



Collaborative Bachelor's Degree Program of Fire Protection and Safety Engineering Technology between Southwest Jiaotong University and Oklahoma State University, U.S.A.



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FPST 3013

Safety Management

Leslie Rex Stockel, MS CSP, SMS
Assistant Professor of Professional Practice
Leslie.Stockel@okstate.edu

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How do we manage Safety as a business issue?

What will I learn in this class?

2/22/2022

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Three rationale for Safety



- Financial
 - No safety costs money
 - Lost Production
 - Damage to Equipment
 - Medical Costs
 - Good safety saves/makes money
 - Increase productivity, quality, efficiency
 - Improved morale – happy workers work better
- Legal
 - Government fines and penalties
 - Lawsuits
- Humanitarian
 - It is wrong to hurt workers in the pursuit of making money
 - Protecting workers is the ethical and moral thing to do

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SYLLABUS & SCHEDULE

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Course Objectives



- This course will familiarize the students with the fundamentals and understanding of standard terminology, concepts, and technical areas encompassing **safety and health management system development, implementation, and improvement**.
- At the completion of this course, students will be able to recognize and apply various principles of managed safety and health systems, articulate business ethics.

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Learning Objectives



- Recognize the **historical origins of the safety movement** in the industrialized world.
- Understand the **relationship** of the Occupational Safety and Health Administration (OSHA) to the management of safety systems in the United States.
- Understand the key concepts of **Safety Leadership and Culture**.
- Evaluate the ways that **incidents and loss can happen**.
- Identify **cost factors** related to industrial loss incidents.
- Identify **behavioral and root causes** of loss incidents
- Develop **control strategies** for the prevention of occupational loss incidents.
- **Communicate** the role of various levels of corporate management in the accident prevention process.
- Evaluate occupational events for **risk** and apply those assessments to loss control strategies.

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Student Responsibilities



A. Access Textbook & course materials

B. Complete Required Coursework

C. Watch Lectures and seminars

D. Avoid Academic Misconduct

E. Demonstrate Appropriate behavior

F. Communicate in a Professional Manner

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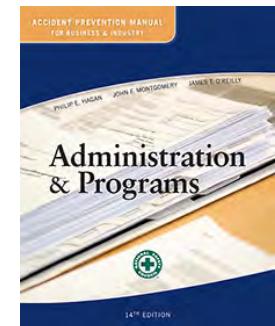
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Required Text and Materials:



- Accident Prevention Manual Administration and Programs 14th edition,
- Hagan, P.E., Montgomery, J.F., O'Reilly, J.T.,
- National Safety Council, 2015
- ISBN 978-0-87912-321-5
-
- Professional journal articles and regulatory information
 - Canvas
 - www.osha.gov



14th EDITION

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CANVAS COURSE PAGE

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Reading Assignments, Homework,



- Reading Assignments
- Listed in Course Outline/Schedule
- Expected to be completed before each class
- Online Quizzes in Canvas

- Projects
- Must be submitted in Canvas by established due date
- Late work will not be accepted
- Handwritten work will not be accepted unless specifically directed by instructor.
- Submitted documents must be scanned, not photographed

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Projects



- Individual (I)
 - Work independently
- Group (G)
 - You will be assigned to a group of 4 or 5

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Assignments



1. Letter to a loved one (I)
2. Incident Investigation (G)
3. OSHA Logs (G)
4. Safety Moment (I)
5. Term Paper (I)

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Safety Moment Presentation



- With Prepare a 3 minute safety moment video
 - topic of your choosing (must be timely and relevant)
 - use any multi-media that you like
 - demonstration
 - Powerpoint or Prezi,
 - YouTube, etc.
 - External Video content cannot exceed 25% of your overall presentation.
 - Cite your sources
 - Business Casual attire expected for presentation.
- Topics:** Must be safety related and relevant. Topics can focus on Campus Safety, Driving Safety, Home Safety, Workplace Safety, etc.
- Peer review 3 of your class-mates videos

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Demonstrate Appropriate Behavior



- Junior Level class
- Professional conduct is expected

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Assignment #1

Letter to a loved one

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About your Instructor - Leslie Stockel, MS, CSP, SMS



- Assistant Professor of Professional Practice, OSU Fire Protection & Safety Engineering Technology
- BS in Fire Protection & Safety Engineering Technology from OSU, 1989
- MS in Engineering & Technology Management from OSU, 2005
- PhD Student – Texas Tech University, expected graduation 2023
- Manager, Health & Safety, OGE Energy Corp
- Las Vegas Valley Water District, Safety Manager
- OSHA Director, State of Oklahoma DOL
- ARCO Chemical, Corporate EHS
- International Paper, Plant Safety
- Board of Directors, Board of Certified Safety Professionals
 - President



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Teaching Experience

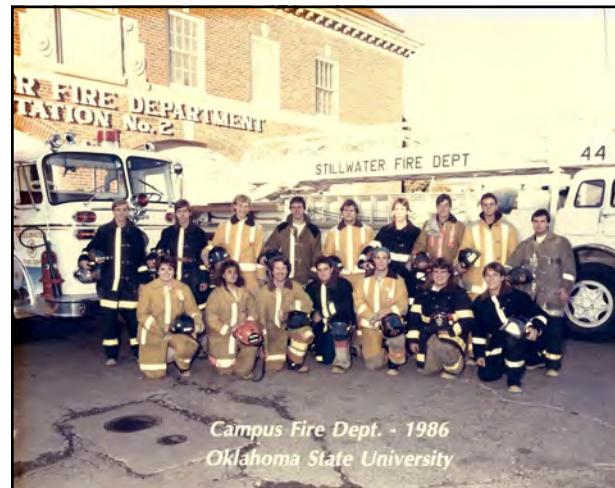
**Oklahoma State University
2016 to present**

- FSEP 5133 Principles of Process Safety
- FPST 2023 Industrial and Occupational Safety
- FPST 3013 Safety Management
- FPST 3213 Human Factors in Accident Prevention
- FPST 4333 System and Process Safety Analysis
- FSPT 4683 Industrial Loss Prevention/Risk Control Engineering
- FPST 4993/1982/4992 Advanced Fire Protection & Safety Problems
- CET 4443 Construction Safety and Loss Control

Adjunct Instructor

- OSHA Education Center 2017- current
- Oklahoma Safety Council 2009 - current
- University of Central Oklahoma – 2010 – 2016
- OSU-OKC 2009-2013
- Rose State College – 2008-2010

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Fun fact about me

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My Family

- Husband Chip – Lt. Col USAF, retired
 - Owns a hobby store in Edmond, OK
- My Oldest son Jeff
 - Junior at OSU in Industrial Engineering
 - Top Ten Freshman - 2019
- My youngest son Jeremy
 - Senior in High School
 - Wrestler
 - USMC, ROTC
 - OSU Spring 2023, Mechanical Aerospace

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Fred & Izzy

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How to Succeed



- Read assignments before class
- Use university resources
- Stay organized and manage your time
- Attend class
- Stay Well
- Healthy Diet, Sleep, Exercise
- Get involved
- Have FUN!



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- “Men resemble Gods in nothing so much as doing good for their fellow man.”
- ~Cicero



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FPST 3013 Safety Management

The History of Safety Management

Feb-22

1

What is Safety?



- Webster's
 - the condition of being safe from undergoing or causing hurt, injury, or loss
- What is safe?
 - free from harm or risk
- How do we know when we are "safe"?
 - A feeling

1

2



Before we can think about the future,
we must understand the past...

3



- 1792 – 1750 BCE
- The Code of Hammurabi



4



Egyptian Civilization



1250 BCE

5



Greek Philosophers



- Hippocrates
 - 460-377 BCE



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The Roman Empire



- Pliny the Elder
- 23-70 AD/CE



7



The Renaissance



Phillipus Aureolus
1567



Georgius Agricola
1556



Bernardino
Ramazzini
1700

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The Industrial Revolution



- The Spinning Jenny in 1764
 - Credited with moving the textile industry from homes to factories
- The power loom in 1784
 - Improve the speed and quality of weaving
- The cotton gin in 1792
 - Easily separates cotton fibers from their seeds
- Replace animal power with mechanical energy (e.g. steam)
- Replace humans with machines
- These changes created hazards that were never before encountered

[The Industrial Revolution](#)

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Industrial Revolution



- 1836: Samuel F. B. Morse invents the telegraph
- 1840: Samuel Cunard begins transatlantic steamship service
- 1859: The first commercial oil well is drilled in Pennsylvania
- 1866: Cyrus Field lays the first successful transatlantic cable
- 1876: Alexander Graham Bell invents the telephone
- 1892: Rudolf Diesel patents the diesel engine
- 1899: Guglielmo Marconi invents long distance radio transmission
- 1903: The Wright Brothers make the first successful airplane flight
- Copyright 1996-1999 by David W. Koeller. dkoeller@northpark.edu

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History of U.S. Safety and Health



- Last half of the 19th century:
 - 1,750,178 working children between the ages of 10-15
 - 12-14 hours a day
- No safety and health guidelines

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Philosophy of the Day before safety laws...



- Came from English Common Law –
- Fellow servant rule
 - The employer was not liable for injury to an employee that resulted from the negligence of a fellow employee
- Contributory negligence
 - The employer was not liable if the employee was injured because of his or her own negligence
- Assumption of risk
 - The employer was not liable because the employee took the job with full knowledge of the risks and hazards involved

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Rational Arguments for Safety



- Humanitarian Argument
 - Accidents represent pain, suffering, & loss to workers, families, the community
 - Is it morally wrong to hurt employees?
 - Financial
 - Safety costs money, but no safety costs more
 - Good Safety is Good Business
 - Legal
 - Compliance with regulation
 - Liability and litigation
 - Willful disregard for safety can be a criminal offense



Changes in Philosophy came about because of...



MILESTONES IN THE SAFETY MOVEMENT



- 1812 - Embargo of War of 1812 spurred development of New England textile industry and the founding of Factory Mutual Insurance Company
 - 1833 - The factory act (child labor)
 - 1864 - North America's first accident insurance policy was issued
 - 1867 - Factory inspection began in Massachusetts
 - 1868 - the first barrier safeguard was patented (machine guarding)
 - 1869 - the Pennsylvania legislature passed a mine safety law requiring two exits from all mines.
 - 1869 - The Bureau of Labor Statistics (BLS) was started
 - 1878 - First recorded call by a labor organization for federal occupational safety and health law
 - 1877 - Massachusetts legislature passed a law requiring safeguards for hazardous machinery
 - 1877 - passage of the Employer's Liability Law establishing potential for employer liability in workplace accidents
 - 1896 - National Fire Protection Association is founded (NFPA)



Pittsburg Survey in 1906 “Death Calendar”



**DEATH CALENDAR IN INDUSTRY
FOR ALLEGHENY COUNTY**

Each red cross stands for a man killed at work, or for one who died as a direct result of an injury received in the course of his work.



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Teddy Roosevelt



- 1908
 - “The number of wage-earner accidents is appalling”
 - First WC law
 - only covered federal employees



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First WC Bill



- Wainwright Law of 1910
 - Gave employee's property of the employer without due process of the law
 - Declared unconstitutional on March 25, 1911
 - What happened on this day?
 - The Triangle Shirt Waist fire
 - Declared constitutional mid-1914
 - Wainwright Law.docx
 - 1916
 - US Supreme Court declares WC constitutional
 - New York Central Railroad Co. v. White
 - One man killed for each mile of track laid
 - Many states followed by implementing WC laws

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Insurance Companies



- Instrumental in the safety movement
 - Why?
 - Provided lower rates to safe companies
 - What were the first two large-scale industries to have organized safety programs?

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More Milestones



- 1908 - US Steele instituted the first formal Workplace Safety Program
- 1911 - ASSE founded
- 1912 - NSC founded
 - First national survey revealed chaos in industrial safety
- [1913 – US Department of Labor established](#)
- 1918 - ANSI founded
- 1930s – the Great Depression
- 1945 – WWII ended
- 1969 - Board of Certified Safety Professionals was established.
- 1970 - [OSHA created](#)
- 1999 – ANSI Z10 & OHSAS 18001 was 1st published
- 2016-17 – ISO 45001 in final draft stage

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Safety and the Law



- Walsh-Healy Act - 1936
 - Firms contracting with government must provide safe and healthful conditions
- Other Laws
 - Contract Work Hours and Safety Standards Act – 1969
 - Williams-Steiger Occupational Safety and Health Act - 1970 (OSH Act)

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International Standards



- Three key international regulatory guidelines
 - The European Framework Directive on Safety and Health at Work – 1989
 - Guaranteed minimum safety and health requirements throughout Europe
 - Member States allowed to maintain or establish more stringent measures
 - Worker health and safety
 - Hazard Identification
 - Hazard Prevention
 - Competent Safety Professionals
 - Emergency Response
 - First aid and facility evacuation

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International Standards



- International Organization for Standardization (ISO???)
 - 9000
 - Quality Management
 - 14000
 - Environmental Management
 - 45001
 - standard for management systems of occupational health and safety (OH&S), published in March 2018
 - They tell the what but not the how

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Emerging Trends



- Analyzing loss potential of an organization or activity
 - What is this?
 - Risk management
 - Predict loss...where, when, severity
 - Prevent occurrence
- True incident causal analysis
- More focus on product safety

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HAVE WE CHANGED THE PICTURE?

WORNG QUESTION



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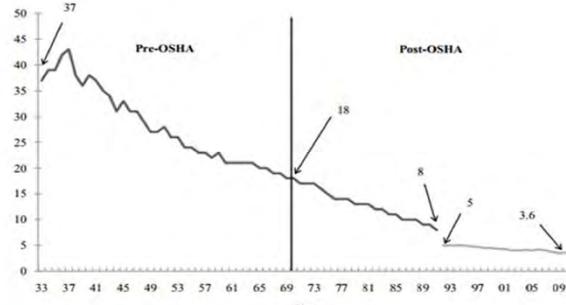
HAVE WE IMPROVED?

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FIGURE 1: WORKPLACE FATALITIES, 1933–2010

Death Rate
(Per 100,000 Workers)



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Fatality Rate

Fatalities per 100,000 workers



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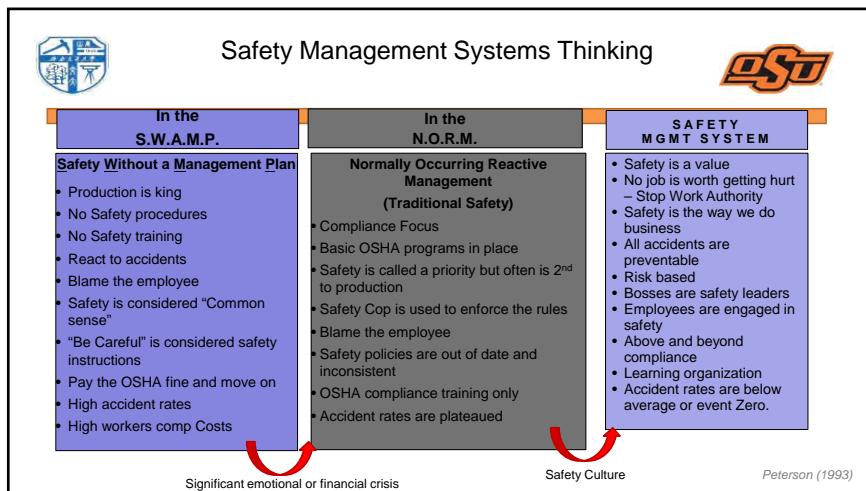


Improvement

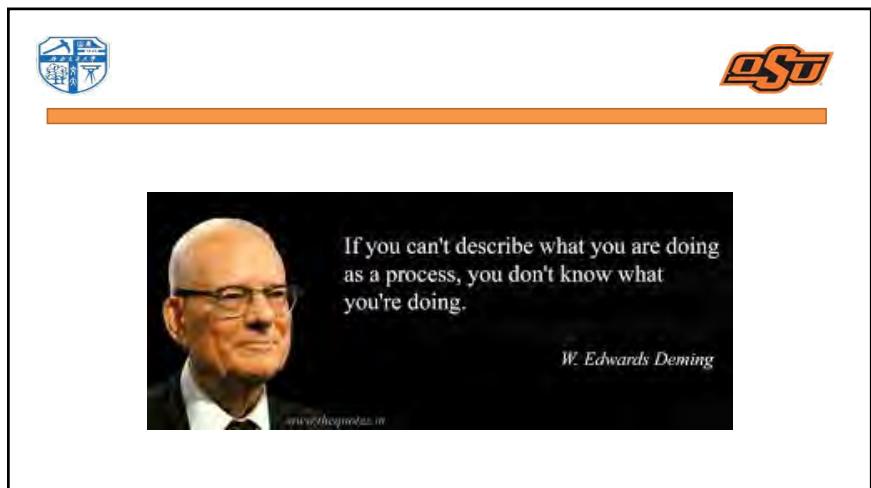


- Between 1912 and 1999, death rate reduced 92%
- Incident Rate Trends
 - Lowest for smallest companies, <19 EE
 - Rise for medium sized, <250 EE
 - Decline for large, >250 EE
 - Lower for smaller companies...less exposure...but why higher for medium companies?
- Problem with the Data
 - Reporting used to be voluntary
 - All reporting is on the honor system
- Is there another explanation for the reduction in death rate instead of safety programs?
 - Growth in service industry
 - Reduction of high risk industry

