIC

Part #	Description	Size	Stock Lot
TV018572	Zipper closure, 2 vertical stripes on front, 360° horizontal stripe around torso & "2" on back. Meets CSA Class 2, Level FR, Table 2B.	3L to 2XL	\$188.95 ea

*H, ± 10%

2" YELLOW NORTH-LITE™ REFLECTIVE MATERIAL ON FIRE RETARDANT BRIGHT ORANGE WESTEX PROBAN FABRIC

Part #	Description	Size	Stock Lot
TV080810	Zipper closure, 2 vertical stripes on front, 360° horizontal stripe around torso & "2" on back. Meets CSA Class 2, Level FR, Table 2B.	3L to 2XL	\$188.95 ea

*H, ± 10%

TRAFFIC BIB PANTS

2" SILVER NORTH-LITE™ REFLECTIVE MATERIAL ON BRIGHT ORANGE POLY-COTTON FABRIC

Part #	Description	Size	Stock Lot
TV132/P002	Zipper closure, 2 vertical stripes on front; "4" on back, 360° horizontal stripe around torso & legs. Meets CSA Class 2, Level FR, Table 2B.	3L to 2XL	\$79.95 ea

*H, ± 10%

2" YELLOW NORTH-LITE™ REFLECTIVE MATERIAL ON FIRE RETARDANT BRIGHT ORANGE WESTEX PROBAN FABRIC

Part #	Description	Size	Stock Lot
TV075/P002	Zipper closure, 2 vertical stripes on front; "4" on back, 360° horizontal stripe around torso & legs. Meets CSA Class 2, Level FR, Table 2B.	3L to 2XL	\$188.95 ea

*H, ± 10%

**PPE...
It's Your Protection**

Protect yourself...

- Use the right PPE for the Hazard
- Inspect your PPE before using
- Replace damaged or worn PPE
- Store your PPE properly so it will be ready for the next use
- Keep your PPE clean
- Notify your supervisor if you need new PPE

WHAT DO YOU SEE ?—POTENTIAL HAZARDS AND POSSIBLE ASSOCIATED OSHA STANDARDS

Which Standards might apply to these hazards



Some suggestions:

- FP Subpart M – employees on the wall
- FP Subpart L – employees on the scaffold
- Access – Subpart L, or, if they were using an extension ladder, Subpart X
- Subpart E PPE
- Subpart D
- Health/Hazcom

Which Standards might apply to these hazards



Some suggestions:
Sub M – working on the structure
Sub L – working on the scaffold
Sub X – ladder construction and installation
Sub Q – impalement hazards, adequate strength of formwork systems
Sub E - PPE

Which Standards might apply to these hazards



Some suggestions:

- Sub M – Fall protection, harness use
- Sub L – scaffold guardrails, boomlift safety
- Sub T – demolition operations
- Sub H – Material handling

Which Standards might apply to these hazards?



Some suggestions:
Sub L – scaffold construction,
guardrails
Sub X – ladder installation and
use

Which Standards might apply to these hazards?



Some suggestions:

Sub L – scaffold platform construction, access, fall protection

Sub E - PPE – hardhats backwards, lack of safety glasses

Sub D – potable water supply

Sub M – trip and fall hazards, ramps into excavation

Sub P – excavation safety, sloping

Which Standards might apply to these hazards?



Some suggestions:

- Sub L – scaffold platform construction, capacity
- Sub X – ladder construction and installation
- Sub Q – impalement hazard
- Sub M – fall protection from floor into hole, or over side of floor

Which Standards might apply to these hazards?



Sub L – mobile scaffold use

Sub M – fall protection (note cables in foreground, it is 80' to the ground over the cables), anchorage point capacity

Rolling mobile scaffolds can be inherently dangerous, and have very specific requirements for safe use, especially when employees remain on the scaffold. Be sure to consult the applicable requirements in Subpart L.

Which Standards might apply to these hazards?



Some suggestions:

- Sub L – Ladder jack usage, fall protection from the system
- Maximum height of ladder jack scaffolds is 20'
- Sub M – Fall protection from the roof (steep roof)
- Sub E – PPE (or lack thereof)
- Sub X – Ladder usage, installation

Which Standards might apply to these hazards ?



Some suggestions:

- Sub L – Aerial work platform usage, fall protection requirements
- Sub M – Fall protection at roof edge
- Sub E – PPE
- Sub C – Training, qualified, competency, effective safety program – this is the foreman on the jobsite, not leading by example
- Harnesses are required at all times when using boom lifts













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A Health and Safety Training For Construction Workers



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FROM HAZARDS IN
CONSTRUCTION

