



"Safety is never an accident;

**it is always the result of high intention, sincere effort, intelligent direction,
and skillful execution;**

it represents the wise choice of many alternatives."

- By William A. Foster



<https://www.youtube.com/watch?v=Onf0-2czhlk>



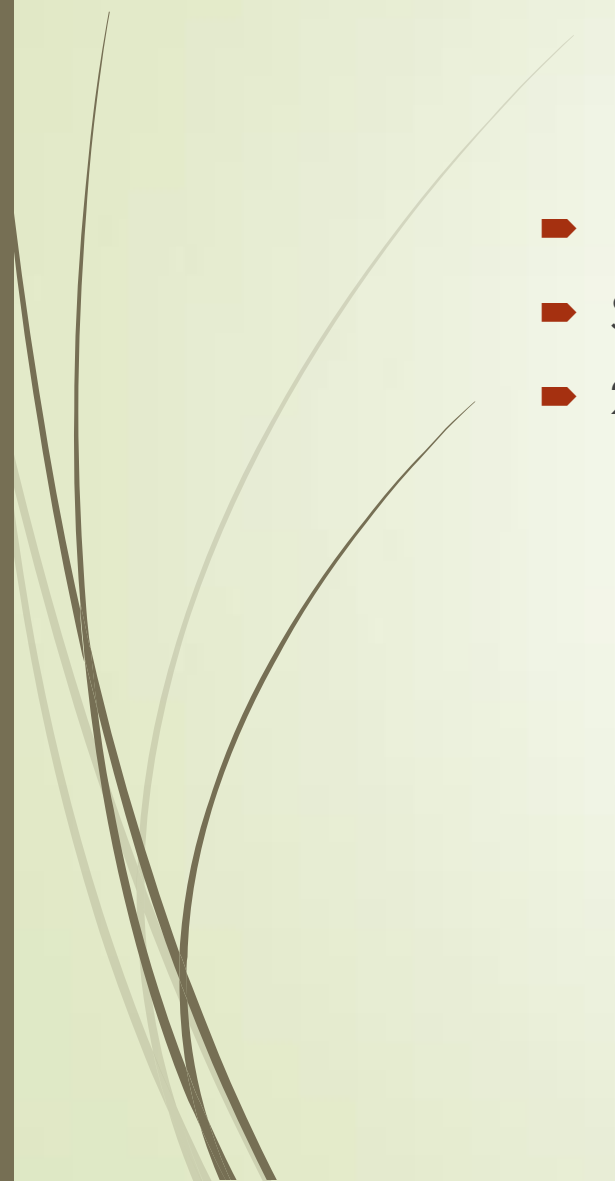
Agenda



- Quick Review of the origins of Safety
- Specific Topics of Interest:
 - Stand Down for Safety May 6-10
 - Current Hazards and Solutions in Custodial/Facilities Work
 - Resources