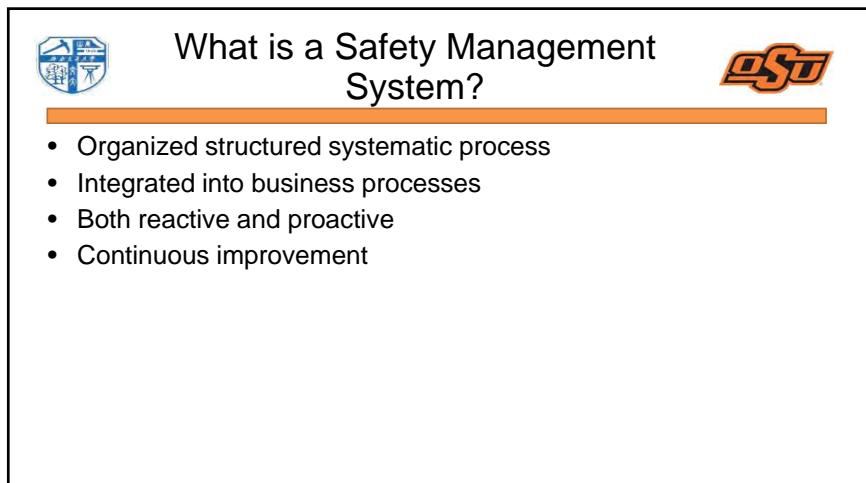
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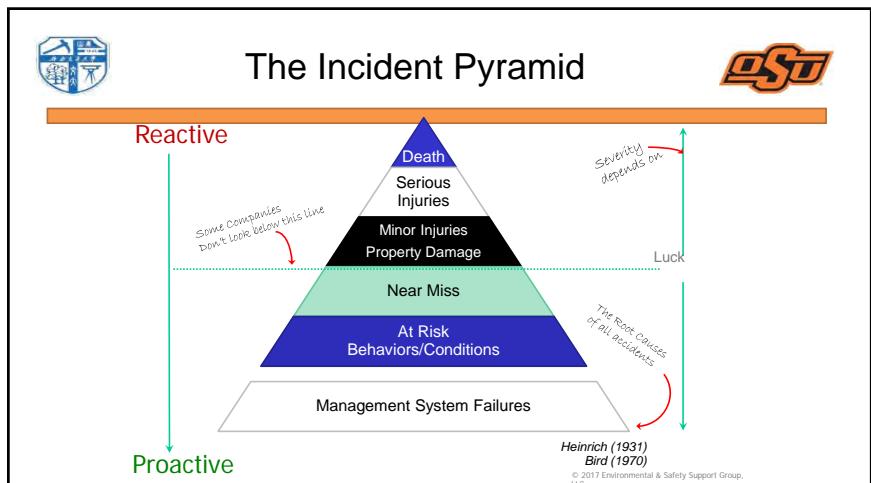
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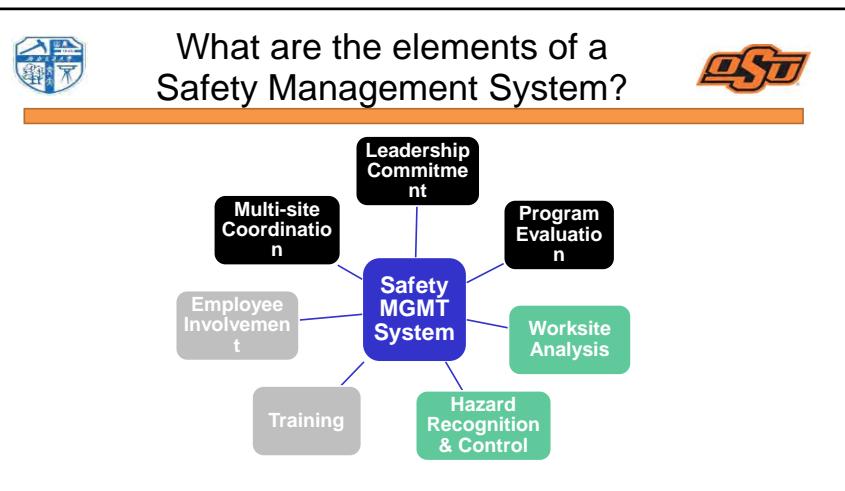
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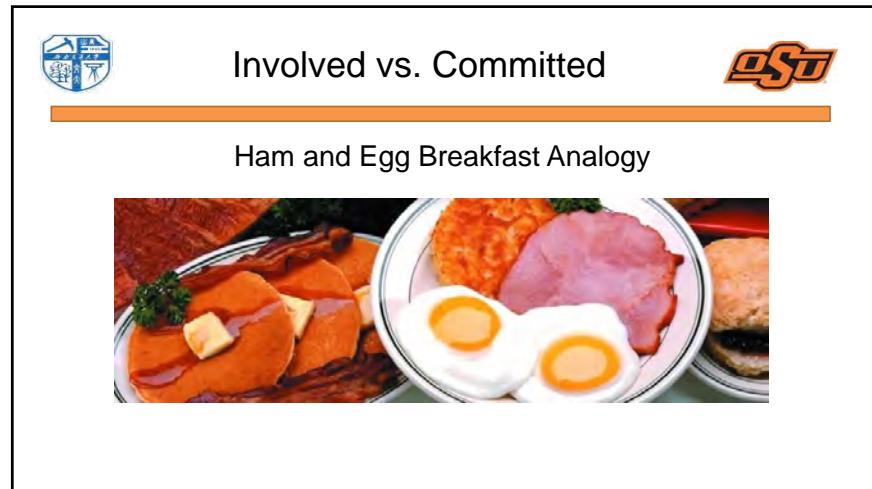
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Safety Professionals



- Specialized knowledge in physical and social sciences
 - Physical
 - Chemistry
 - Math
 - Statistics
 - Physics
 - Engineering
 - Social
 - Behavior
 - Motivation
 - Communication
 - Business theory
- Where do safety professionals spend the majority of their time?

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CURRENT ISSUES



- Technology and Public Interest
 - The internet = public knowledge
 - Not just of events, but of laws, best practices, new innovations
 - e.g. Web MD
- Political Problems
 - Main one?
 - Industry – Union – Government relations
 - No end in site

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FUTURE ISSUES



- You can't put a price on a life
 - Public knowledge will continue to increase
- Global Market = global Standardization
- Shift from manufacturing to service = reduced risks
- More diverse work force = cultural differences
- Developing countries and the information age
 - Safety expertise needed globally
- Criminal prosecution of employers
 - Facilities cannot hide any more

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Ethics and the Safety Professional

Watch the "Enron Scandal" video in Canvas

1



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Is money the root of all evil?

"Unlimited power is apt to corrupt the minds of those
who possess it."

*William Pitt the Elder,
Earl of Chatham and British Prime Minister,
1770*

"Power tends to corrupt, and absolute power
corrupts absolutely. Great men are almost always
bad men."

John Emerich Edward Dalberg Acton, first Baron Acton 1887

2



Ethics



- Applied to business, the concept of ethics means:
 - "...written and unwritten codes of principles and values that govern decisions and actions within a company."
 - A definition for business ethics boils down to knowing the difference between right & wrong and choosing what is right.

3



Ethical Issues



- What is ethics?
 - Doing the right thing?
 - What's the right thing?
 - OSHA compliance?
- Part of the "plant conscience"

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Ethics and Morals



	Ethics	Morals
What are they?	The rules of conduct recognized in respect to a particular class of human actions or a particular group or culture.	Principles or habits with respect to right or wrong conduct. While morals also prescribe dos and don'ts, morality is ultimately a personal compass of right and wrong.
Where do they come from?	Social system - External	Individual - Internal
Why we do it?	Because society says it is the right thing to do.	Because we believe in something being right or wrong.
Flexibility	Ethics are dependent on others for definition. They tend to be consistent within a certain context, but can vary between contexts.	Usually consistent, although can change if an individual's beliefs change.
The "Gray"	A person strictly following Ethical Principles may not have any Morals at all. Likewise, one could violate Ethical Principles within a given system of rules in order to maintain Moral integrity.	A Moral Person although perhaps bound by a higher covenant, may choose to follow a code of ethics as it would apply to a system. "Make it fit"
Origin	Greek word "ethos" meaning "character"	Latin word "mos" meaning "custom"
Acceptability	Ethics are governed by professional and legal guidelines within a particular time and place	Morality transcends cultural norms

https://www.difffen.com/difference/Ethics_vs_Morals

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Ethics Defined



- Ethics can be defined as:
 - Application of morality within a context established by cultural and professional values, social norms, and accepted standards of behavior
 - Ethical behavior is that which falls within the limits prescribed by morality

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Ethics Defined



- Ethical questions are rarely black and white, but typically fall into a gray area between the extremes of right and wrong
- Personal experience, self-interest, point of view, and external pressure often cloud this gray area further

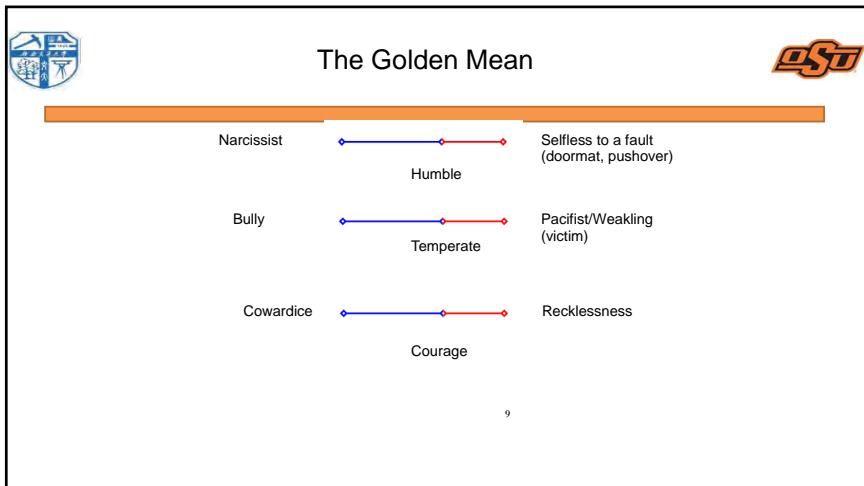
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Golden Mean



- From Aristotle's Nicomachean ethics:
 - Edumonia (happiness)
 - Flourishing
 - The human Good
- *"The Good of man is the active exercise of his soul's faculties in conformity with excellence or virtue, or if there be several human excellences or virtues, in conformity with the best and most perfect among them. Moreover, to be happy takes a complete lifetime; for one swallow does not make a spring." Aristotle (1.7.1098a)*
- Ethics and morality form a continuum between vice, virtue, and counter vice
- Virtue is found in the middle (Mean), though it typically lies somewhat off center (as in the golden proportion)
- Also found in the writings of Confucius as well as Wasat in Islam

8



9

-
- Business Ethics
- “...written and unwritten codes of principles and values that govern decisions and actions within a company.” (lumenlearning.com)
 - A definition for business ethics boils down to knowing the difference between right & wrong and choosing what is right.

10

-
- Legal ≠ Ethical
- What is permissible under law may not be morally permissible
 - e.g. slavery and lack of women's suffrage were at one time legal
 - Presently, it is legal to be in debt beyond your means, know you are going to file for bankruptcy protection, but max out your remaining credit cards on a vacation in Barbados
 - This is a moral decision that violates the ethics of Justice
 - Rooted in respect to the legal system

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-
- Situational Ethics & Morality
- Is it ever permissible to tell a lie?
 - The ethics of justice lead to the conclusion that lying is an immoral act because it is used to deceive someone who has a right to know
 - Is it ever permissible to tell an untruth?
 - Situational. When another ethic is at jeopardy e.g. Life
 - If you are hiding Anne Frank in your home and the SS are at the front door asking if you are hiding Jews. Telling the truth would forfeit their lives (Ethic) and the SS do not have a right to that information
 - Classified information works under a similar concept
 - White lies, when someone cooks you dinner and it isn't any good, would you interfere with their pursuit of happiness by telling them it's bad?
 - Les Misérables*. Jean Valjean is sentenced to 15 years in the galleys for stealing bread for his starving sister and her baby

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The ethical decision



- A four-question test to determine if a given decision is ethical:
 - Is the decision truthful?
 - Is the decision fair to all stakeholders?
 - Will the decision generate goodwill for my organization?
 - Is the decision beneficial to all stakeholders?

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Basis for Law continued



- These influences can still be felt today, while other have faded away
 - Who did Robin Hood steal from?
 - The knee-jerk answer is "the rich" reflecting on the value of equality
 - However, he really stole from government who was oppressively taxing the people

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Ethical Approaches



- Best Ratio Approach
 - *people are basically good, but can be driven to unethical behavior*
- Situational Ethics
 - *hard decisions must be made, do the most good for the most people*
 - a.k.a. "The lesser of two evils"
- Black and White approach
 - *Right is right, wrong is wrong*
- Full Potential approach
 - *make decisions based on how the outcomes affect the ability of those involved to achieve their full potential*

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Guidelines for Determining Ethical Behavior



- The morning-after test
 - *How will I feel about this in the morning?*
- Front page test
 - *How would this feel if it were on the front page?*
- Mirror test
 - *Can I look at myself in the mirror and feel right?*
- Role Reversal test
 - *Look at the situation through the other persons eyes*
- Instinct/Gut test
 - *If it feels wrong or you feel you have to hide it, it probably is*
- *The Mother test*
 - *How would your Mom (or Dad) feel about this decision?*

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Ethical Concerns for Businesses



- Hiring & Promotion Practices
- Diversity & Inclusion
- Regulatory Compliance
- Financial Practices
 - Accounting
 - Purchasing
- Shareholder Practices
- Health & Safety

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Whistle-Blowing



- Whistle-blowing is the act of informing an outside authority or the media of alleged illegal or unethical acts on the part of an organization or individual

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Unfortunately, whistleblowing may come with a price...



- Whistleblowers are generally disliked
 - "Don't tell" mentality
 - Shunned/Outcasts
 - Labeled a "Tattle-tale"
 - Retribution
 - Damaged relationships
 - Scapegoat
 - Litigation

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Ethics and Personal Character



- What is character?
- The truth of an individual's character is expressed in the decisions of their actions
- By their deeds you will know them...
- Decisions and consequences
 - "You make the decisions, you live with the results"

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NEARLY ALL MEN CAN STAND ADVERSITY, BUT IF YOU WANT TO TEST A MAN'S CHARACTER, GIVE HIM POWER.

--- ABRAHAM LINCOLN ---



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OSU

"Men resemble Gods in nothing so much as doing good for their fellow man."
-Cicero



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OSU

BCSP Code of Ethics

Located in Canvas

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Ethics Question 1

OSU

- You are the Safety Manager at Cowboy Manufacturing Plant. You are notified of an employee report of injury that is suspected to be fraudulent. The employee received medical treatment, which would make the injury OSHA recordable, but you cannot prove that the employee is lying. The company is very close to making its yearly safety goal for injuries and illnesses and if this injury is recorded, it will blow the goal. If the plant makes the goal, everyone will receive a sizeable bonus.



Ethics Question 2



- You have a good friend who is a contractor trying to bid on a project at your refinery. His company's incident rate is too high to permit him to submit a proposal based on your current procedures. You are the Safety Director and have the ability to bypass the procedural requirements. He is pressuring you to submit a waiver on his behalf and promises that his company is very safe. If he does not get the contract, his business will suffer and he will have to release half of his workers.

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Ethics Question 3



- You are the DOT coordinator for the Heavy Haul group. One of the drivers tells you that he went to Colorado on vacation six weeks ago and smoked marijuana. DOT regulations and company policy prohibit the use of marijuana for large equipment operators but he smoked the marijuana in a state where it was legal. What would you do

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Ethics Question 4



- A foreman in your plant has not conducted a safety meeting or required safety training all year long. Now in December, he wants to hold a marathon safety training session to cover all of the required topics and backdate all of the safety meeting reports so that he will complete his performance objectives. He offers to take you hunting with him at his exclusive lease this weekend if you do it.

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Ethics Question 5



- Your corporation has a policy that all Lost Time accidents must be reported by phone to the Vice President of Operations within 4 hours of the accident occurring. Your plant manager is on the hot seat for production, quality and safety issues and is afraid that he will get fired if the plant has any more accidents. He wants you to not report a Lost Time accident that occurred this morning. He wants to hold it until after the monthly production numbers are reported.

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Ethics Question 6



- You are the EHS Director of your company. Your Safety department is going to have a manager position opening soon. One of your Senior Safety Engineers has invited you to his Lakehouse in the mountains for a weekend of fun. You know he is planning on applying for the job.

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Ethics Question 7



- You are on a hiring committee for a new safety position, the best man from your wedding has applied. He's a good guy, but maybe not as dedicated a worker as you would like to see hired.

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Ethics Question 8



- You have been working on a team to develop a safety training program for supervisors. You were supposed to write one section of the training in preparation for the next meeting. You haven't done it. You ask a coworker to help you and she gives you some training that she developed at her last job. It is fantastic! So you take the material, make a few changes and then submit it. The Vice President of EHS, after reviewing it, recognizes you in front of the entire organization for the great work that you have done.

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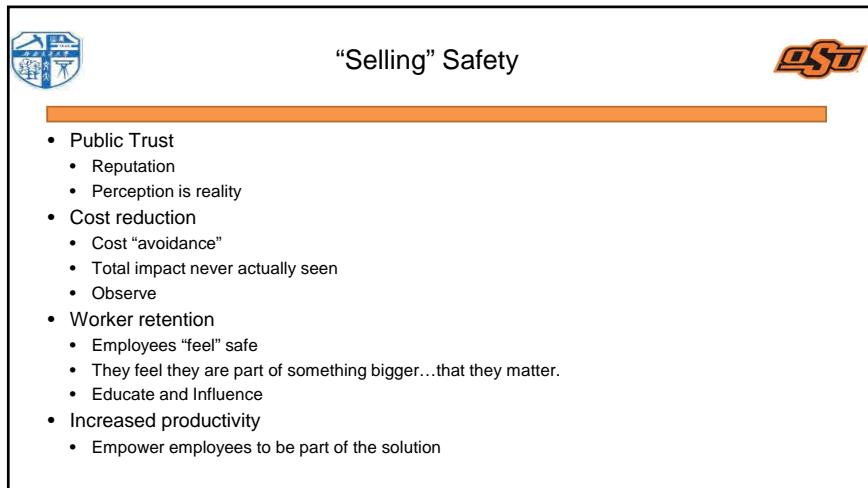
EHS Professional's Role



- Book
 - Save lives
 - Prevent harm
 - Maintain productivity
 - Encourage retention of workers
 - Make the people feel like they work in a safe place
- The above is the icing on the cake
- Here's the cake:
 - Observe
 - Educate
 - Empower
 - Influence
 - Make 'em Feel safe
- "Seek first to understand, then be understood."
- Safety glasses example

Stephen Covey

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The slide has a blue header bar with the university logos on either side. The title "Selling" Safety is centered above a horizontal orange bar. Below the bar is a bulleted list of strategies:

- Public Trust
 - Reputation
 - Perception is reality
- Cost reduction
 - Cost "avoidance"
 - Total impact never actually seen
 - Observe
- Worker retention
 - Employees "feel" safe
 - They feel they are part of something bigger...that they matter.
 - Educate and Influence
- Increased productivity
 - Empower employees to be part of the solution

The Singapore Accord
on the Standards of OHS Professionals

3 SEPTEMBER 2017
SINGAPORE



1

Singapore Accord - What it is

- ▶ Title:
"Singapore Accord on the standards of OHS Professionals"
("Singapore Accord")
- ▶ a commitment to improving OHS professional and practitioner capabilities so they may more effectively guide and lead the creation of healthier and safer workplaces



<http://singaporeaccord.org>

2

Who is INSHPO

- ▶ International Network of Safety & Health Practitioner Organisations
- ▶ A global voice for the OHS profession. An alliance dedicated to advancing the OHS profession



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3

INSHPO Member Organisations



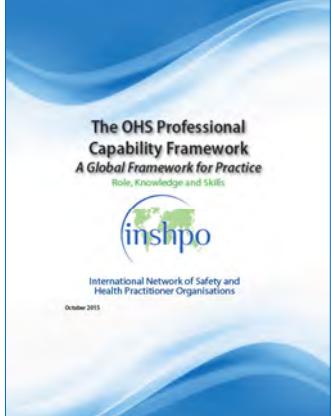
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4

Required of the OHS Professional

A Framework

- Activities
- Knowledge
- Skills



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5

Competence vs Capability

<p>Competence</p> <ul style="list-style-type: none"> ▶ the ability to transfer and apply knowledge and skills to new situations and environments, consistently applying knowledge and skills to a standard of performance required in the workplace. 	<p>Capability</p> <ul style="list-style-type: none"> ▶ The applied theoretical knowledge that underpins practice in occupations and professions and also the industry-specific knowledge and skills that transcend particular workplaces and the tacit knowledge of the workplace
---	---

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Competence vs Capability

- ▶ The difference between competency and capability is that competency is about delivering the present based on the past, while capability is about imagining and being able to realize the future
 - ▶ Stephenson, quoted in Lewis, J. (2009). Introducing the ACEL leadership capability framework. *Curriculum and Leadership Journal*, 7(16).
- ▶ Capable people have knowledge, skills, self-esteem and values that make them confident in their ability as individuals and in association with others in a diverse and changing society
 - ▶ Stephenson, J. (1992). Capability and quality in Higher Education in J. Stephenson & S. Weil (Eds.), *Quality in Learning*. Kogan Page.