HIERARCHY
OF CONTROLS

TYPES OF COMMON
HAZARDS

PERSONAL
PROTECTIVE
EQUIPMENT

VIDEO ABOUT
HEAT SAFETY







HIERARCHY OF CONTROLS

1. ELIMINATION

2. SUBSTITUTION

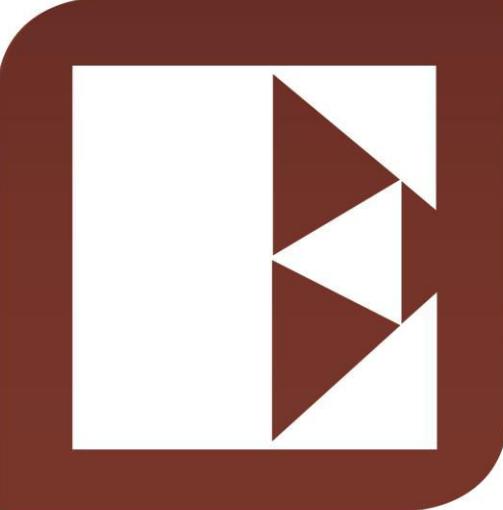
3. ENGINEERING

4. ADMINISTRATION

5. PPE

HEAT

Be safe when working in hot weather



ELECTRICITY

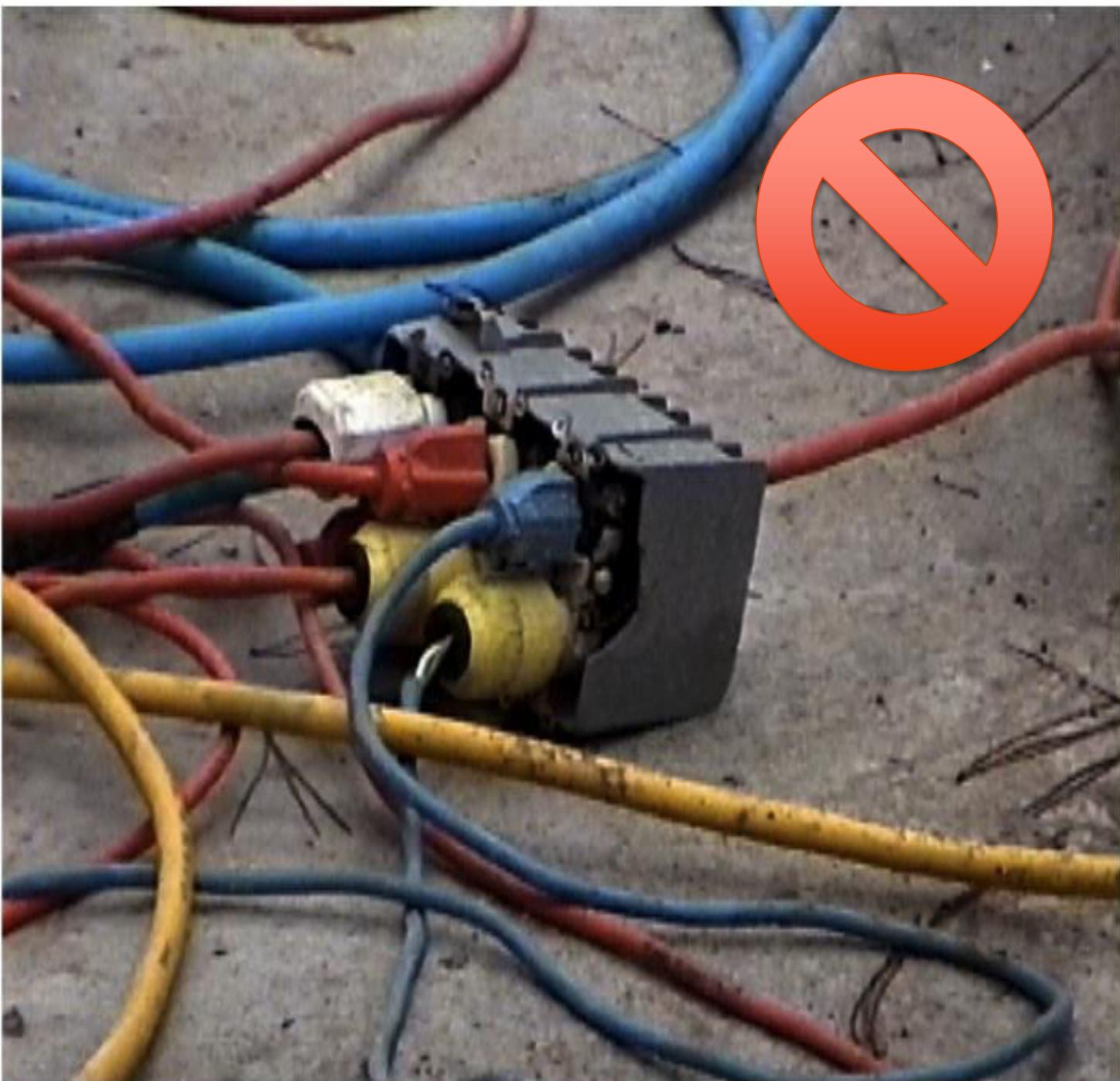
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SAFETY WITH
ELECTRICAL CORDS

BE SAFER WITH
ELECTRIC TOOLS

OVERHEAD POWER
LINE SAFETY TIPS

VIDEO: ELECTRICAL
SAFETY







ELECTRICITY

Protect yourself from electrical dangers



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VIDEO: RIGHTS
UNDER OSHA

WHAT IS
OSHA?