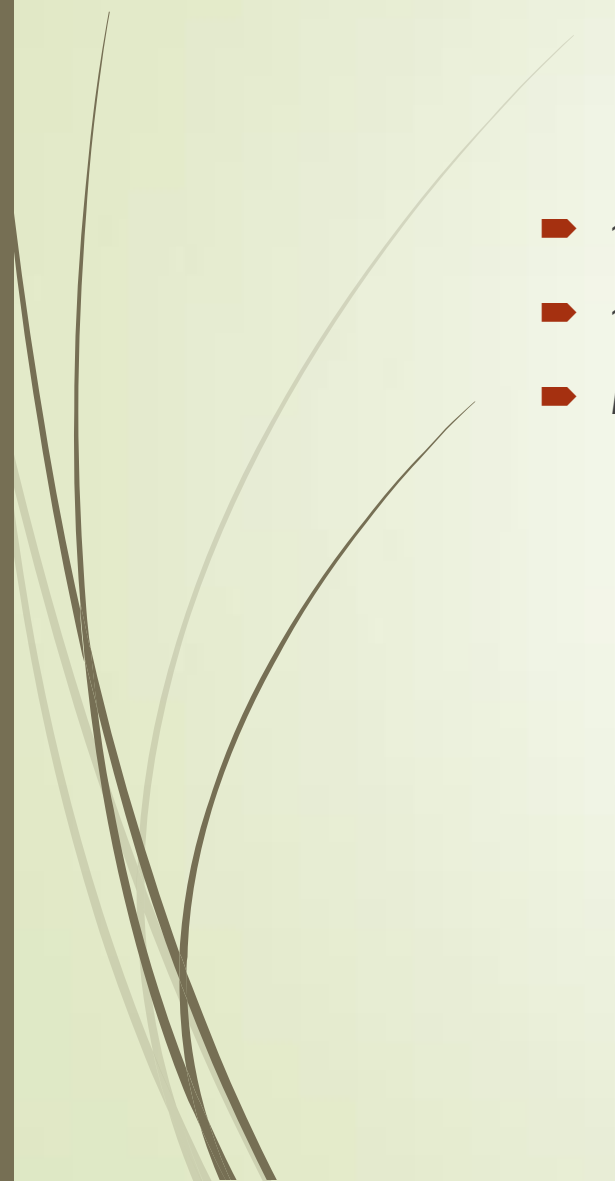


L&I Data

- 178,000 Employers Insured
 - \$2.25 Billion Premiums Assessed
 - 2.9 Million Employees Covered
- 




L&I DOSH

- ▶ ~5000 Inspections/year
 - ▶ ~2500 Consultations/year
 - ▶ Most Frequently Cited Hazards
- 



Historical View of Safety and Occupational Health

- Injuries Common
 - Illnesses Poorly Understood
 - Industrialization
- 

Washington



Washington State Constitution

Sec. 35. The Legislature shall pass necessary laws for the protection of persons working in mines, factories and other employments dangerous to life or deleterious to health; and fix pains and penalties for the enforcement of same.

WASHINGTON
1876

Original handwritten version

Risk

➤ Acceptable Risk

Two Horrific Workplace Tragedies Eventually Led To Worker Protection:

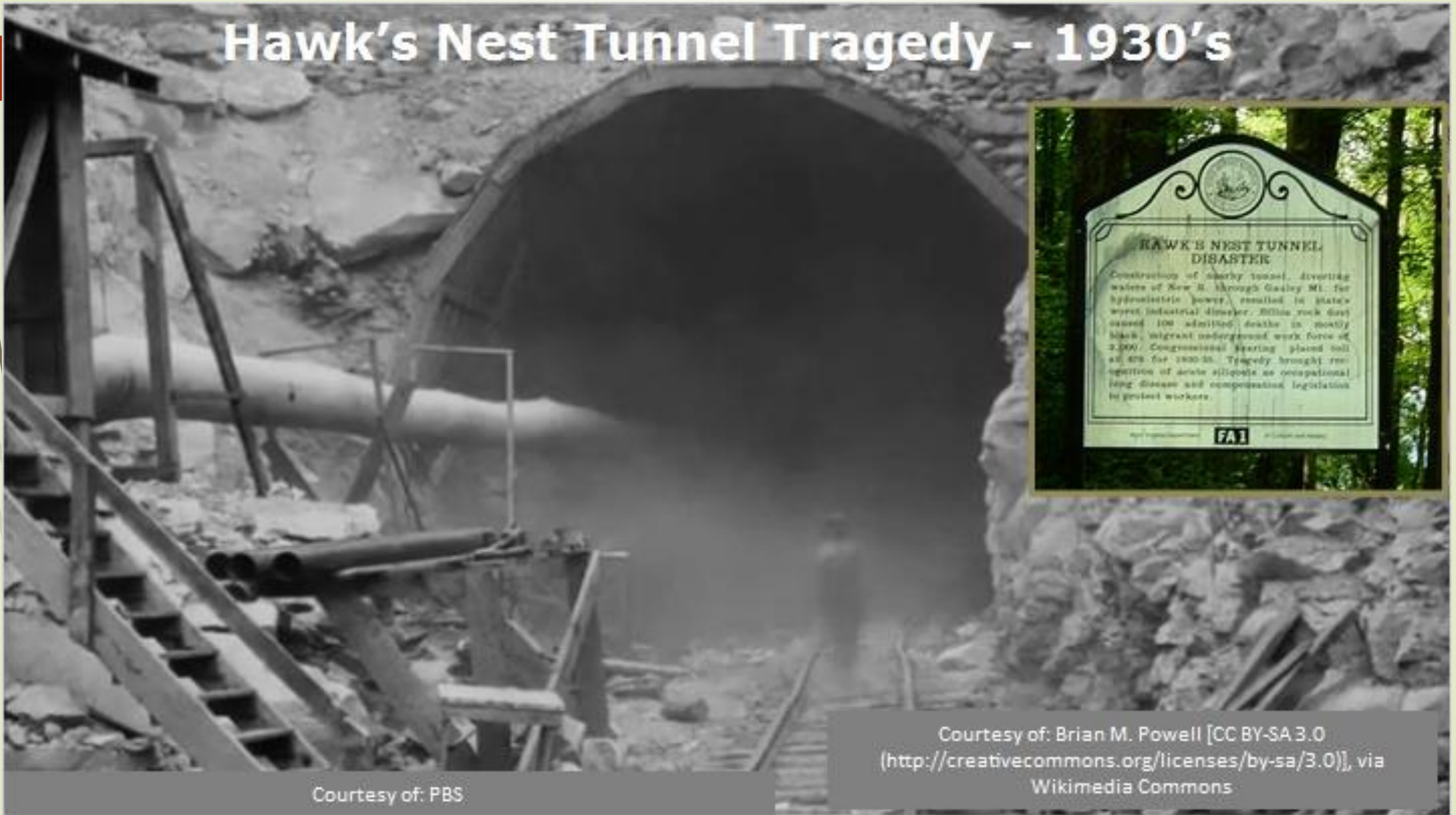


Triangle Shirt Factory fire / 1911
Courtesy of: Unknown Cornell University



Hawk's Nest Dam / 1930's
Courtesy of: PBS Learning Media

Hawk's Nest Tunnel Tragedy - 1930's



Courtesy of: PBS

Courtesy of: Brian M. Powell [CC BY-SA 3.0
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Wikimedia Commons

Fast Forward



Table 2: US Army, Navy, and Marine World War 2 Battle and Non-Battle Killed Statistics.

Year	Army	Marines	Navy	Military KIA	Factory Deaths
1941	493	165	2,217	2,875	18,000
1942	17,612	1,607	3,278	22,497	18,500
1943	22,592	1,839	5,251	29,682	17,500