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7

7

- ▶ "However, as OHS management has matured over the last century, it has taken two paths, one the vocationally-trained OHS Practitioner, the other a more managerial/professional role that influences, engages and coaches all levels of the organization, including senior management." (p10)

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▶ "However, as OHS management has matured over the last century, it has taken two paths, one the vocationally-trained OHS Practitioner, the other a more managerial/professional role that influences, engages and coaches all levels of the organization, including senior management." (p10)

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10

OHS Professional vs. Practitioner

Professional <ul style="list-style-type: none"> ▶ University Educated ▶ Designer of OSH strategy ▶ Influences Sr. Mgmt ▶ Develops Systems ▶ Looks at big picture ▶ Critical thinking ▶ Evaluates Complex Risk Scenarios 	Practitioner <ul style="list-style-type: none"> ▶ Vocationally educated ▶ Implementer/Executor of OSH Strategy ▶ May work for an OHS Pro ▶ Tactical/Technical ▶ Drives monitoring/compliance ▶ Technical SME
---	---

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INSHPO Framework - Activities, knowledge and skills

Activities <ul style="list-style-type: none"> • System management • Organisational OHS culture • OHS risk management • Measurement and evaluation of OHS performance • Knowledge management • Communication, engagement and influence • Professional practice and ethics 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center;">Knowledge</th> </tr> <tr> <th>Hazards & risk</th> <th>Hazards & risk controls</th> <th>Safety & health management</th> <th>Professional role</th> <th>Underlying technical, human & social science</th> </tr> </thead> <tbody> <tr> <td colspan="5" style="text-align: center;">Underlying management sciences</td> </tr> <tr> <td colspan="5" style="text-align: center;">Skills</td> </tr> <tr> <td colspan="5" style="text-align: center;">OHS Professional Technical Skills</td> </tr> <tr> <td colspan="5" style="text-align: center;">Training</td> </tr> <tr> <td colspan="5" style="text-align: center;">Surveying inspection & auditing</td> </tr> <tr> <td colspan="5" style="text-align: center;">Measuring and monitoring</td> </tr> <tr> <td colspan="5" style="text-align: center;">Professional Practice Skills</td> </tr> <tr> <td colspan="5" style="text-align: center;">Evidenced-based practice</td> </tr> <tr> <td colspan="5" style="text-align: center;">Empowerment</td> </tr> <tr> <td colspan="5" style="text-align: center;">Leadership</td> </tr> <tr> <td colspan="5" style="text-align: center;">Management</td> </tr> <tr> <td colspan="5" style="text-align: center;">Professional practice</td> </tr> <tr> <td colspan="5" style="text-align: center;">Knowledge management</td> </tr> <tr> <td colspan="5" style="text-align: center;">Problem solving an critical thinking</td> </tr> <tr> <td colspan="5" style="text-align: center;">Evidenced-based practice</td> </tr> <tr> <td colspan="5" style="text-align: center;">Teamwork</td> </tr> <tr> <td colspan="5" style="text-align: center;">Negotiation & conflict management</td> </tr> <tr> <td colspan="5" style="text-align: center;">Project management & change management</td> </tr> <tr> <td colspan="5" style="text-align: center;">Personal leadership</td> </tr> <tr> <td colspan="5" style="text-align: center;">Managing others</td> </tr> <tr> <td colspan="5" style="text-align: center;">Personal Skills</td> </tr> <tr> <td colspan="5" style="text-align: center;">Verbal communication</td> </tr> <tr> <td colspan="5" style="text-align: center;">Professional presentation skills</td> </tr> </tbody> </table>	Knowledge					Hazards & risk	Hazards & risk controls	Safety & health management	Professional role	Underlying technical, human & social science	Underlying management sciences					Skills					OHS Professional Technical Skills					Training					Surveying inspection & auditing					Measuring and monitoring					Professional Practice Skills					Evidenced-based practice					Empowerment					Leadership					Management					Professional practice					Knowledge management					Problem solving an critical thinking					Evidenced-based practice					Teamwork					Negotiation & conflict management					Project management & change management					Personal leadership					Managing others					Personal Skills					Verbal communication					Professional presentation skills				
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Activities

4.1 Activities for OHS Professional and OHS Practitioner

Dimension	OHS Practitioner	OHS Professional	Domain
1. Systems management approach	Support the implementation of a systems approach to OHS.	1.1. Support implementation of and monitor compliance with defined OHS management system, policy and procedures. Builds relationships as a basis for influence ¹¹ with managers to understand the limitations of written safety rules and procedures and to develop trust through workplace and process design, critical controls and proven competence.	Lead and support the development and implementation of a systems approach to OHS.
		1.2. Contribute to identification of required resources and work within resource framework.	Advise on and facilitate commitment of appropriate resources for full-time managing OHS.
		1.3. Support and motivate line management and supervisors to provide OHS leadership and through them to influence workers to give appropriate priority to OHS in relation to other organisational objectives.	Support and motivate senior management and through them all people in the organisation, to provide OHS leadership and to give appropriate priority to OHS in relation to other business objectives.

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Knowledge

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Topic areas

- A. Hazards and risks
- B. Hazard and risk controls
- C. Safety and health management
- D. Professional role and functioning
- E. Underlying technical and social sciences
- F. Underlying management science

Knowledge Level for each topic area:

1. Awareness
2. Routine application
3. Comprehensive application
4. Creative mastery

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Knowledge Matrix

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Table 5: Knowledge matrix for OHS Practitioners and OHS Professionals (continued)

Code	Knowledge category	Illustrates generic topics	OHS Practitioner	OHS Professional
C. Safety & health management				
12.	Safety management	<ul style="list-style-type: none"> ▪ OHS management systems (structure and elements, relevant standards, limitations) ▪ Processes for implementing a critical control management program ▪ System safety ▪ Systems of work, work procedures and instructions ▪ Decision making ▪ Theories of safety management, including new and emerging theories and insights ▪ Relationship of safety management systems to environmental, quality and business management approaches ▪ OHS roles and responsibilities ▪ Principles of assessing and managing contractors ▪ Organizations as complex sociotechnical systems ▪ Concepts of national, organizational and safety culture ▪ Relationship between employee manager and workforce behavior, organizational culture, safety culture and safety climate ▪ Organizational maturity ▪ Role of leadership ▪ Healthy work ▪ Limitations of the role and use of safety and health incentives, awards and competitions in relation to culture 	2-3	4
13.	Organizational culture	<ul style="list-style-type: none"> ▪ International regulatory context ▪ Regional and national regulatory context ▪ Legal principles and comparative legal entities and regulatory frameworks ▪ Criminal and civil law and their effect on OHS 	0-1	2-4
14.	Law, regulation and societal context¹²	<ul style="list-style-type: none"> ▪ International regulatory context ▪ Regional and national regulatory context ▪ Legal principles and comparative legal entities and regulatory frameworks ▪ Criminal and civil law and their effect on OHS 	2	3-4

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Skills

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Skill Level

1. Awareness
2. Routine application
3. Skilled application
4. Creative mastery

A. Personal skills

- ▶ Verbal communication
- ▶ Professional presentation

B. Professional practice

- ▶ Evidence based practice
- ▶ Influence
- ▶ Leadership
- ▶ Management
- ▶ Professional & ethical practice

C. Professional technical skills

- ▶ Training
- ▶ Surveying, inspecting and auditing
- ▶ Investigating
- ▶ Measuring and monitoring

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Example - Skills

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B. Professional skills

B1 Evidence-based practice			
B1.1 Knowledge management			
	Accesses information from a range of workplace sources using digital skills and a variety of strategies.	3	3
	Uses a mix of strategies to access information from a range of external sources.	2	3
	Reviews uses literacy skills to read and interpret OHS legislation, codes of practice, guidance material, policies and procedures.	3	4
	Investigates and assesses the credibility of sources and reliability and validity of information.	3	3
	Collates information to identify common themes.	2	4
	Critically evaluates and validates results through challenging information, concepts, and theories.	2	3
	Synthesizes information to identify implications for practice.	2	3
	Applies information, concepts and theories to inform practice.	3	3

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FPST 3013 Safety Management

Lecture 5 The Incident Investigation Process

"Those who cannot remember the past are condemned to repeat it."
The Life of Reason, George Santayana, 1906

1

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Incident Investigation Information

2

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Accident vs. Incident

"Accident" - a random event that "oh, well, it just happened" and could not have been prevented.

most harmful workplace incidents are wholly preventable.

"Incidents" do not have to occur; they can be prevented

3

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Language of Incident Investigation

- Incident**: A work-related event in which an injury or ill-health (regardless of severity) or fatality occurred, or could have occurred.
- Near Miss**: An incident that could have caused serious injury or illness but did not; also called a "near miss."
- Root Causes**: The underlying reasons why unsafe conditions exist or if a procedure or safety rule was not followed in a workplace. Root causes generally reflect management, design, planning, organizational or operational failings (e.g., a damaged guard had not been repaired; failure to use the guard was routinely overlooked by supervisors to ensure the speed of production).

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Incident with Loss vs. Near Miss



Loss

A forklift falls off a loading dock causing injury to the driver and damage to the vehicle.



Near Miss

A forklift driver narrowly avoids collision with a pedestrian traveling around a blind corner.

Both can be described as Incidents and should be investigated

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Incident Investigation

Why investigate an incident?

- **Fault**
 - A defect or imperfection; flaw. Suggests that a person is unable to control a particular impulse or response.
- **Cause**
 - A person that acts or a thing that occurs so as to produce a specific result. A basis for some belief, action, fact or event.

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Safety Study

1943, 1969
1,753,498 reported accidents
297 companies
21 different industrial groups
1,750,000 employees
Over 3 billion hours worked



The pyramid diagram illustrates the relationship between accident types and their frequency:

Level	Category	Approximate Number
Top	MAJOR OR SERIOUS INJURY	1
Middle	MINOR INJURY	10
Second Level	PROPERTY DAMAGE ACCIDENTS	30
Bottom	NEAR MISSES	600

Bird Jr., Frank E. and Germain, George L. *Practical Loss Control Leadership*. Loganville, Georgia: International Loss Control Institute, Inc., 1992. Print.

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Question 1

A team of iron workers have been assigned to replace defective structural beams and make other necessary repairs on the bottom level of a bridge that spans a river. Because they are working on an elevated structure they each use a personal fall arrest system. Using a full body harness is the suggested method of fall protection for this project. As one of the workers was donning his full body harness, a co-worker notices that his harness strap is partially torn. How would you classify this incident?

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Question 2

Same Scenario with Iron workers, but suppose the torn harness strap has gone unnoticed. As the iron worker positioned himself on a beam, to cut away rusted bridge supports with a torch, he loses his balance and falls. Although he was properly tethered to an anchor point, his torn harness failed and he falls to his death.

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Question 3

Worker almost falls into an open manhole that is not barricaded.

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Question 4

Construction worker drops a tool from the 14th floor of a building, striking the windshield of a vehicle parked below, and shattering it.

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Question 5

While performing a Lockout Tagout procedure, the electrician notices that several of the disconnect switches are mislabeled which could lead to the wrong equipment being isolated and de-energized.

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Question 6

A welder begins welding on a flammable liquids tank when he is abruptly stopped by the foreman because the LOTO and Hot Work Permit had not yet been performed in this area.

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Terms and Definitions

Incident Investigation

- A structured process of discovering the sequence of events that produced an incident to determine the causal factors and identify corrective actions to prevent recurrence.

Corrective Actions

- The actions taken to prevent recurrence of the accident.

Causal Factors

- Events and circumstances that occurred prior to the incident and led to or contributed to the outcome of the incident.

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Why is it important to Investigate Incidents?

Watch video: The Human Cost of Gasoline

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Benefits of an Effective Incident Investigation System

- Determine the real causes
- Determine the risks
- Develop controls
- Identify trends
- Prevent recurrence
- Improve Safety & Health (Risk Control) System
- Improve Safety & Health Culture & Employee Perception
- Demonstrate Care & Concern for Employees

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The Incident Investigation System

Goals of Incident Investigation

- Determine the sequence of events
- Determine the basic and root causes
- Recommend appropriate corrective actions that will prevent recurrence

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Promote a Positive Workplace

- Focus on the root causes, not blame or fault
- Although a supervisor sometimes conducts incident investigations, they should be conducted by a team
- Working together will also encourage all parties to "own" the conclusions and recommendations and to jointly ensure that corrective actions are implemented in a timely manner
- These approaches improve the safety management system as well

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Incidents

- Occurrence is due to unsafe behaviors, unsafe conditions or a combination of the two

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Unsafe Behaviors

There are only two reasons why someone performs an unsafe behavior...what are they?

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They didn't know it was unsafe



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They knew it was unsafe and chose to do it anyway



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Direct unsafe behaviors



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Indirect unsafe behaviors



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The Incident Investigation System

Policy and Procedure

- Establishes formal leadership commitment to process
- Defines roles & responsibilities
- Defines terms
- Outlines specific procedures to be followed
- Identifies training needs
- Establishes review cycles
- Outlines documentation procedures



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The Incident Investigation System

Leaders must support the system for it to be effective:

- Creating a culture of continuous improvement and learning
- Allowing sufficient time for training, investigations, follow-up
- Providing resources for corrective action implementation
- Avoiding fault-finding mentality
- Demonstrating care and concern for employees involved in an incident
- Reassurance that employees will not be retaliated against.

"If an accident occurs in our department, our whole day just changed!"
Doug Sterbenz, VP Operations, Westar Energy Corp.

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The Incident Investigation Process

Phases of Incident Investigation



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The Incident Investigation System

Are you ready for an Incident?

Incident Investigation Preparation Tools

- Formal Written Policy
- Emergency Response Plan (Crisis Management Plan)
- Incident investigation training
- Incident investigation kit
- Incident Investigation Data Management System

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FPST 3013 – Safety Management

Lecture 5

The Incident Investigation Process



"Those who cannot remember the past are condemned to repeat it."

The Life of Reason, George Santanaya, 1906



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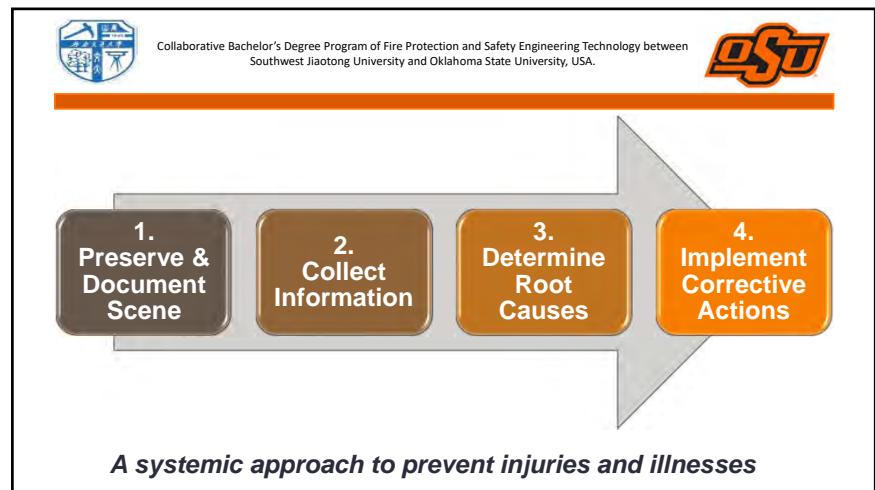
FPST 3013 – Safety Management

The Incident Investigation Process

Lecture 6

Investigative Techniques

1



2

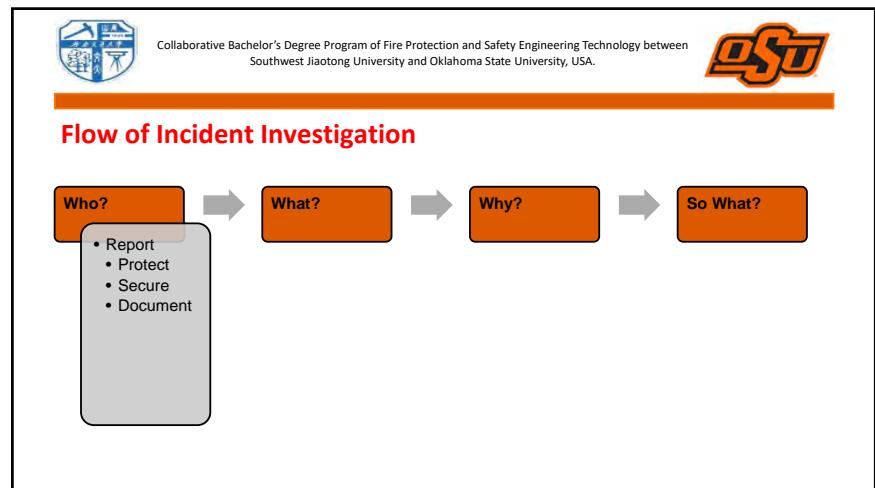
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The Incident Investigation Process

Flow of Incident Investigation

Report → Investigate → Analyze → Correct

3



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Documentation

The image displays two screenshots of incident reporting software. The left screenshot shows a detailed form titled "EMPLOYER'S FIRST REPORT OF INJURY OR ILLNESS" with various fields for injury details, employee information, and reporting requirements. The right screenshot shows a "SELECT INCIDENT / NEAR MISS INVESTIGATION" interface with a list of investigation steps and a timeline.

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The Incident Investigation Process – Who?

Establish a process to notify the organization when an incident occurs

Incident level	Initial Reporting Timeline
All Incidents	Report Immediately or as soon as awareness occurs
Minor Incident Near Miss	Notify immediate supervisor
Major	Notify Department Manager within 1 hour
Severe	Notify Senior Leadership within 1 hour
Catastrophic	Notify Crisis Management Team as soon as practical

Incident notification process should be part of overall Emergency Management Plan

The image displays a table showing the initial reporting timeline for different incident levels:

Incident level	Initial Reporting Timeline
All Incidents	Report Immediately or as soon as awareness occurs
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The Incident Investigation Process

Reporting and Notifications

- ♦ Incident Management Software Systems
 - ~ Real time reporting
 - ~ Smart phone/tablet enabled
 - ~ Built in workflows for notifications, due dates, etc.
 - ~ Trend tracking, KPIs, Dashboards, etc.