RIGHTS OF
WORKERS

RESPONSABILITIES
OF EMPLOYERS

ABOUT OSHA

Your rights & responsibilities under OSHA



FALLS

PROTECT YOURSELF
FROM FALLS IN
CONSTRUCTION

VIDEO ON
FALL SAFETY

SAFETY WITH
LADDERS

SAFETY WITH
SCAFFOLDS

FALL
PROTECTION

FALL HAZARDS

Protect yourself from fall dangers in
construction





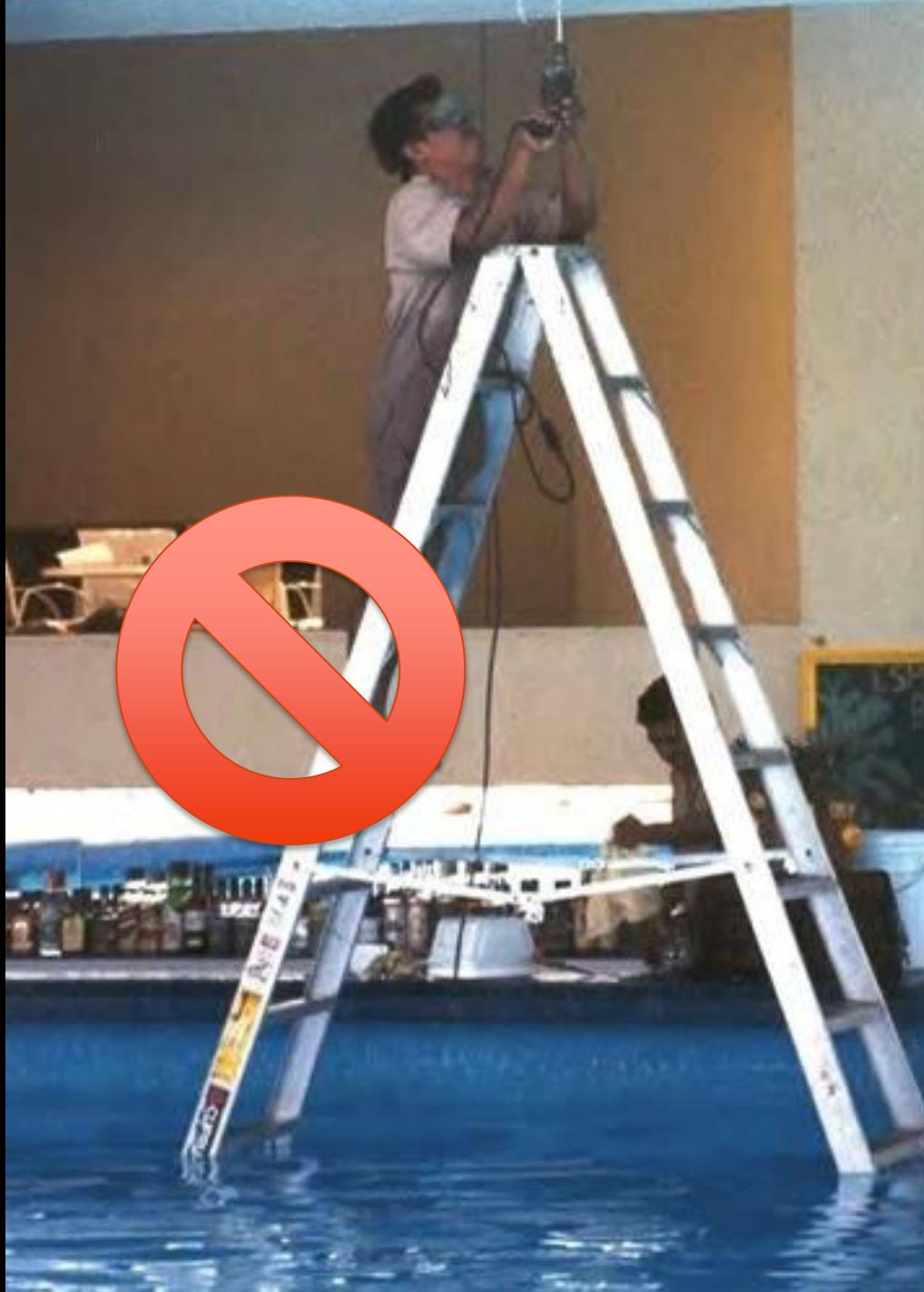


CEPA

A summary of common hazards and how
to protect yourself and others









"CEPA, un programa por Proyecto Defensa Laboral, enseña a los trabajadores cómo ser más seguro en el trabajo y cómo mejorar las condiciones de construcción."

—LOS TRABAJADORES DE PROYECTO DEFENSA LABORAL



CEPA

A Health and Safety Training For Construction Workers

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NATIONAL ASSOCIATION OF HOME BUILDERS



Fall Protection Training