1944	126,170	5,746	9,348	141,264	16,000
1945+	68,007	10,376	16,856	95,239	16,000
Totals	234,874	19,733	36,950	291,557	85,500



Safety First

➡ https://youtu.be/u2TkmxnC_J0



Postwar Trends, 1945-1970

- The economic boon and associated labor turnover during World War II worsened work safety in nearly all areas of the economy, accidents again declined as long-term forces reasserted themselves (Table 4).

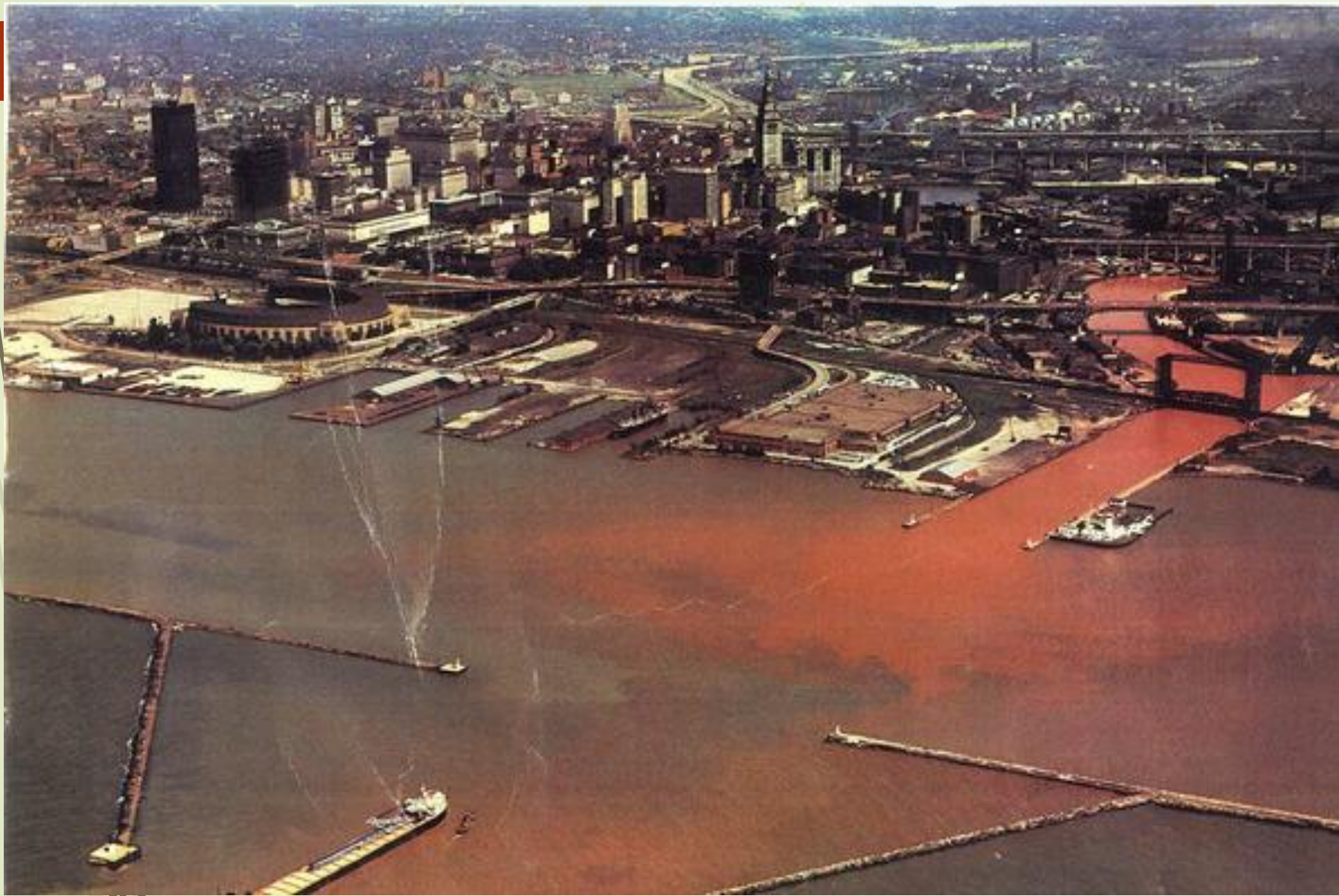
Year	Manufacturing	Coal Mining
1926	24.2	–
1931	18.9	89.9
1939	14.9	69.5
1945	18.6	60.7
1950	14.7	53.3
1960	12.0	43.4
1970	15.2	42.6