The image displays a diagram illustrating incident management software systems. It shows a laptop, a smartphone, and a tablet connected to a central cloud icon, representing real-time reporting and mobile access. Below the devices are several small charts and graphs, representing trend tracking, KPIs, and dashboards.

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Preserve/Document Scene

Begin the investigation **immediately** or as soon as possible to help ensure material evidence and memory are more reliable and stable because:

- **Material Evidence** – Such as tools and equipment can move or disappear from the scene
- **Memory** – As time passes, conversations with others and individual emotions distort witnesses' memories of what they actually saw and heard

1. Preserve & Document Scene

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1. Preserve & Document Scene 2. Collect Information 3. Determine Root Causes 4. Implement Corrective Actions

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Collect Information

Once the scene is **preserved** and **documented** it is important to start digging for details and collecting information

Incident information is collected through **interviews, document reviews and other means**

Interviewing doesn't stop at just asking questions, there are "**Why?**" and follow-up questions that need to be asked

Information can be obtained from **people and documents/reports**

2. Collect Information

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Flow of Incident Investigation

Who?
• Report
• Protect
• Secure
• Document

What?
• Investigate
• What Happened?
• Gather Evidence
• Incident Timeline
• Incident Description

Why?

So What?

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2.
Collect
Information

Information Sources

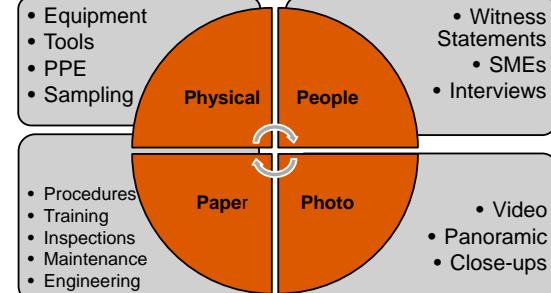
Interviews
Equipment manuals
Industry guidance documents
Company policies and records
Maintenance schedules, records and logs

Training records
Audit and follow-up reports
Enforcement policies and records
Previous corrective action recommendations

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Gather Evidence – The Four P's



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Gather Evidence – the Four P's

- Hardware and solid material related to the incident
- Damaged equipment
- Non-destructive testing
- Material failure analysis
- Atmospheric/chemical sampling
- Guarding equipment
- Personal protective equipment

Physical



Gather Evidence – the Four P's

- Obtain witness statements as soon as possible
- People forget or change story over time
- Written statements if possible
- Who to interview
 - Injured workers
 - Eye-witnesses
 - Emergency responders
 - Operators/maintenance workers
 - Operational technical experts

People

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Which Interview Technique is Best?

Watch two videos

- Bad Interview
- Good Interview

2. Collect Information

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Interview Preparation

When is it best to interview?

- ASAP

Where should the interview be conducted?

- The incident scene, if possible, to help jog memory
- Otherwise a quiet place

When shouldn't interviews be conducted?

- Hospital
- When witness is too upset

2. Collect Information

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Interview Tips

- Put the person at ease
- Build rapport
- Ask them to recount their version of the incident
- Ask open-ended questions
- Let the individual talk and allow the interviewee to complete their statements
- Repeat the facts & sequence of events back to the person
- Keep in mind the focus is determining root causes of the incident
- Take notes

2. Collect Information

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Investigator Do's and Don'ts

<ul style="list-style-type: none">✓ Do explain who you are✓ Do be specific as to why you're there✓ Do be positive. Their knowledge is important✓ Do be diplomatic and understanding✓ Do be adaptable✓ Do express concern and desire to prevent similar incidents✓ Do ask their opinion✓ Do thank them for their cooperation	<ul style="list-style-type: none">✗ Don't argue✗ Don't ask "yes/no" questions✗ Don't be defensive✗ Don't suggest answers✗ Don't accuse✗ Don't rush✗ Don't interview in a crowd
--	--

2. Collect Information

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Gather Evidence – the Four P's

- Policies and Procedures
- Training records of personnel involved
- Audit/Inspection Records
- Maintenance/PM records
- Equipment O&M Manuals
- Any prior incidents
- Engineering drawings
- HazOps, PHA, JHA's, Etc.

Paper

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Gather Evidence – the Four P's

Photo

- Take “Big Picture” photos of the overall scene
- Take close-ups of damaged equipment
 - Include measurement devices to show perspective
- Include time/date stamp on all photos
- Keep a photo log to identify pictures and note their purpose.
- Take videos if appropriate

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Write a coherent Incident Description

- Be objective
- Tell what you have decided actually happened in detail. Don't assume or guess. Prove what you say.
- State the facts of the incident
- Do not assign blame
- Write in a style that everyone can follow
- Do not include individual names
 - Respect individual dignity
 - Use Job titles
- Do not include narrative that is irrelevant to the incident.

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Use a bullet list

- Item 1
- Item 2
- Item 3
- Item 4

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Sequence of events

No causes. No corrective actions.

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Incident Description Example

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CAUTION
DO NOT OPERATE THIS MACHINE
WITHOUT SAFETY GUARDS IN PLACE

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osu

Incident Description

While employee was using trim press and caught his finger between the guide pin and bushing resulting in fingertip amputation.

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Incident Description

Employee was trimming a part in a press. He had already trimmed hundreds of parts that day. He pulled back the pull bars with his wrists on the handles. When the press closed, the tip of his right index finger was caught between the guide pin and bushing resulting in an amputation to the tip of the finger.

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osu

It was a dark and stormy night, last night (1/25/19 11:45 pm) on graveyard shift. Bill went on his break in the breakroom. After he finished eating his dinner, he started to walk back to his work area. The hallway was very dark because a lightbulb had been burned out for months. He grabbed a ladder to change the bulb and then Rick ran into him with the forklift, knocking him off the ladder and breaking his arm. Mark, the foreman grabbed him up and took him to the hospital in his truck in the rain. They X-rayed him, found the arm to be broken, put him in a cast and gave him painkillers and sent him home for the night. He was cleared to come back to work tonight on light duty.

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On January 25, 2019 at 11:45 pm, employee (A) was standing on a ladder to change a lightbulb in the south hallway of Warehouse B. The hallway was dark due to light being burned out for 2 months.

Employee (B) was driving a forklift westbound in the south hallway. He turned the corner by the employee breakroom, but did not see employee A on the ladder. Employee B struck the ladder, causing Employee A to fall to the ground causing injury.

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Establishing a Timeline

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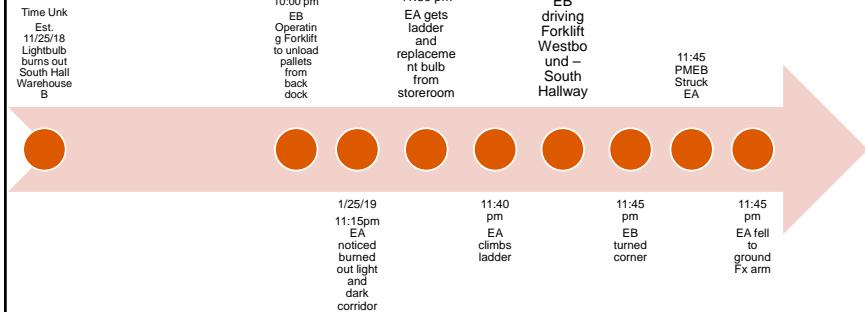


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Basic Timeline

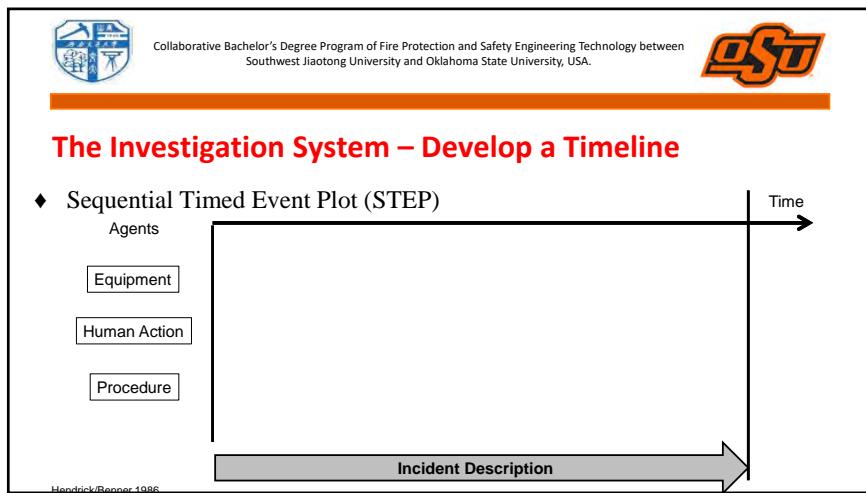
Time Line
Est.
11/25/18
Lightbulb
burns out
South Hall
Warehouse
B



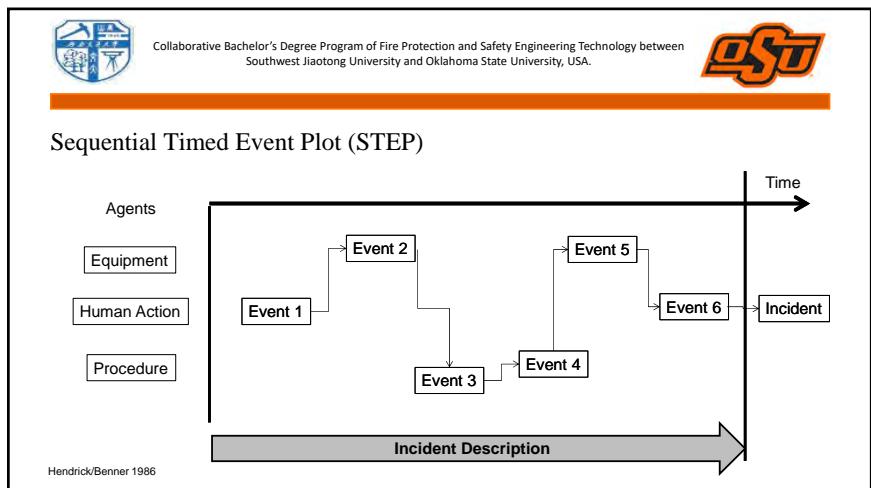
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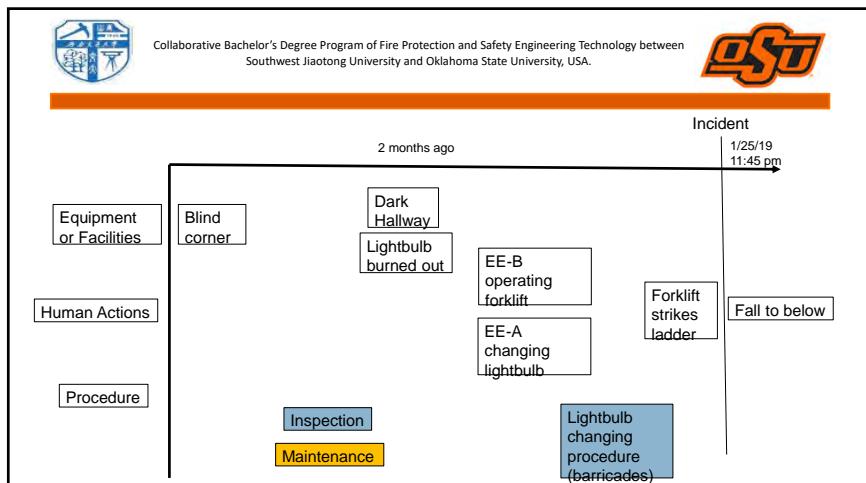
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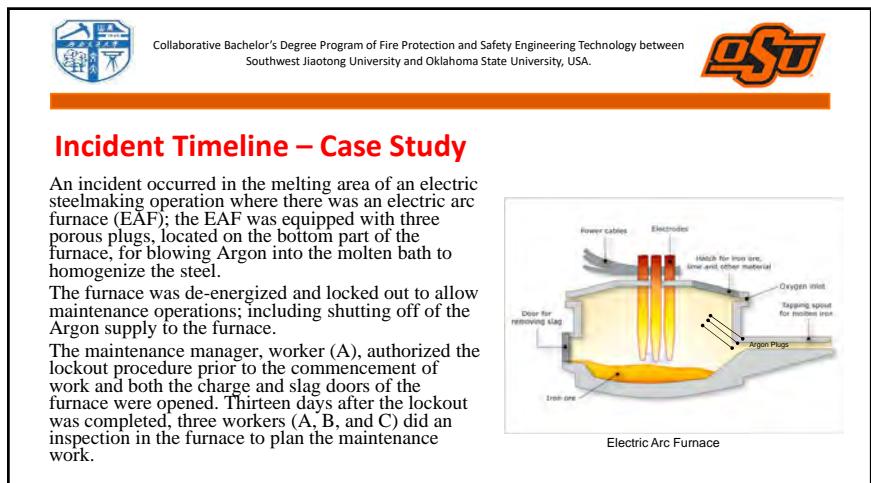
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Incident Timeline – Case Study

Before going into the furnace, worker (B) checked to ensure the Argon valves were closed. During this inspection, worker (C) squatted twice to collect some materials from the bottom of the furnace, without any difficulties. One day later, the maintenance manager, worker (A), and worker (D) were seen outside the furnace ready to perform the maintenance. After about 20 minutes, they were found dead inside the furnace.

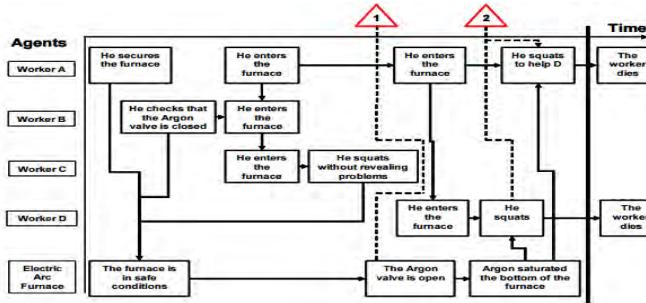
Once they have entered in the furnace, they began to make repairs on the upper part of the oven (time estimated for the activity: 10-15 min); at a certain point, one of the workers, probably (D), squatted to change the disk of the grinding wheel. Because the Argon valve has been opened (it is unknown how the valve was opened), the bottom of the furnace (between the floor and the slag door, located at about 4 ft from the sole) was saturated by the gas, given that it is heavier than air.

Under these conditions, in a low oxygen environment, worker (D) lost consciousness and his death occurred within a few moments. Worker (A) saw him on the ground, he knelt to help him but he lost consciousness also and subsequently died.

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Case Study – STEP diagram



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The Incident Investigation Process



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FPST 3013 – Safety Management

The Incident Investigation Process

Lecture 6

Investigative Techniques

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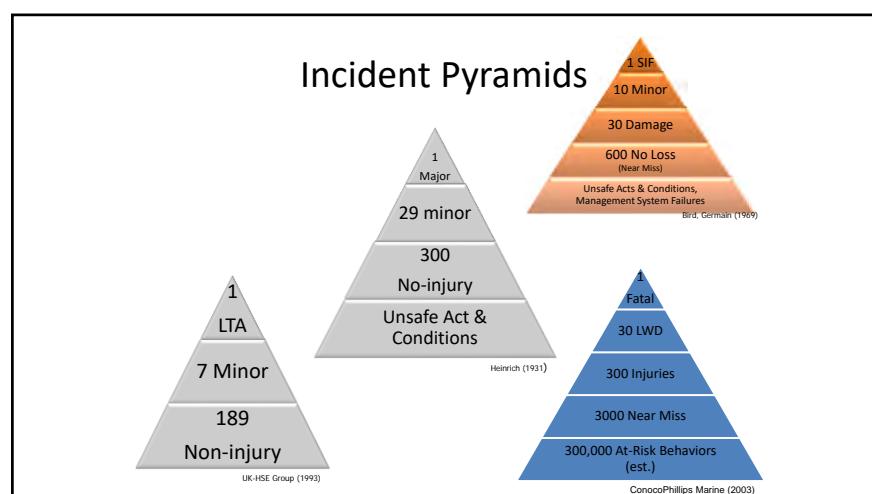


FPST 3013 – SAFETY MANAGEMENT THE INCIDENT INVESTIGATION PROCESS

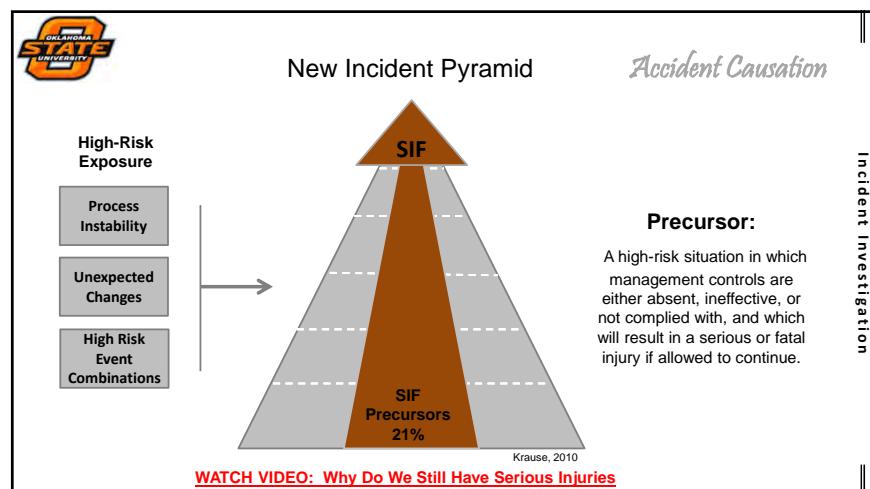
Lecture 6

Accident Causation Models and Root Cause Analysis

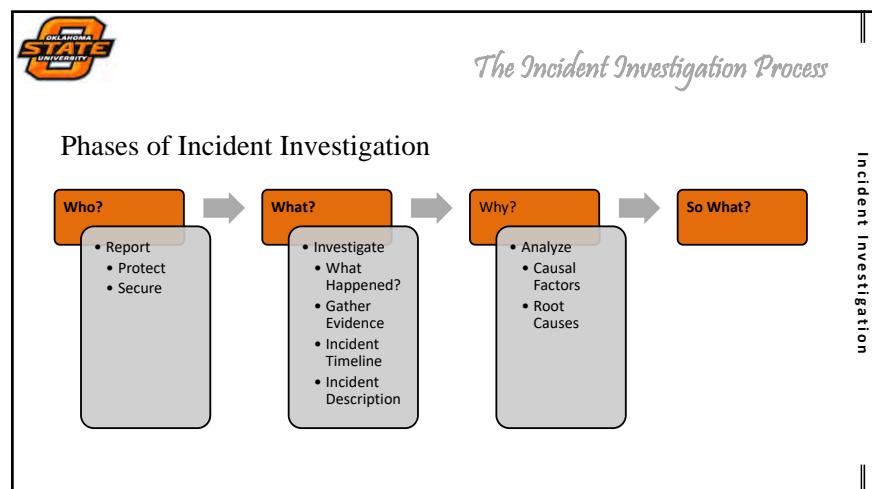
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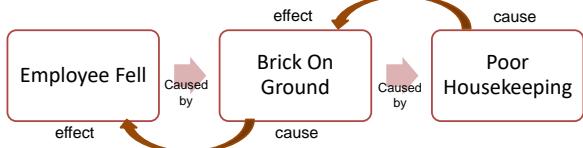


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Principle of Cause and Effect

- ◆ An action or event that will produce a response in the form of another event.



- ◆ Caution: does not necessarily mean that one event caused the other

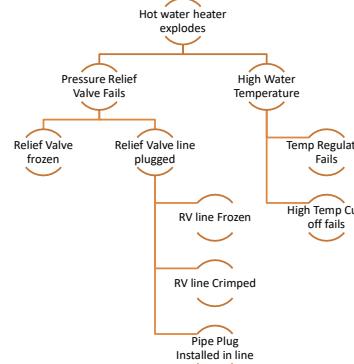
Accident Causation

Incident Investigation



Multiple Causation Principle

- ◆ Very seldom will just one root cause create a condition that results in an incident.
- ◆ In most cases, a chain of events occurs
 - ~ Substandard conditions
 - ~ Substandard acts
 - ~ Management system failures



6

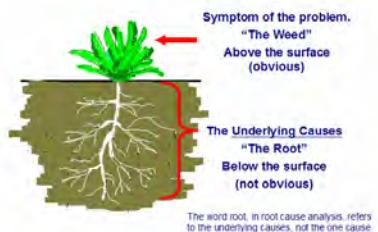
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Analytical Techniques

- ◆ Fishbone (Cause and Effect)
- ◆ 5 Whys
- ◆ Cause Mapping
- ◆ Systematic Cause Analysis Techniques (SCAT) charts

Root Cause Analysis



Incident Investigation

In order to understand why something happened, we must first understand how something happens

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Consider this situation...

- ◆ New maintenance trainee in the last three months



Incident Investigation



- ◆ Training was held to review, among other things, plant rule to wear a face shield while grinding



Incident Investigation

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- ◆ New employee missed training due to illness



Incident Investigation



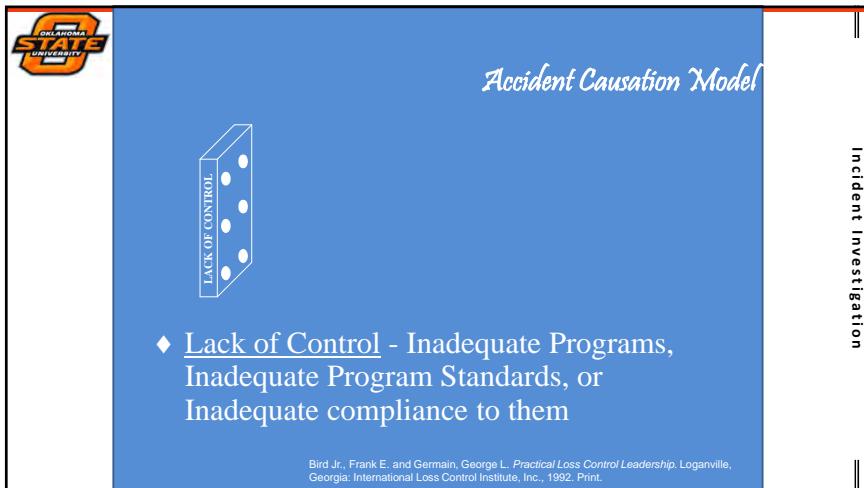
- ◆ A week after returning to work, Newbie was grinding on steel. The disc broke and he lost an eye.



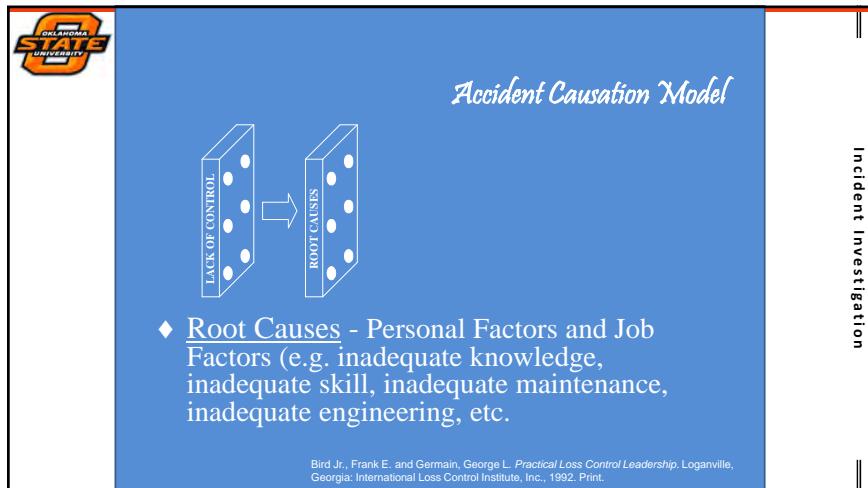
Incident Investigation

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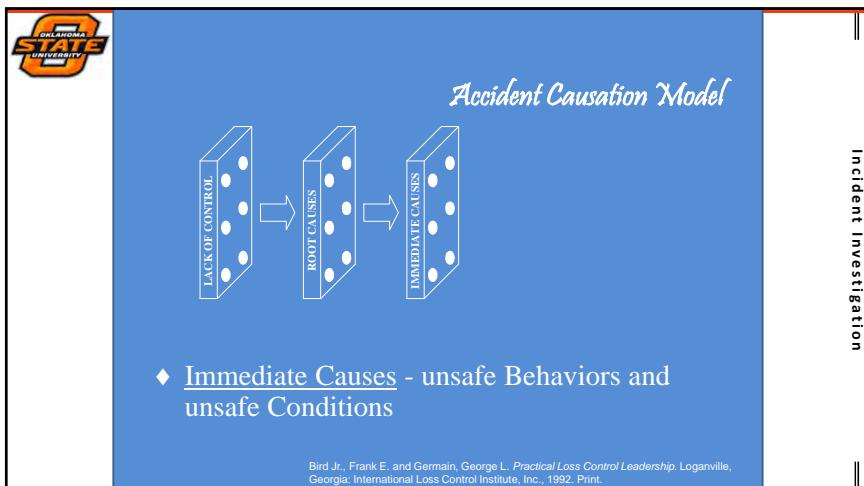
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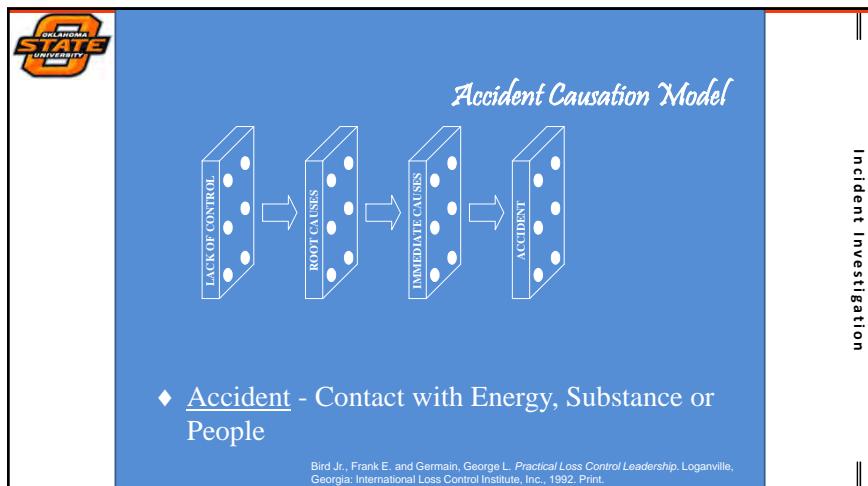
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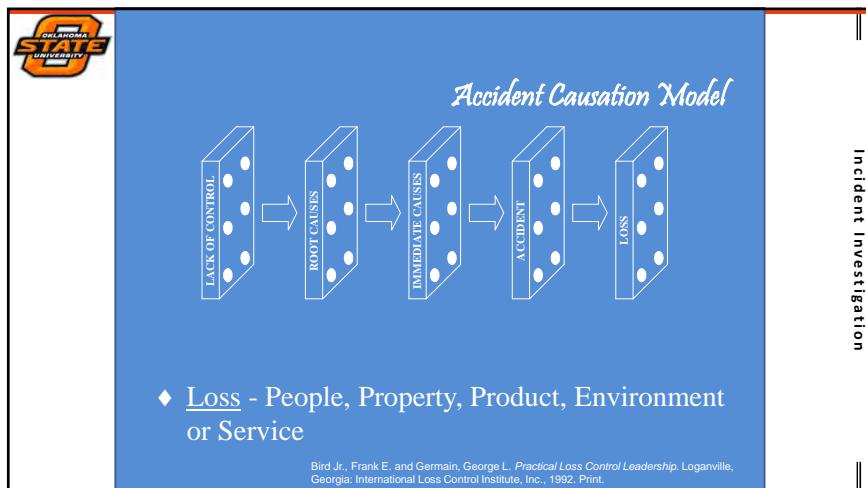
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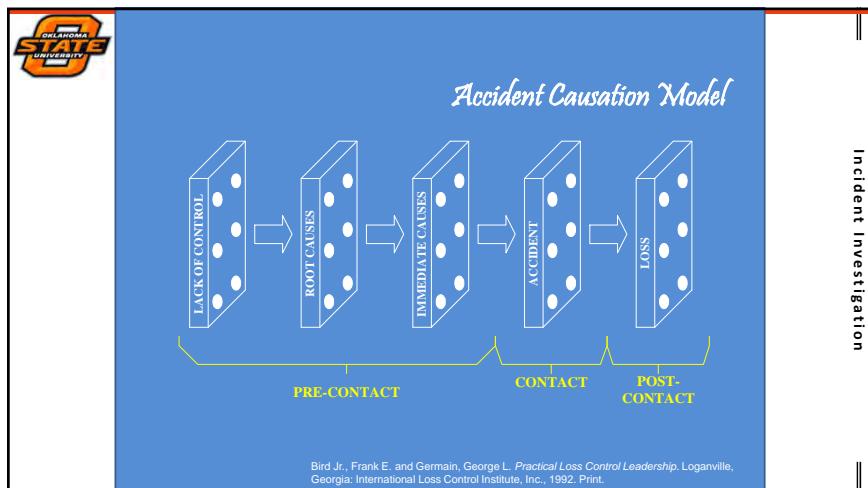
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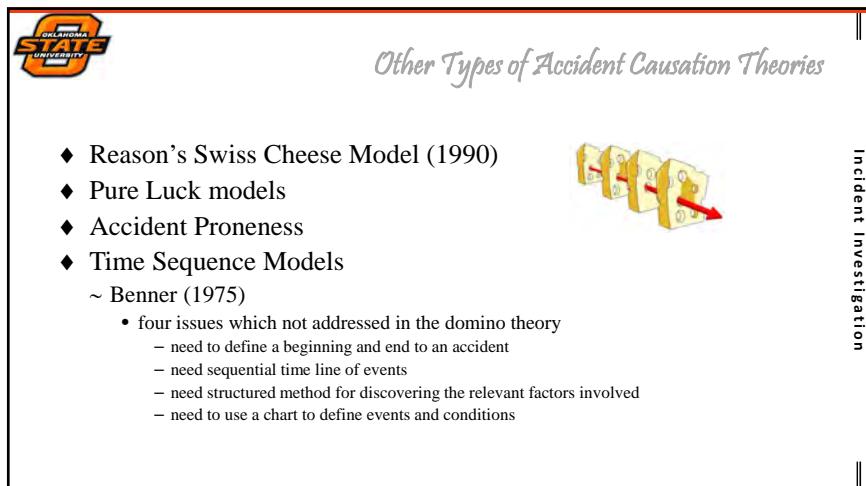
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Other Types of Accident Causation Theories

- ◆ Systems Theoretic Accident Model and Process (STAMP)
 - ~ "interrelated components that are kept in a state of dynamic equilibrium by feedback loops of information and control"
 - Leveson, N. (2004). A new accident model for engineering safer systems. *Safety Science*, 42, 237-270.
 - ~ safety management systems are required to continuously control tasks
 - ~ why did controls fail to detect or prevent changes that lead to an accident
- ◆ Functional Resonance Accident Model (FRAM)
 - ~ three dimensional
 - ~ systems are human error tolerant
 - ~ "forces (being humans, technology, latent conditions, barriers) do not simply combine linearly thereby leading to an incident or accident"
 - Hollnagel, E. (2004). *Barriers and Accident Prevention*: Aldershot:Ashgate.,

Incident Investigation

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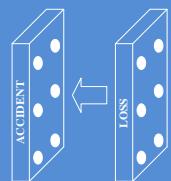
Incident Investigation is simply standing the dominos up backwards one at a time and asking "why" they fell.

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Incident Investigation

- ◆ Describe the incident in detail including body positioning and the points in time where contact occurred. Be detailed and specific. Ask lots of questions.



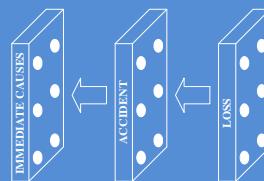
Incident Investigation

23



Incident Investigation

- ◆ Ask "Why was there contact" to identify unsafe behaviors of both directly and indirectly involved employees as well as unsafe conditions.



Bird Jr., Frank E. and Germain, George L. *Practical Loss Control Leadership*. Loganville, Georgia: International Loss Control Institute, Inc., 1992. Print.

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Immediate Causes - Indirect Causes - Causal factors- Symptoms

- ◆ Unsafe/Substandard Acts/Practices
 - ~ Operating equipment without authority
 - ~ Failure to warn
 - ~ Failure to secure
 - ~ Operating at improper speed
 - ~ Making safety devices inoperable
 - ~ Removing safety devices
 - ~ Using defective equipment
 - ~ Using equipment improperly
 - ~ Failing to use PPE
 - ~ Improper Loading
 - ~ Improper Placement
 - ~ Improper Lifting
 - ~ Improper position for task
 - ~ Servicing equipment in operation
 - ~ Horseplay
 - ~ Under the influence of a substance

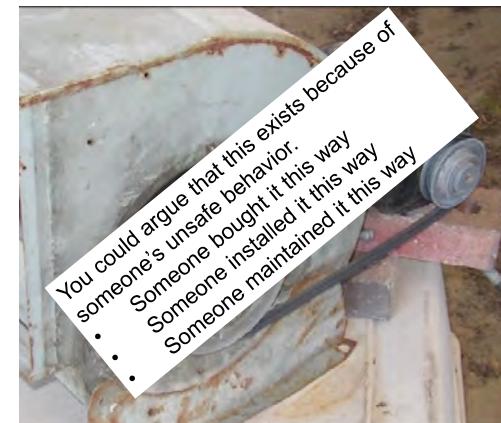
- ◆ Unsafe/Substandard Conditions
 - ~ Inadequate guards or barriers
 - ~ Inadequate or improper protective equipment
 - ~ Defective Tools, equipment or materials
 - ~ Congestion or restricted action
 - ~ Inadequate warning systems
 - ~ Fire and Explosion hazards
 - ~ Poor housekeeping, disorderly workplace
 - ~ Hazardous Environmental Conditions
 - ~ Noise Exposures
 - ~ Radiation Exposures
 - ~ Hi/Lo temperature exposures
 - ~ Inadequate or excessive illumination
 - ~ Inadequate ventilation

Incident Investigation

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Unsafe Conditions



Incident Investigation

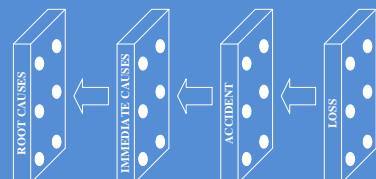
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Incident Investigation

- ◆ Ask “Why?” again to identify personal and job factors that led to the employee(s) performing the unsafe behavior or creating the unsafe condition.

Incident Investigation



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Personal Factors cause unsafe behaviors



Incident Investigation

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Oklahoma State University

Job Factors cause unsafe conditions

Inadequate Maintenance
Wear and Tear
Inadequate Tools and Equipment
Inadequate Engineering

Incident Investigation

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Oklahoma State University

Root Causes

Incident Investigation

- ◆ Personal Factors
 - ~ Inadequate Physical/Physiological Capability
 - ~ Physical or Physiological Stress
 - ~ Inadequate Mental/Psychological Capability
 - ~ Mental or Psychological Stress
 - ~ Lack of Knowledge
 - ~ Lack of Skill
 - ~ Improper Motivation
- ◆ Job Factors
 - ~ Inadequate Leadership and/or Supervision
 - ~ Inadequate Tools and Equipment
 - ~ Inadequate Work Standards
 - ~ Inadequate Engineering
 - ~ Inadequate Purchasing
 - ~ Wear and Tear
 - ~ Inadequate Maintenance
 - ~ Abuse or Misuse

Bird Jr., Frank E. and Germain, George L. *Practical Loss Control Leadership*. Loganville, Georgia: International Loss Control Institute, Inc., 1992. Print.