Table 4

Work Injury Rates, Manufacturing and Coal Mining, 1926-1970

(Per Million Manhours)

Source: U.S. Department of Commerce Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970* (Washington, 1975), Series D-1029 and D-1031.





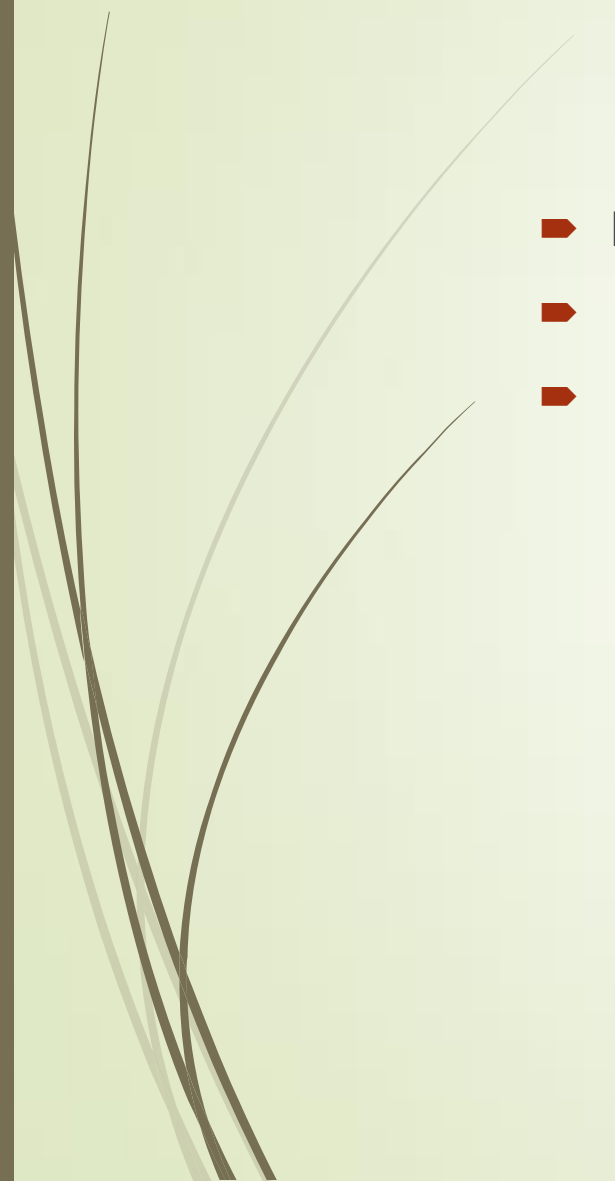
Times Beach, Missouri







History

- ▀ Landmark Legislation
 - ▀ 1970
 - ▀ 1973
- 

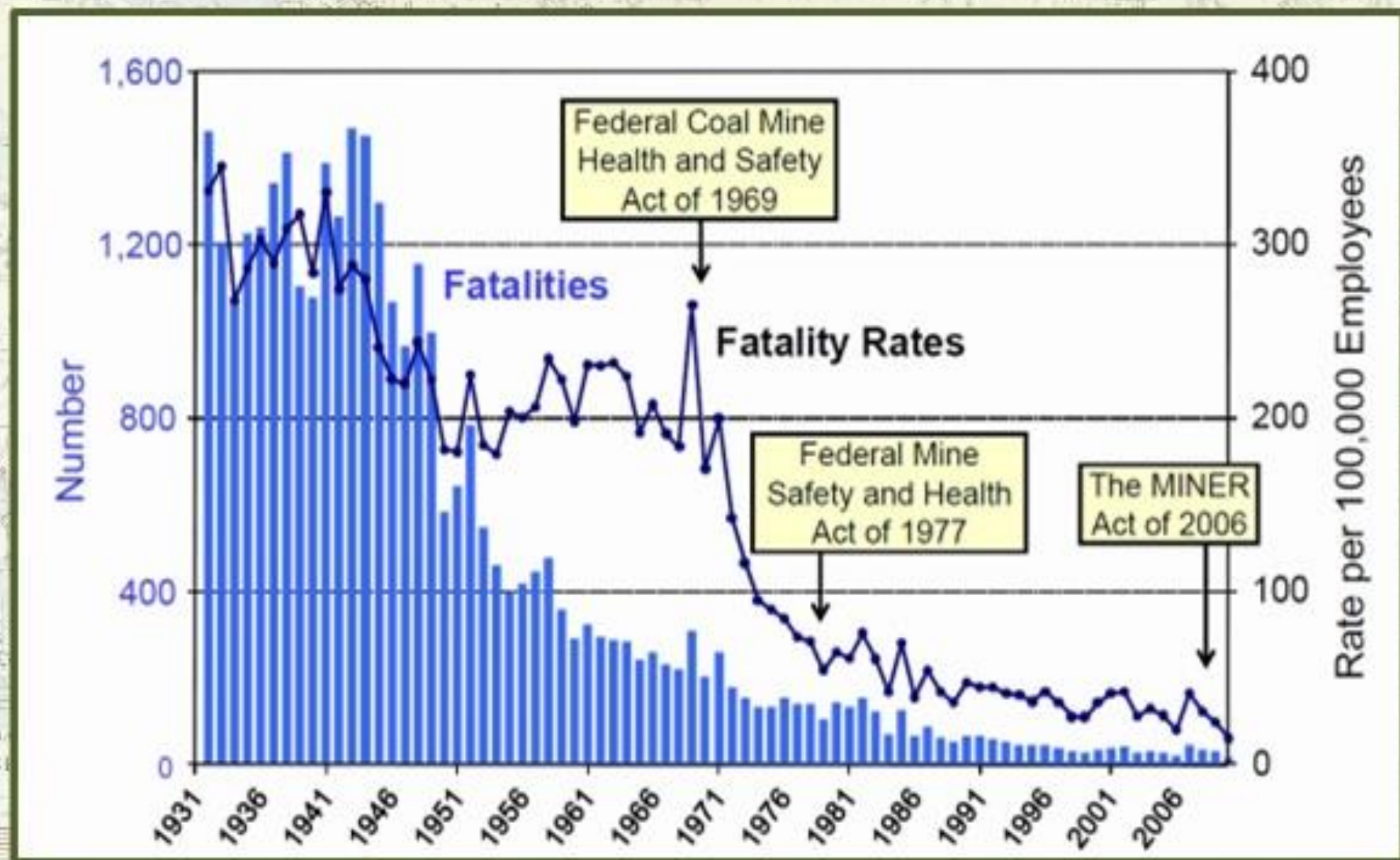
State Plan

1973



Washington State Department of
Labor & Industries

Did These New Laws Reduce Workplace Fatalities?





Trending Now

- Top 7
 - BLS Data
- 



Most Dangerous Jobs in WA

- **7 (Tie). Civil engineering construction**

- This would be those working on bridges, dams, highways and other public projects. For those in the Seattle area, this would include those who worked on the state Route 99 tunnel.

- Deaths between 2011-2017: 10

- **7 (Tie). Construction on buildings**

- This is kind of obvious, right? But it doesn't include contractors like plumbers and electricians. Just those who construct the building.

- Deaths between 2011-2017: 10



Dangerous Jobs in WA

➤ **6. Fishing**

- This is going to be commercial fishers, a dangerous job that anyone who's been on a crabbing boat can tell you.
- Deaths between 2011-2017: 11

➤ **5. Logging**

- A profession that's fueled more than the economy of more than a few Washington towns in the past century and a half, logging has funded school districts for years. This industry sees a steady fatal injury count every year.
- Deaths between 2011-2017: 30



Dangerous Jobs in WA

- **4. Administration and support services**

- These occupations involve landscaping, security and **custodial work**. Fatal injuries come from working with dangerous equipment and other hazards

- Deaths between 2011-2017: 35

- **3. Crop production**

- This includes farmers, farmhands and equipment operators. There may not be a lot near Seattle, but go east of the Cascade Mountains and you'll enter sprawling farmlands.