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Oklahoma State University

Personal Factors

Incident Investigation

Inadequate Physical/Physiological Capability	Inadequate Mental/Psychological Capability
<ul style="list-style-type: none"> - inappropriate height, weight, size, strength, reach, etc. - muscle fatigue - limited ability to sustain body positions - substance sensitivities or allergies - sensitivity to environmental extremes (temperature, sound, etc.) - vision deficiency - hearing loss - other sensory deficiency (touch, taste, smell, balance) - temporary physical disabilities - other permanent physical disabilities - temporary disabilities 	<ul style="list-style-type: none"> - fears and phobias - emotional instability - mental illness - lack of self-confidence - inability to comprehend - poor coordination - slow reaction time - slow rate of cognitive development - low learning aptitude - low intelligence
Mental or Psychological Stress	Improper Motivation
<ul style="list-style-type: none"> - fatigue due to mental task load or speed - cognitive processing demands - routine, monotony, demand for unremitting vigilance - extreme concentration demands - "dangerous" or "dangerizing" demands - conflicting directions - conflict of interest - preoccupation with problems - mental illness 	<ul style="list-style-type: none"> - improper performance is rewarding - proper performance is punishing - lack of incentives - lack of recognition - inappropriate aggression - inappropriate avoidance - improper attempt to avoid discomfort - improper attempt to gain attention - improper attempt to gain status - improper attempt to gain power - inadequate reinforcement of proper behavior - reinforcement of undesirable behavior
Lack of Knowledge	
<ul style="list-style-type: none"> - lack of experience - inadequate orientation - inadequate initial training - inadequate continuing training - misunderstood directions 	
Lack of Skill	
<ul style="list-style-type: none"> - inadequate initial instruction - inadequate practice - inadequate performance - lack of training 	

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Oklahoma State University

Job Factors

Incident Investigation

Inadequate Leadership and/or Supervision	Inadequate Engineering
<ul style="list-style-type: none"> - unclear or conflicting reporting relationships - unclear or ambiguous job responsibilities - unclear or ambiguous authority and accountability - improper or ineffective delegation - giving unclear, ambiguous, or conflicting practices or guidelines - giving improper goals or standards that conflict - giving unclear instructions - inadequate instructions, orientation and/or training - providing inadequate relevant documents, directions and guidance/publication - giving unclear or ambiguous performance expectations - lack of supervisory management job knowledge - lack of supervisory management job skills and job/task requirements - inadequate performance measurement and evaluation - giving unclear or ambiguous feedback 	<ul style="list-style-type: none"> - inadequate assessment of loss exposures - inadequate consideration of human factors ergonomics - inadequate consideration of operational design criteria - inadequate monitoring of structural integrity - inadequate monitoring of equipment - inadequate monitoring of site operations - inadequate monitoring of site conditions
Inadequate Purchasing	Wear and Tear
	<ul style="list-style-type: none"> - inadequate specification on requisitions - inadequate research on materials/equipment - inadequate selection of equipment - inadequate mode or method of shipment - inadequate communication of safety and health data - inadequate storage of materials - inadequate handling of materials - inadequate maintenance of materials - inadequate disposal of materials - inadequate storage and/or handling of materials - improper storage or waste disposal
Inadequate Tools and Equipment	Inadequate Maintenance
<ul style="list-style-type: none"> - inadequate assessment of need and risks - inadequate selection of tools and equipment - inadequate tool and equipment considerations - inadequate standards of specification - inadequate tool and equipment maintenance - inadequate adjustment/repair/maintenance - inadequate salvage and reconditioning - inadequate replacement of unusable items 	<ul style="list-style-type: none"> - inadequate prevention - inadequate identification - lubrication and servicing - cleaning or reworking - repair and replacement - communication of needs - identification of use - examination of units - identification of parts - use for wrong purpose
Inadequate Work Standards	Abuse or Misuse
<ul style="list-style-type: none"> - inadequate development of standards - unclear or ambiguous standards - lack of communication of standards and tools - coordination with process design - safety standards - incomplete standard procedures - incomplete implementation of standards - publication - distribution - communication of appropriate languages - translating job titles, color codes and job aids - training of workers - tracking of work flow of standards - updating of standards - monitoring use of standards/procedures/tools 	<ul style="list-style-type: none"> - committed by supervisor - committed by employee - not conducted by supervisor - unauthorized

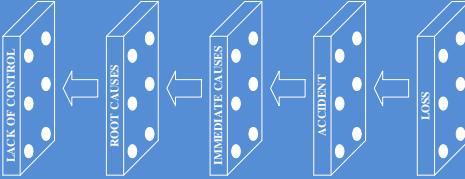
Bird Jr., Frank E. and Germain, George L. *Practical Loss Control Leadership*. Loganville, Georgia: International Loss Control Institute, Inc., 1992. Print.

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 *Incident Investigation*

- ◆ Ask "Why?" again to identify points where control was lost (inadequate programs, inadequate standards, and/or inadequate compliance to them).



Bird Jr., Frank E. and Germain, George L. *Practical Loss Control Leadership*. Loganville, Georgia: International Loss Control Institute, Inc., 1992. Print.

Incident Investigation

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 Lack of Control – Management System Failures
Inadequate Programs, Inadequate Standards, and/or
Inadequate Compliance to Them

- ◆ Leadership and Administration
- ◆ Management Training
- ◆ Planned Inspections
- ◆ Task analysis and procedures
- ◆ Incident Investigation
- ◆ Job Hazard Analysis
- ◆ Emergency Preparedness
- ◆ Personal Protective Equipment
- ◆ Health Controls
- ◆ Program Evaluations
- ◆ Hazard ID and Controls
- ◆ Employee engagement
- ◆ Employee Training

Incident Investigation

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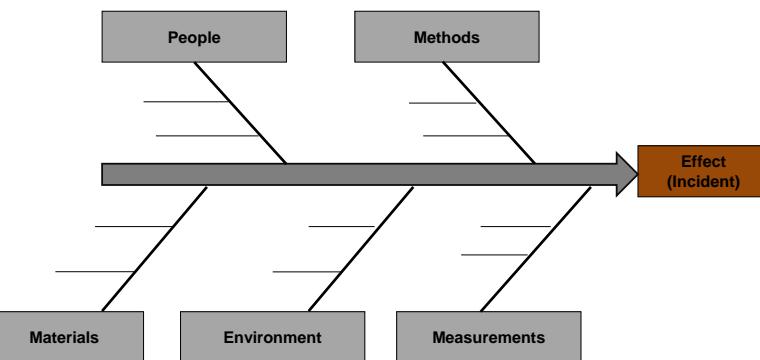
 *Fishbone Diagram (aka Ishikawa Diagram)*

- ◆ Allows for brainstorming
- ◆ Categorizes many potential causes into orderly groups

Incident Investigation

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 *Fishbone Diagram (aka Ishikawa Diagram)*

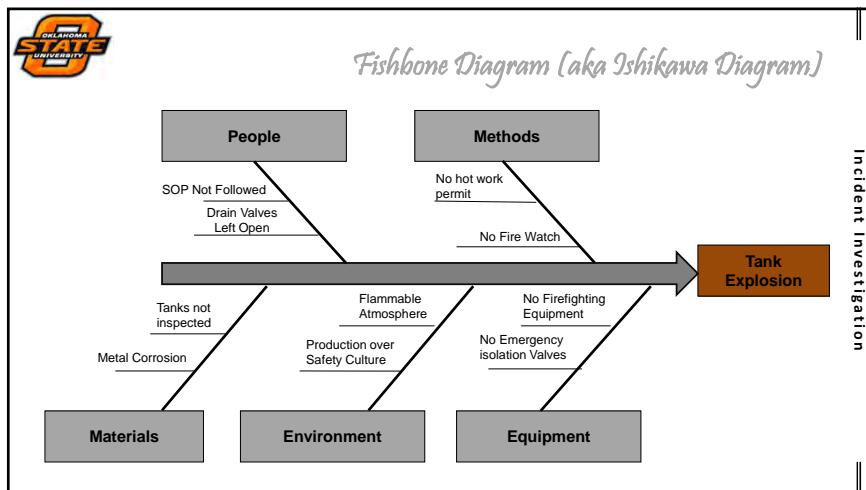


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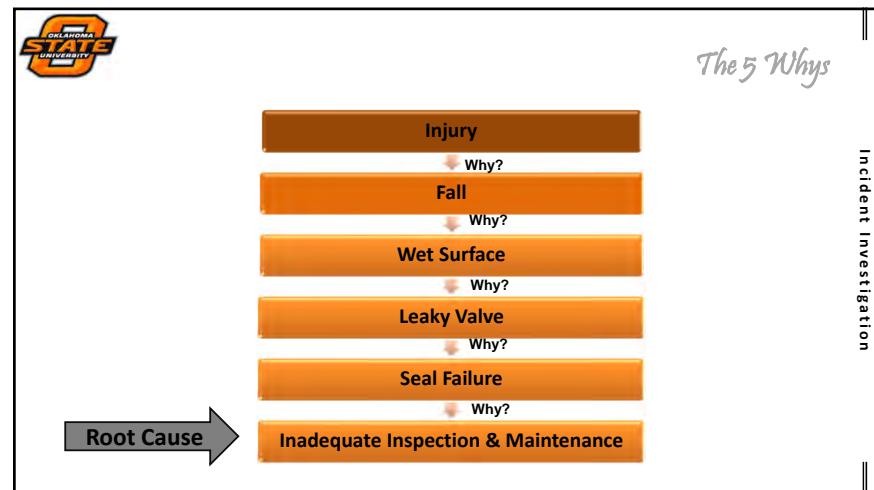
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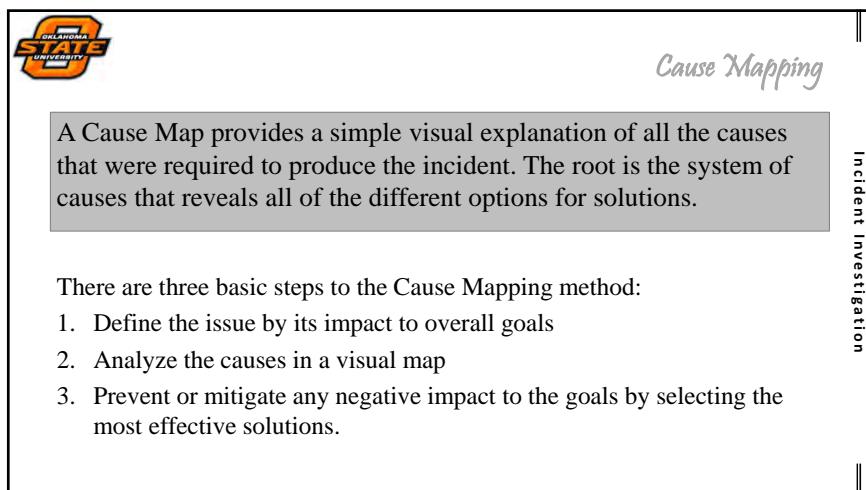
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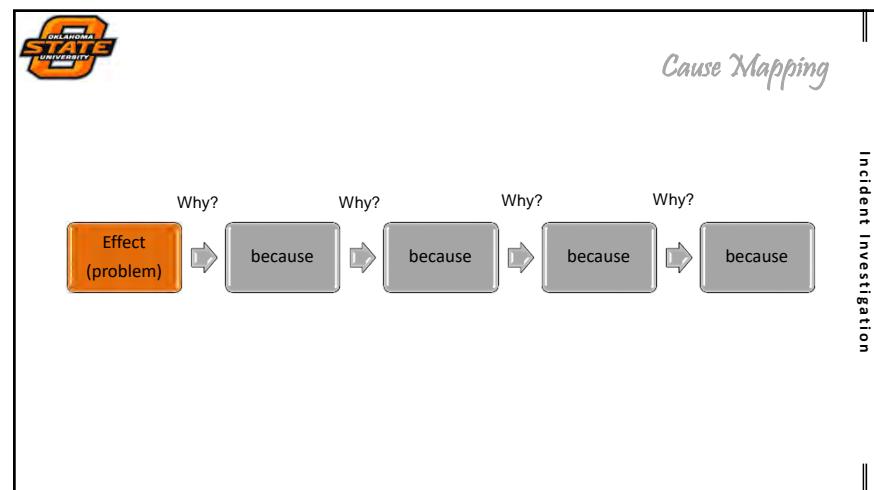
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Case Study - Cause Mapping

While placing material into a storage box, an employee inadvertently struck the storage box lid's locking mechanism which caused the lid to close. The lid fell and struck the employee on the hand causing a laceration.

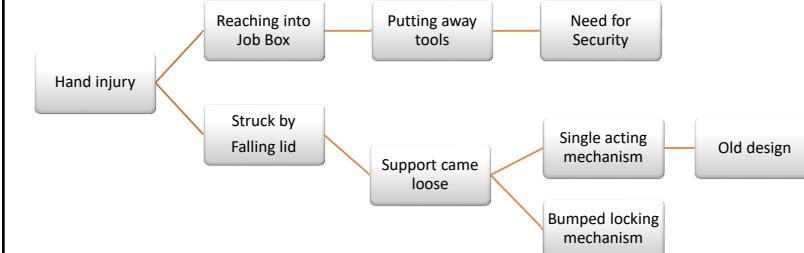


41

Incident Investigation



Cause Map



42

Incident Investigation

41



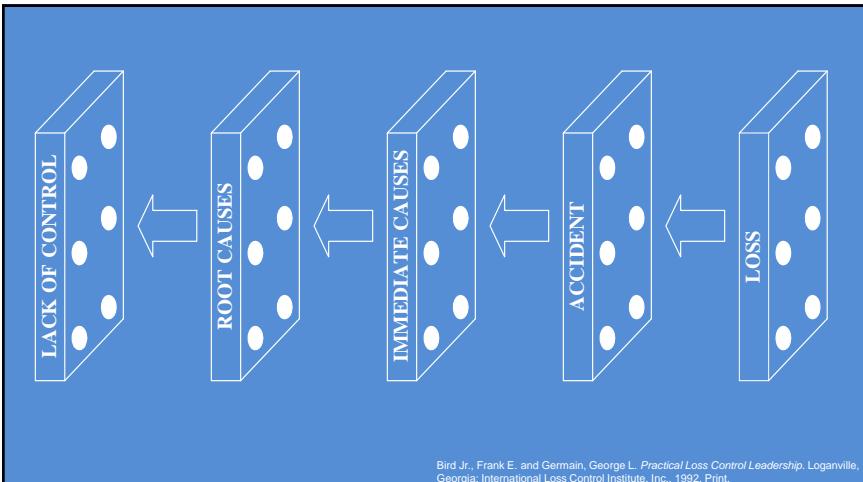
Complex Cause Mapping – the Titanic



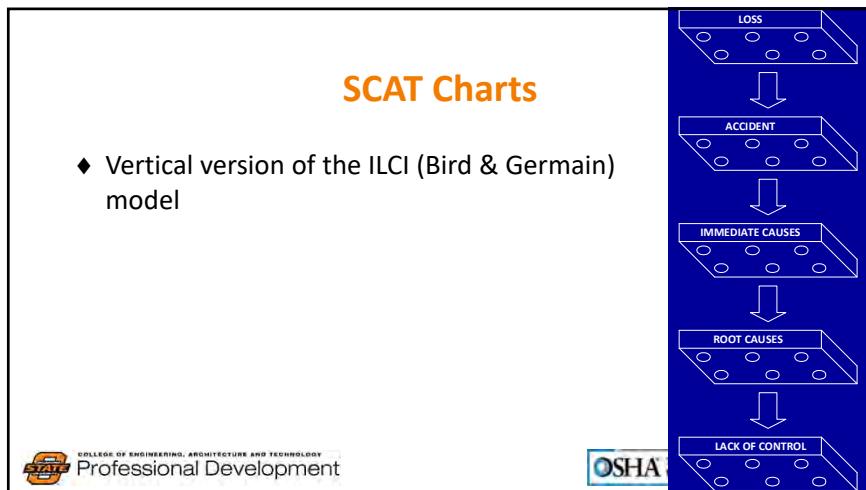
Watch video: Cause Mapping – the Titanic

Incident Investigation

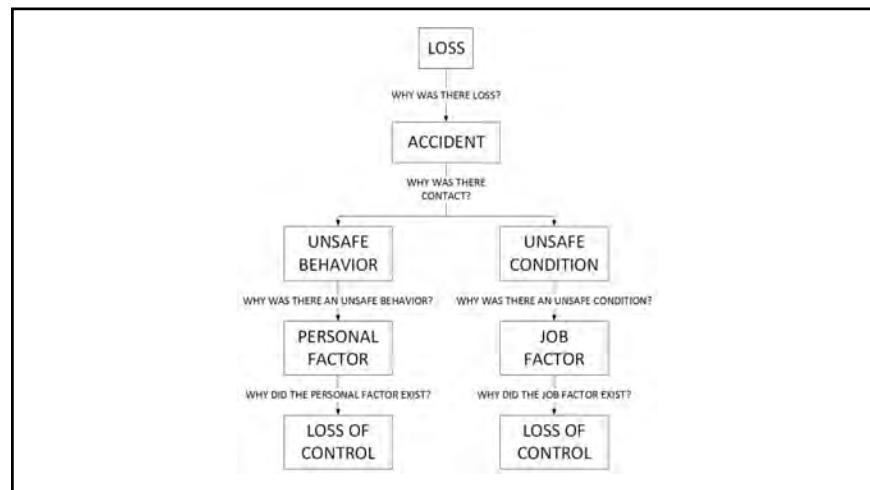
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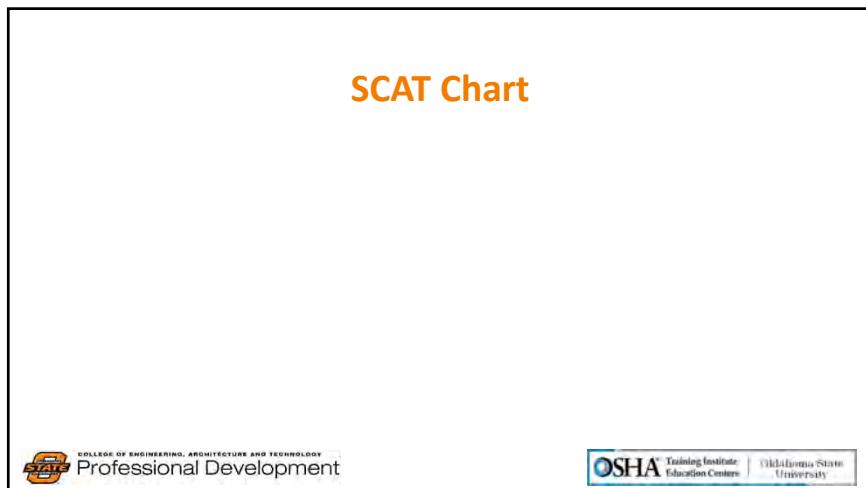
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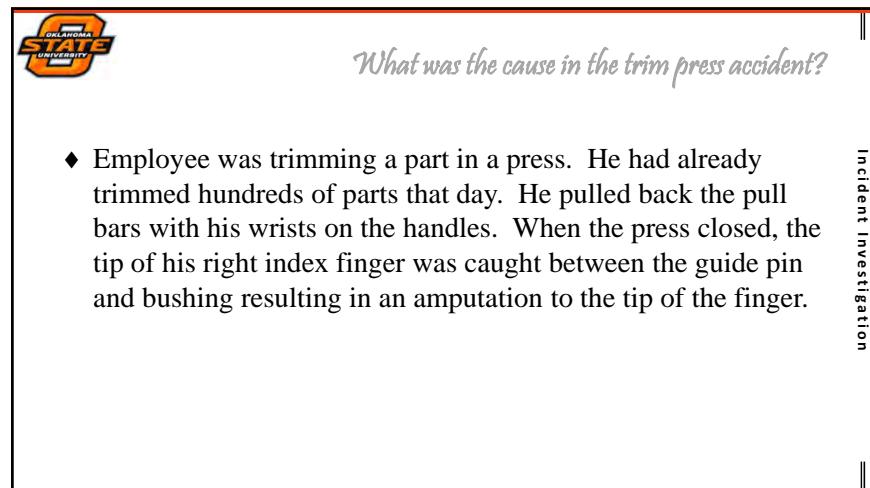
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46



47



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 Fingertip amputation



Incident Investigation

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 Fingertip amputation
WHY?



Incident Investigation

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 Fingertip amputation
WHY?
Caught finger between guide pin and bushing



Incident Investigation

51

 Fingertip amputation
WHY?
Caught finger between guide pin and bushing
WHY?

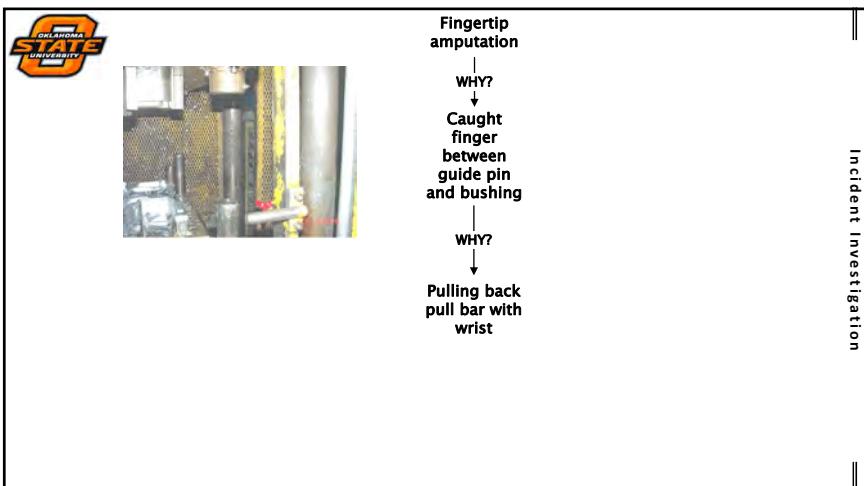


Incident Investigation

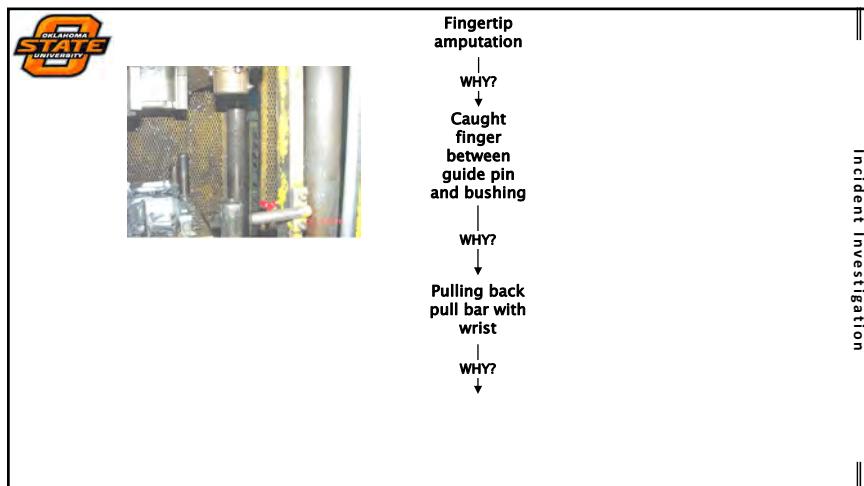
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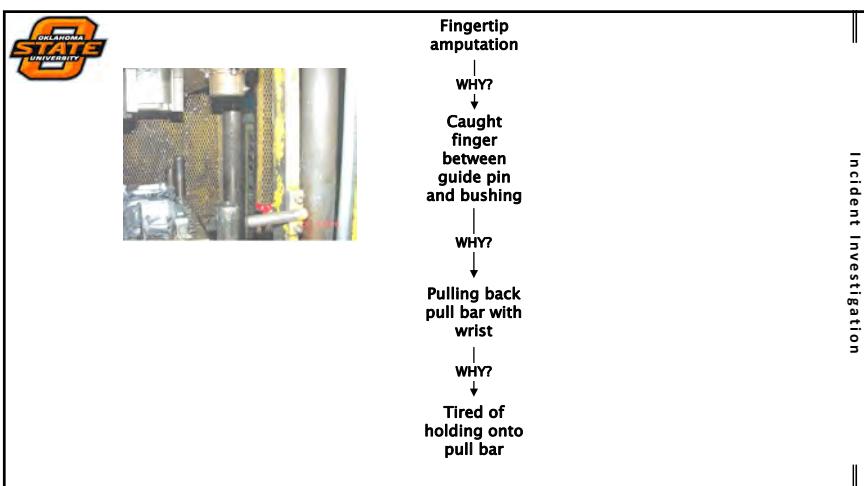
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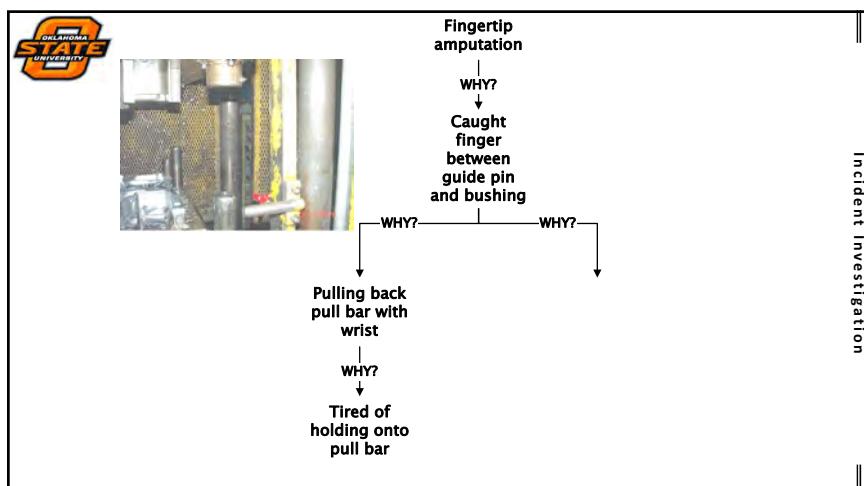
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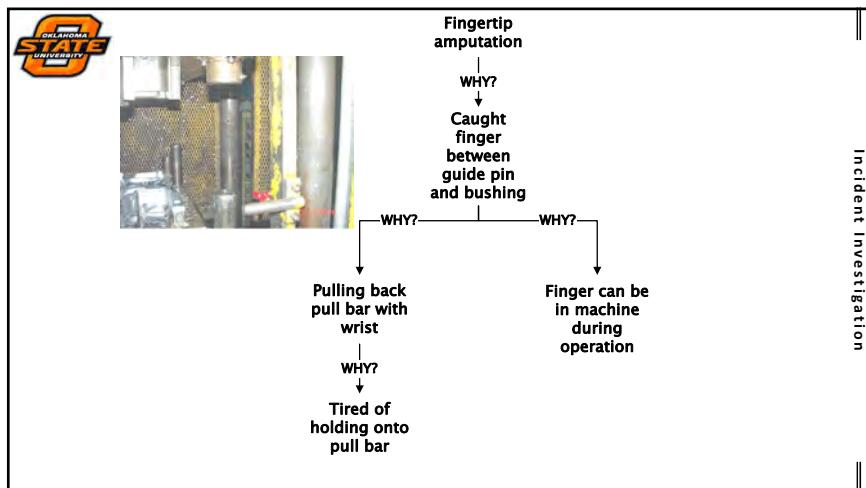
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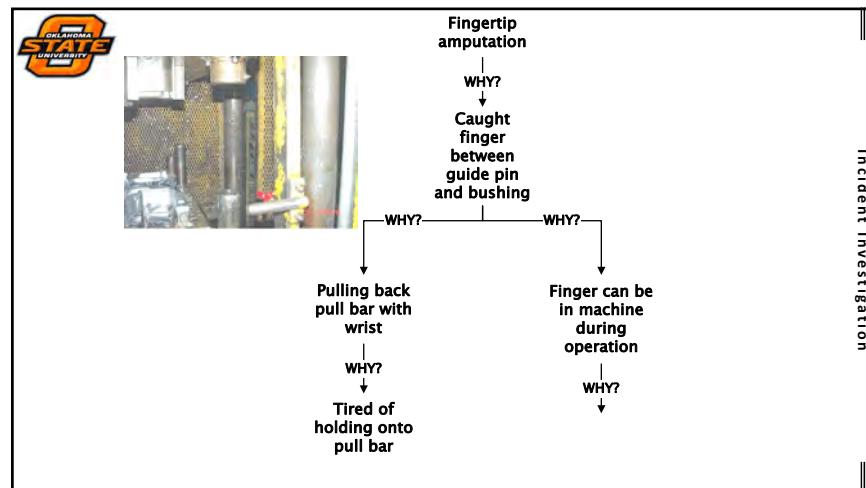
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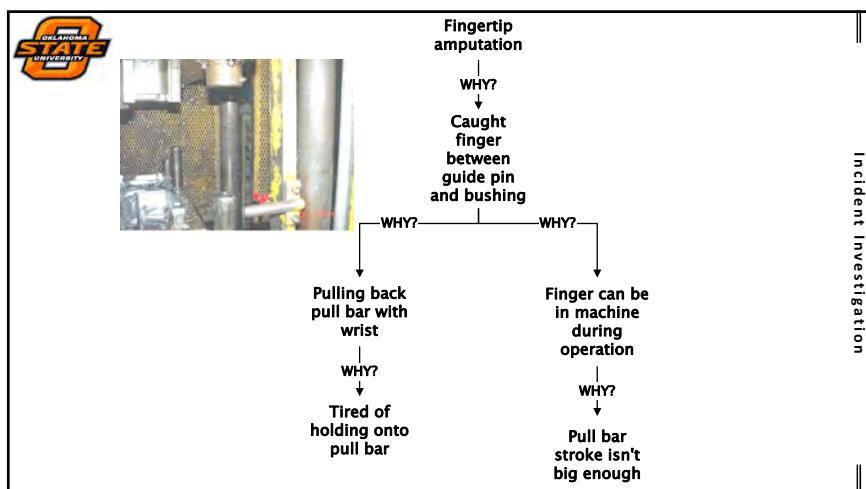
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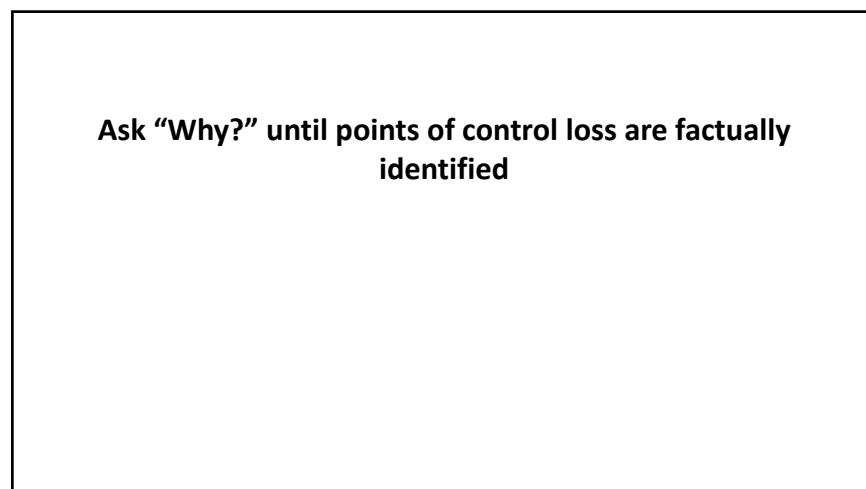
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58



59



60



The Incident Investigation System

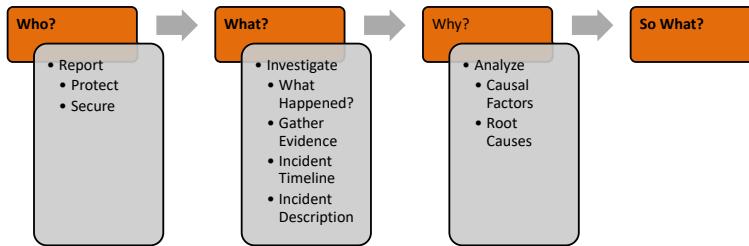
Levels of Investigation

Level of Incident	Severity	Type of Investigation
Minor	First Aid Injury, Minor property damage less than \$1000.	1-2 person team, usually supervisor.
Major	Medical treatment Injury, major damage, process upset, \$1K>\$10K loss.	2-4 person team, may need to use analytical techniques and subject matter experts.
Severe	Lost Workday Injury, Severe property damage or process upset, \$10K>\$100K loss.	2-4 person team, use analytical techniques, subject matter experts,
Catastrophic	Fatality, Hospitalization, total loss of facility or process, greater than \$100K property damage or loss.	Full team. May need 3 rd party expertise. May involve regulatory intervention. Use multiple analytical techniques and subject matter experts. Legal protection may be necessary.
Near Miss	No actual injury, damage, or loss. But strong potential for loss.	Variable depending on potential severity of event. See incident levels above.

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The Incident Investigation Process

Phases of Incident Investigation



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FPST 3013 – SAFETY MANAGEMENT THE INCIDENT INVESTIGATION PROCESS

Lecture 7

Accident Causation Models and Root Cause Analysis

63



FPST 3013 – SAFETY MANAGEMENT THE INCIDENT INVESTIGATION PROCESS

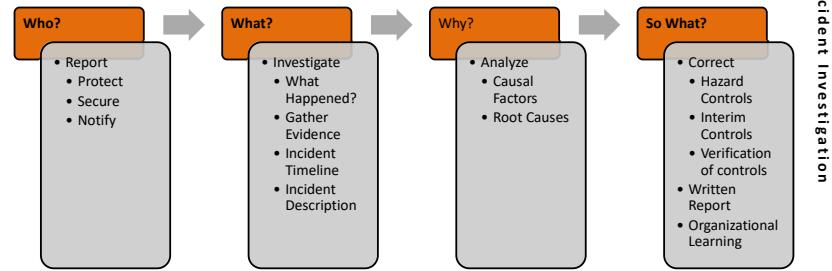
Lecture 8
Corrective Actions
Cause Determination Practice

1

INCIDENT INVESTIGATION REPORT

3

Phases of Incident Investigation



2

- 
- The Incident Investigation Process*
- Incident Investigation Report*
- ♦ Incident Investigation Report should include
- ~ Incident description
 - ~ Timeline, sequence of events, or STEP diagram
 - Sequential Timed Event Plot
 - ~ Incident Data Gathered
 - *The 4 P's*
 - Physical, People, Paper, Photos
 - ~ Immediate cause lists
 - ~ Root cause lists
 - ~ Root cause analysis documents (optional)
 - ~ Corrective action tracking

4



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Incident Investigation Written Report

Incident Investigation Report			
Date/Time:		Location:	
Nature of Loss:		Type of Injury:	
Task Performing:			
Incident Description			
Causal Factors			
Corrective Actions			
Investigated by:		Date:	

Incident Investigation



Writing the Report

Incident Investigation

- ◆ Avoid using names if possible, use job titles
 - ~ Collect witness statements
 - This can be done with or without the involved employee present
 - ~ Use the checklist method
- ◆ Cause Analysis
 - ~ Methodology used (5 Why, SCAT, Cause map, Fishbone, etc.)
 - Break facts into topic areas (fishbone diagram)
 - ~ List all root causes and points where control was lost

7

5



Writing the Report

Incident Investigation

- ◆ Description
 - ~ Tell what you have decided actually happened in detail. Don't assume or guess. Prove what you say.
- ◆ Avoid opinion, subjective conclusions or assumptions
- ◆ Avoid language that assigns blame
- ◆ Write in an easy to follow style (3rd person POV, active voice)
 - ~ The report was written by the Safety Manager
 - ~ The Safety Manager wrote the report

6

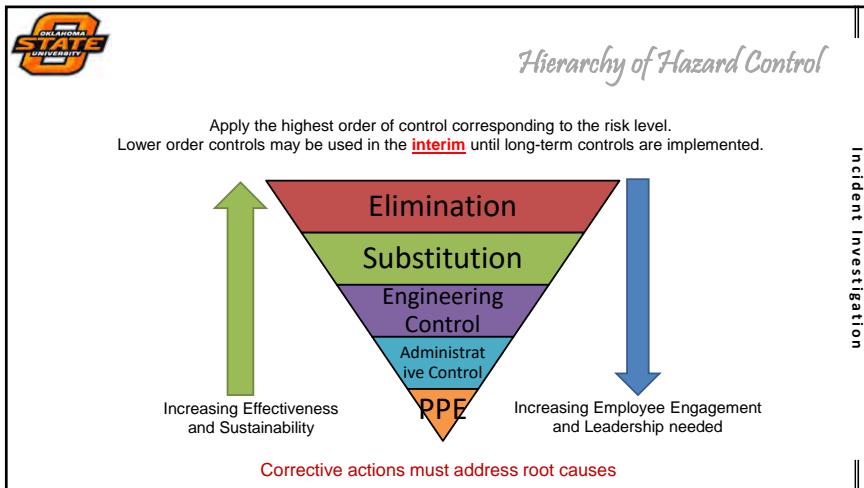
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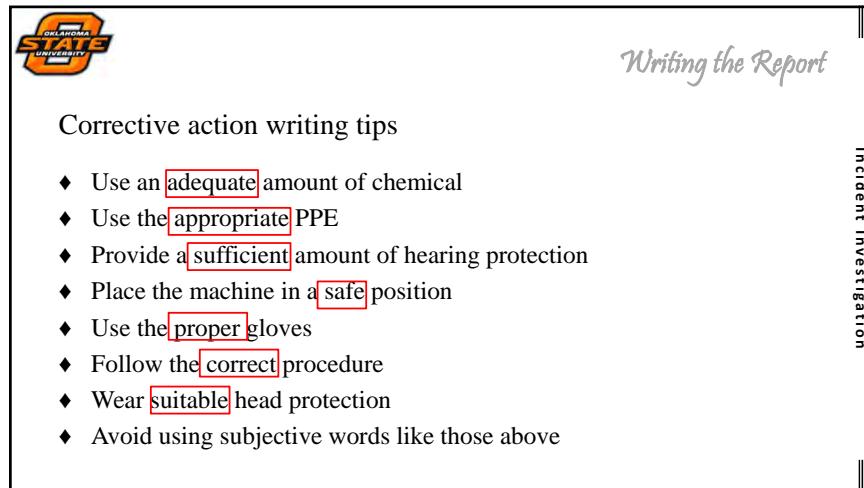
LEARNING FROM INCIDENTS

"On the occasion of every accident that befalls you, remember to turn to yourself and inquire what power you have for turning it to use."