- Deaths between 2011-2017: 39



Dangerous Jobs in WA

- **2. Specialty trade contractors**

- This includes all the jobs that come in after a building is constructed. Electricians, plumbers and carpenters are some of them.

- Deaths between 2011-2017: 46

- **1. Truck transportation**

- Those who drive semitractor-trailers top this list due to crashes and collisions.

- Deaths between 2011-2017: 48



**I WISH
COMMON
SENSE
WAS MORE
COMMON**



Bean

➡ <https://youtu.be/6aK2CKrdjbE>





Cleaning Chemical Protection



Potential Health Problems Caused By Cleaning Chemicals

Many factors influence whether a cleaning chemical will cause health problems. Some important factors to consider include

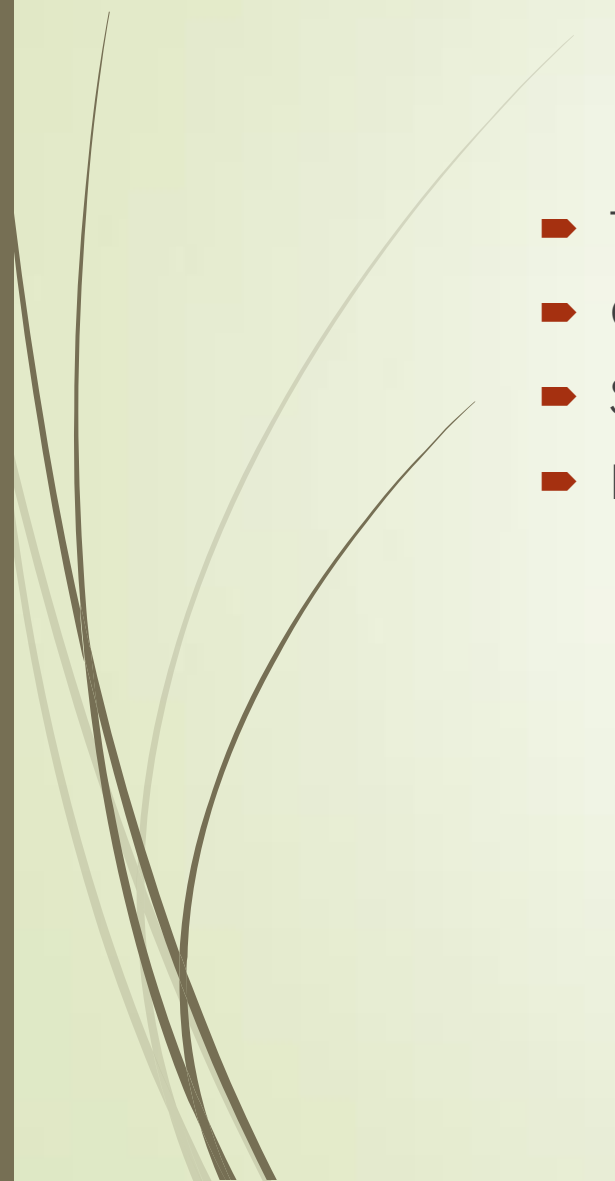


Types of Chemical Exposures

- Dermal
- Eyes
- Mixing of Chemicals – consult MSDS compatibility – try to avoid at all costs
- DANGER – Ammonia and Bleach DO NOT MIX



Industrial Cleaners

- Three Types of Chemicals
 - Cleaners
 - Sanitizers
 - Disinfectants
- 



Green Chemicals

- “Green”
- Some certifying organizations are listed under the Resources section below. The EPA webpages “Cleaning” (<http://www.epa.gov/epp/pubs/products/cleaning.htm>) and “Greening Your Purchase of Cleaning Products: A Guide for Federal Purchasers” (<http://epa.gov/epp/pubs/cleaning.htm>)
- These resources provide comprehensive guidance for purchasers of cleaning products.



Best Way to Choose Safer Chemicals

- Read the MSDS
 - Research and Compare Products
 - Read the MSDS!
- 



The Clorox Company
1221 Broadway
Oakland, CA 94612
Tel. (510) 271-7000

Material Safety Data Sheet

I Product: CLOROX REGULAR-BLEACH											
Description: CLEAR, LIGHT YELLOW LIQUID WITH A CHARACTERISTIC CHLORINE ODOR											
Other Designations Clorox Bleach EPA Reg. No. 5813-50	Distributor Clorox Sales Company 1221 Broadway Oakland, CA 94612	Emergency Telephone Nos. For Medical Emergencies call: (800) 446-1014 For Transportation Emergencies Chemtrec (800) 424-9300									
II Health Hazard Data											
<p>DANGER: CORROSIVE. May cause severe irritation or damage to eyes and skin. Vapor or mist may irritate. Harmful if swallowed. Keep out of reach of children.</p> <p>Some clinical reports suggest a low potential for sensitization upon exaggerated exposure to sodium hypochlorite if skin damage (e.g., irritation) occurs during exposure. Under normal consumer use conditions the likelihood of any adverse health effects are low.</p> <p>Medical conditions that may be aggravated by exposure to high concentrations of vapor or mist: heart conditions or chronic respiratory problems such as asthma, emphysema, chronic bronchitis or obstructive lung disease.</p> <p>FIRST AID: Eye Contact: Hold eye open and rinse with water for 15-20 minutes. Remove contact lenses, after first 5 minutes. Continue rinsing eye. Call a physician. Skin Contact: Wash skin with water for 15-20 minutes. If irritation develops, call a physician. Ingestion: Do not induce vomiting. Drink a glassful of water. If irritation develops, call a physician. Do not give anything by mouth to an unconscious person. Inhalation: Remove to fresh air. If breathing is affected, call a physician.</p>											
III Hazardous Ingredients											
<table border="1"><thead><tr><th>Ingredient</th><th>Concentration</th><th>Exposure Limit</th></tr></thead><tbody><tr><td>Sodium hypochlorite CAS# 7681-52-9</td><td>5 - 10%</td><td>Not established</td></tr><tr><td>Sodium hydroxide CAS# 1310-73-2</td><td><1%</td><td>2 mg/m³ 2 mg/m²</td></tr></tbody></table> <p>¹ACGIH Threshold Limit Value (TLV) - Ceiling ²OSHA Permissible Exposure Limit (PEL) - Time Weighted Average (TWA)</p> <p>None of the ingredients in this product are on the IARC, NTP or OSHA carcinogen lists.</p>			Ingredient	Concentration	Exposure Limit	Sodium hypochlorite CAS# 7681-52-9	5 - 10%	Not established	Sodium hydroxide CAS# 1310-73-2	<1%	2 mg/m ³ 2 mg/m ²
Ingredient	Concentration	Exposure Limit									
Sodium hypochlorite CAS# 7681-52-9	5 - 10%	Not established									
Sodium hydroxide CAS# 1310-73-2	<1%	2 mg/m ³ 2 mg/m ²									
IV Special Protection and Precautions											
<p>No special protection or precautions have been identified for using this product under directed consumer use conditions. The following recommendations are given for production facilities and for other conditions and situations where there is increased potential for accidental, large-scale or prolonged exposure.</p> <p>Hygienic Practices: Avoid contact with eyes, skin and clothing. Wash hands after direct contact. Do not wear product contaminated clothing for prolonged periods.</p> <p>Engineering Controls: Use general ventilation to minimize exposure to vapor or mist.</p> <p>Personal Protective Equipment: Wear safety goggles. Use rubber or nitrile gloves if in contact liquid, especially for prolonged periods.</p> <p>KEEP OUT OF REACH OF CHILDREN</p>											
V Transportation and Regulatory Data											
<p>DOT/IMDG/IATA: Not restricted.</p> <p>EPA - SARA TITLE III/CERCLA: Bottled product is not reportable under Sections 311/312 and contains no chemicals reportable under Section 313. This product does contain chemicals (sodium hydroxide <0.2% and sodium hypochlorite <7.35%) that are regulated under Section 304/CERCLA.</p> <p>TSCA/DSL STATUS: All components of this product are on the U.S. TSCA Inventory and Canadian DSL.</p>											
VI Spill Procedures/Waste Disposal											
<p>Spill Procedures: Control spill. Containerize liquid and use absorbents on residual liquid; dispose appropriately. Wash area and let dry. For spills of multiple products, responders should evaluate the MSDS's of the products for incompatibility with sodium hypochlorite. Breathing protection should be worn in enclosed, and/or poorly ventilated areas until hazard assessment is complete.</p> <p>Waste Disposal: Dispose of in accordance with all applicable federal, state, and local regulations.</p>											
VII Reactivity Data											
<p>Stable under normal use and storage conditions. Strong oxidizing agent. Reacts with other household chemicals such as toilet bowl cleaners, rust removers, vinegar, acids or ammonia containing products to produce hazardous gases, such as chlorine and other chlorinated species. Prolonged contact with metal may cause pitting or discoloration.</p>											
VIII Fire and Explosion Data											
<p>Flash Point: None Special Firefighting Procedures: None Unusual Fire/Explosion Hazards: None. Not flammable or explosive. Product does not ignite when exposed to open flame.</p>											
IX Physical Data											
<p>Boiling point..... approx. 212°F/100°C Specific Gravity (H₂O=1)..... ~ 1.1 at 70°F Solubility in Water..... complete pH..... ~11.9</p>											



Safe Work Practices

- Warning Workers – Training
- Dilution
- Ventilation
- Use, Storage and Spill clean-up
- PPE
- Labeling
- Decontamination



Stand Down For Safety

- **Make Fall Safety a Top Priority**
- It may come as a surprise that the third leading cause of unintentional injury-related death is falls. In 2015, nearly 33,381 people died in falls at home and at work – and for working adults, depending on the industry, falls can be the leading cause of death.
- May 6-10 is National Safety Stand-Down To Prevent Falls in Construction



Fall Prevention

<https://youtu.be/oyXbWCXR15Q>



Falls From Ladders

➡ https://youtu.be/O3E43P_hzmY

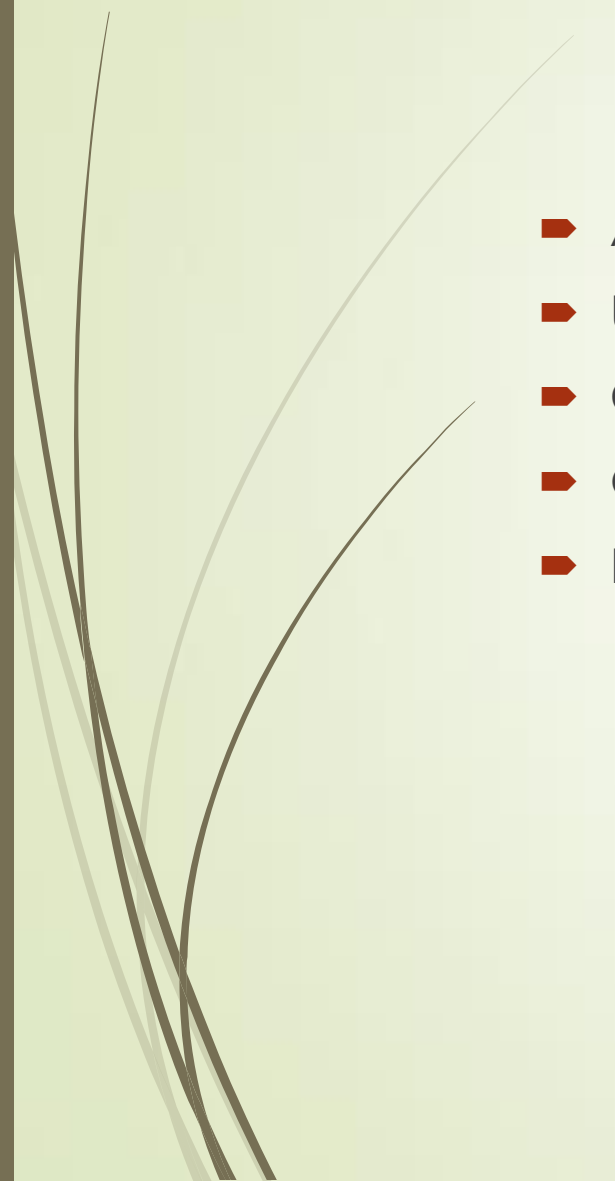


Fly_in





Falls From Ladders

- A leading cause of death
 - Usually result from misuse
 - Checklist is helpful
 - Great safety meeting topic
 - Resources
- 

Elevated Work



Risk



Reality



Fatal Consequence



This Guy



Huh?



Buddy System





Resources



- [OSHA.GOV](https://www.osha-slc.gov/)
- [Lni.wa.gov](https://www.lni.wa.gov/)
- [NIOSH](https://www.niosh.gov/)
- [WorkSafe BC](https://www.worksafebc.com/)
- [Google](https://www.google.com/)



More Information

L & I - [Ladder Safety Webpage](#)

OSHA – [Construction Ladder Misuse](#)

OSHA – [QuickCard Portable Ladder Safety Tips](#)

[Ladder Safety.org](#) – summary of types of ladders

WorksafeBC – [Safe Ladder Use](#) – 13 minute online video

[Ladder Safety Checklist](#)

Note: for review, 4 quiz questions with answers follow this slide



Safety 1st?

➡ <https://youtu.be/u1lcVo1Zshk>



Gut Feeling





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