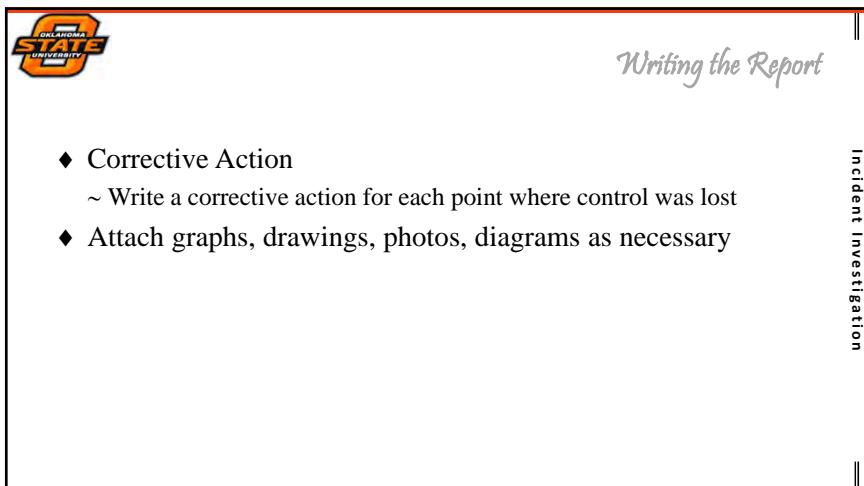
Epictetus, 0055 – 0135



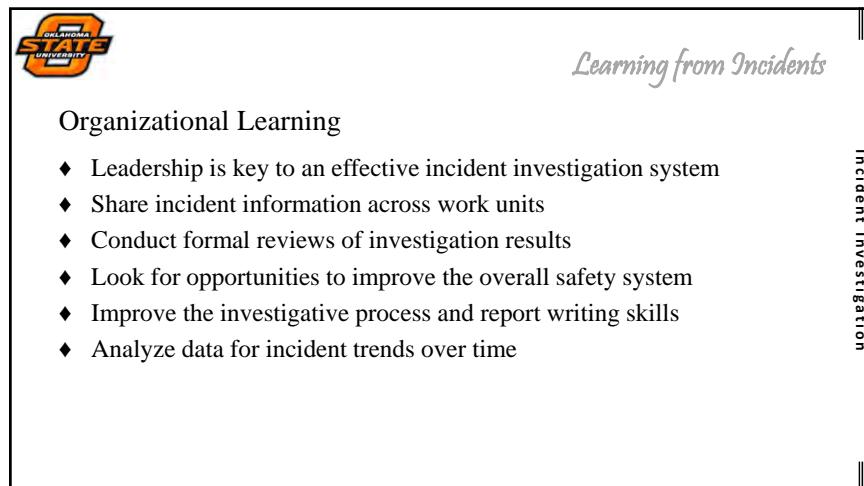
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11



10



12



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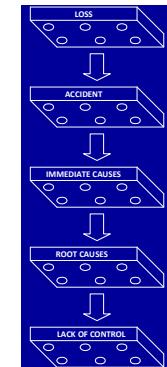
Document Retention and Protection

- ◆ Procedure should outline how documentation will be stored and for how long
 - ~ Some regulatory requirements exist, check AHJ
 - OSHA 300 logs of Work Related Injuries – current year +5 years
 - DOT Commercial Vehicle Incident Logs – 3 years
 - PSM Incident Investigations – 5 years
 - Specific to 29 CFR 1910.119

Incident Investigation



SCAT Charts



Incident Investigation

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Accident Investigation

Incident Investigation

Cause Determination Practice



Incident Investigation

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14



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Investigation Practice

~ Interview

- Write 2 questions you have for this person

~ Written description

- Bullet list

~ Causes

~ Corrective Actions



Incident Investigation

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Written Description

♦ Employee was grinding on the side of a building on the top of a scaffolding surface 30 feet above the ground. No guardrails were installed around the area where the Employee was working and the Employee was not wearing any fall protection. The Employee was exposed to falling to the ground resulting in serious injury or death.

Incident Investigation

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Bullet List

♦ Employee grinding on the side of a building

♦ Employee is working on the top scaffolding surface 30 feet above the ground and is exposed to falling to the ground

♦ No guardrails are installed on the surface the employee is working on

♦ Employee is not wearing any fall protection

Incident Investigation

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Cause Tree

```
graph TD; A[Employee can fall] --> B[No fall protection installed]; B --> C[guard rails not available]; C --> D[Inadequate Compliance]; C --> E[Inadequate Program]; D --> F["He knew the requirement but chose to do the work without the guard rails"]; E --> G[Loss of Control]; E --> H[equipment inspection process]
```

Incident Investigation

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forklift driver

Example #2

Incident Investigation

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Good Description?

- ◆ Forklift hit shelf and shelf collapsed
- ◆ Not a good description

Incident Investigation

22



Good Description?

- ◆ Forklift operator was traveling through aisle carrying a stack of wood. It hit a shelf leg causing the shelf to collapse
- ◆ Not a good description

Incident Investigation

23



Use a Bullet List

- ◆ Forklift operator driving through aisle
- ◆ Carrying 4 x 8 wooden panels.
- ◆ Panels are not straight on forks
- ◆ High rack storage on right, drum storage on left
- ◆ Aisle is narrow
- ◆ Corner of the wood stack hit high rack storage leg
- ◆ High rack storage shelves collapsed
- ◆ No injury

Incident Investigation

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Good Description?

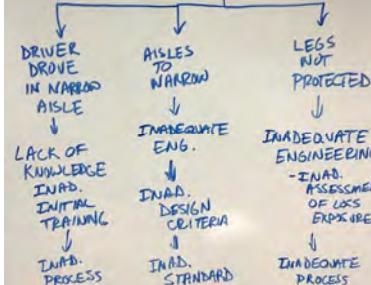
- ◆ The forklift operator was driving the forklift east through the aisle carrying a stack of 4 x 8 wooden panels. The operator was driving through a narrow area created because there are too many drums being stored too close to the high rack storage. A corner of the wood stack he was carrying hit one of the high rack storage legs because the panels were not straight on his forks. The high rack storage shelves collapsed.
- ◆ Not a good description. Includes causes

Incident Investigation



DAMAGED
PRODUCT

SHELVES
COLLAPSED



Incident Investigation

25

27



Good Description?

Incident Investigation

- ◆ The forklift operator was driving the forklift through the aisle carrying a stack of 4 x 8 wooden panels. The panels were not stacked straight on his forks. The operator drove through an area where high rack storage was on his right and drum storage was all his left. He proceeded through a narrow area between the racks and the drums where clearance was very limited. A corner of the wood stack he was carrying hit one of the high rack storage legs and the high rack storage shelves collapsed. The forklift operator quickly exited the vehicle and escaped without injury.
- ◆ Good description



Example #3

Checking Tanker Truck

Incident Investigation

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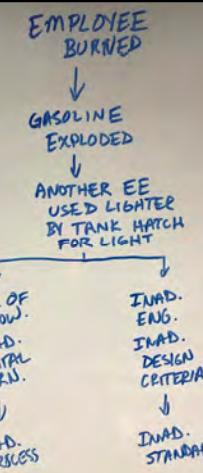
Bullet List

- ◆ Truck driver tries to pull into parking spot
- ◆ Driver Backs up
- ◆ Driver Pulls in next to parking spot
- ◆ Driver Backs up
- ◆ Injured employee tells driver to relocate truck
- ◆ Driver pulls past designated parking spot and parks truck
- ◆ Injured employee climbs up the back of truck
- ◆ Injured employee looks into hatch on top of truck
- ◆ Injured employee reaches into pocket
- ◆ Explosion happens
- ◆ Injured employee falls off truck and is burning

Incident Investigation



Point of fact:
Employee pulled
cigarette lighter out
of pocket



Incident Investigation

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Good Description?

Incident Investigation

- ◆ A truck driver was delivering a tanker of gas to a gas station. When he initially pulled into the loading station he made his turn incorrectly, backed up, and then pulled in. The injured employee instructed him to back up and pull into the designated parking space. After the truck driver did so and parked the truck, the injured employee climbed up the back of the truck and looked into a tank hatch for reasons unknown. With the hatch open, he reached into his left coat pocket and pulled out something and an explosion occurred, caught him on fire and knocked him off of the truck down to the ground. Bystanders immediately came to his assistance.
- ◆ This is a good written description



Example #4

anyone missing a tire

Incident Investigation

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Bullet List

- ◆ Injured employee exits the driver seat of car
- ◆ Walks around rear of car
- ◆ Opens gas cap on back right of car
- ◆ Takes gas pump nozzle and inserts into fuel tank
- ◆ Injured employee standing at back of vehicle by gas nozzle fueling car
- ◆ Dually tires roll from across the street and strike employee in the back of the legs resulting in injury
- ◆ Bystander immediately comes to his assistance

Incident Investigation



Good example of where, even though there is a video of the event, there are too many unknowns to complete a full cause tree

MULTIPLE INJURES
↓
HIT BY DUALLY TIRE
↓
TIRE CAME OF PASSING VEHICLE
↓
INADEQUATE PREVENTATIVE ADJUST/ASSEMBLY
↓
INAP. PROCESS

Incident Investigation

33

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Good Description?

- ◆ Injured employee had pulled his vehicle into a gas station to refuel. He exited the driver's seat, walked around the rear of his vehicle to the back right and opened his gas cap. He took the fuel nozzle from the pump and inserted it into his car and began refueling. While the car was fueling, he stood at the back right of the vehicle between the vehicle and the gas pump with his back facing the street. A set of dually tires came rolling across the street and struck him in the back of the legs knocking him to the ground and resulted in injury. Bystanders immediately came to his assistance.
- ◆ This is a good written description

Incident Investigation



A02 - Incident Investigation

Incident Investigation

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*FPST3013 - Safety Management
The Incident Investigation Process*

Lecture 8
Corrective Actions

Incident Investigation



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FPST 3013
Safety Management

Injury Recordkeeping Rules

1

OSHA Training Institute Education Centers | Oklahoma State University

INJURY AND ILLNESS REPORTING AND RECORDKEEPING

OSHA #7845 Recordkeeping Rule Seminar

Office Of PROFESSIONAL DEVELOPMENT
College of Engineering, Architecture & Technology
CEATPO.OKSTATE.EDU | (405) 744-5714

2

29 CFR Part 1904

Recording and Reporting
Occupational Injuries and Illnesses

3



OSHAct

- ♦ Section 8(c)(1) develop regulations requiring employers to keep and maintain records regarding the causes and prevention of occupational injuries and illnesses.



4

OSH Act

- ♦ Section 8(c)(2) of the Act requires OSHA to issue regulations requiring employers to
- ♦ " maintain accurate records of, and to make periodic reports on, work-related deaths, injuries and illnesses other than minor injuries requiring only first aid treatment and which do not involve medical treatment, loss of consciousness, restriction of work or motion, or transfer to another job."



5

OSHAct

- ♦ Section 24(a) of the Act requires the Secretary to develop and maintain an effective program of collection, compilation, and analysis of occupational safety and health statistics.



6



History of Recordkeeping

- ◆ From 1971 to 2001 OSHA and the Bureau of Labor Statistics (BLS) operated the recordkeeping system as a cooperative effort.
- ◆ July 11, 1990, BLS nationwide statistical compilation of occupational illnesses and injuries
 - ~ Annual Survey of Occupational Injuries and Illnesses
 - ~ Blue Book
- ◆ 2001 Significant Revisions to 29 CFR 1904
 - ~ Medical treatment vs first aid
 - ~ Restricted duty and lost workday
 - ~ Injury vs illness
 - ~ 200 log changed to 300 log
- ◆ 2015 – Reporting of Fatalities, Amputations, Hospitalizations
- ◆ 2017 - Electronic Reporting requirement
 - ~ Report all injuries to a govt website – Public access
 - ~ Lawsuits
- ◆ 2018-19 - More Revisions
 - ~ [January 24, 2019](#)

7

Criticism of Recordkeeping Rule

- ◆ Definitions of Medical Treatment vs first aid unclear
- ◆ Employers intentionally under record injuries and illnesses because:
 - ~ in response to OSHA inspection policies
 - ~ Pressure from management safety competitions
 - ~ they do not understand the system
 - ~ they do not place a high priority on recordkeeping
 - ~ they do not supervise their recordkeepers properly

8

1904.30 – Multiple Business Establishments

- ◆ Keep a separate OSHA Form 300 for each establishment that is expected to be in operation for more than a year
- ◆ May keep one OSHA Form 300 for all short-term establishments
 - ~ those expected to be in operation less than one year)
- ◆ Each employee must be linked with one establishment
- ◆ An employer with multiple lines of business may have some exempt and some covered establishments

9



1904.31 – Covered Employees

- ◆ Employees on payroll
- ◆ Temporary employees not on payroll who are supervised on a day-to-day basis
- ◆ Exclude self-employed and partners

10

1904.33 – Retention and Updating

- ◆ Retain forms for the current year plus five years (current +5)
- ◆ Update the OSHA Form 300 during that period with status changes
- ◆ Need not update the OSHA Form 300A or OSHA Form 301
- ◆ New Case Law: OSHA can only cite for recordkeeping violations within the last 6 months

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Case Law – US Court of Appeals DC District

- ◆ May 10, 2006, Volks Construction.
- ◆ Company had not kept OSHA records from January 11, 2002 to April 22, 2006.
- ◆ OSHA issued 171 citations
- ◆ \$13,300 in fines
- ◆ 54 months – 6 months plus 10 days, before the citations were issued
- ◆ Citations were deemed untimely

12



- ◆ Finally, the Court noted that Congress' aim in creating OSHA was to improve the safety of America's workplaces, and it must have believed this goal would be served by having OSHA enforce recordkeeping violations quickly.
- ◆ The Court observed, "Nothing in the statute suggests Congress sought to **endow this bureaucracy with the power to hold a discrete record-making violation over employers for years**, and then cite the employer long after the opportunity to actually improve the workplace has passed."

13

29 CFR Part 1904

- ◆ Recording and Reporting Occupational Injuries and Illnesses



14

What to Report?

- ◆ First Aid injuries
 - ~ No requirement to report to OSHA
- ◆ Injuries and illnesses beyond first aid
 - ~ Record on OSHA 300 log within 7 days
- ◆ Hospitalizations, amputations, loss of an eye
 - ~ Report to OSHA within 24 hours
- ◆ Fatalities
 - ~ Report to OSHA within 8 hours
- ◆ OSHA Forms



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**OSHA's Form 301
Injury and Illness Incident Report**

This **Injury and Illness Incident Report** is one of the best ways to keep track of all injuries and illnesses related to work that have occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the *Incident Report*, this form will help you and your employer and OSHA develop a picture of the exact cause of the injury or illness.

Within 7 calendar days after you receive information about an injury or illness, enter the injury or illness occurred. Some may require follow-up or re-reporting. Enter as soon as you become aware of any changes.

Some injuries and illnesses require specific medical attention. To be considered an occupational injury or illness, it must be work-related and must be reported on this form.

According to OSHA's 29 CFR 1904.30 and 29 CFR 1910.53, when recording a new case, you must keep that record for 3 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Attention: This form contains information relating to employee health and safety. It is important to protect the confidentiality of employees to the extent possible. If you are required to keep this form for occupational safety and health purposes,

U.S. Department of Labor
Occupational Safety and Health Administration
Form approved (OMB No. 1235-0275)

Information about the employee	
1. Job title _____	
2. Name _____	
3. Date _____	
4. Sex _____	
5. Date of birth _____	
<input type="checkbox"/> Male <input type="checkbox"/> Female	

Information about the physician or other health care professional	
6. Name of physician or other health care professional _____	
7. Physician's address _____	
8. Physician's phone number _____	

9. Physician's fax number _____	
10. Physician's email address _____	
11. Physician's office hours _____	

12. Physician's office address _____	
13. Physician's city _____	
14. Physician's state _____	
15. Physician's zip code _____	

16. Physician's phone number _____	
17. Physician's fax number _____	
18. Physician's email address _____	

19. Physician's office address _____	
20. Physician's city _____	
21. Physician's state _____	
22. Physician's zip code _____	

23. Physician's phone number _____	
24. Physician's fax number _____	
25. Physician's email address _____	

26. Physician's office address _____	
27. Physician's city _____	
28. Physician's state _____	
29. Physician's zip code _____	

30. Physician's phone number _____	
31. Physician's fax number _____	
32. Physician's email address _____	

33. Physician's office address _____	
34. Physician's city _____	
35. Physician's state _____	
36. Physician's zip code _____	

37. Physician's phone number _____	
38. Physician's fax number _____	
39. Physician's email address _____	

Information about the case	
40. Case number from the Log _____	
(Optional) Enter the case number from the Log again here _____	
41. Date of injury _____	
42. Time injury began _____ AM / PM	
43. Date of illness _____	
44. Time illness began _____ AM / PM	

45. Was the employee doing his/her regular job when the accident happened? If not, describe what he/she was doing, e.g., "cleaning a hallway while carrying cleaning materials," "splicing electric wire," "drill," "emptying hay bales," "etc."	
46. Was the employee doing his/her regular job when the employee was injured? If not, describe what he/she was doing, e.g., "emptying hay bales," "etc."	

47. Who suffered the injury? (List all the people who were affected and how it was affected.)	
48. Did the injury happen at work? If yes, describe where the injury happened, e.g., "workplace," "worksite," "workplace," "workplace," etc.	

49. What was the injury or illness? (List all the parts of the body that were affected and how it was affected; be more specific than "back," "pains," or sore." Examples: "strained back," "chemical burn," "cervical spine fracture," etc.)	
---	--

50. When did the injury or illness occur? (List the date the body part was affected or became ill.)	
---	--

51. How long did the injury or illness last? (List the date the body part was affected or became ill.)	
--	--

52. Was the injury or illness serious? (List all the parts of the body that were affected and how it was affected; be more specific than "back," "pains," or sore." Examples: "strained back," "chemical burn," "cervical spine fracture," etc.)	
--	--

53. Who caused or contributed to the injury or illness? (List all the parts of the body that were affected and how it was affected; be more specific than "back," "pains," or sore." Examples: "strained back," "chemical burn," "cervical spine fracture," etc.)	
---	--

54. Who treated the injury or illness? (List all the parts of the body that were affected and how it was affected; be more specific than "back," "pains," or sore." Examples: "strained back," "chemical burn," "cervical spine fracture," etc.)	
--	--

55. Who paid for the treatment? (List all the parts of the body that were affected and how it was affected; be more specific than "back," "pains," or sore." Examples: "strained back," "chemical burn," "cervical spine fracture," etc.)	
---	--

56. Who paid for the medical treatment? (List all the parts of the body that were affected and how it was affected; be more specific than "back," "pains," or sore." Examples: "strained back," "chemical burn," "cervical spine fracture," etc.)	
---	--

Public reporting burden for this collection of information is estimated to be 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information. An agency may request a copy of the burden estimate and associated reporting requirements from the Office of Information and Regulatory Affairs, Department of Labor, 200 Constitution Avenue, N.W., Washington, D.C. 20210. It does not contain any sensitive personal information.

16

17

Purpose (of the Rule)

- ◆ To require employers to record and report work-related fatalities, injuries and illnesses
 - ~ No determination of fault
 - ~ No admission of violation
 - ~ No correlation with workers' compensation
 - ~ It is ONLY a factual documentation that a work related injury/illness occurred that met the criteria of the standard.

18



Subpart B - Scope

- ◆ 1904.1 – Size Exemption
 - ◆ If the company had 10 or fewer employees at all times during the last calendar year,
 - ~ number of employees in the entire company
- ◆ Include temporary employees
 - ~ supervised on a day to day basis

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Subpart B – Scope

- ◆ 1904.2 - Industry Exemption
- ◆ [Appendix A lists partially exempt industries](#)
 - ~ Pipeline
 - ~ Transportation
 - ~ Retail
 - ~ Medical practices
 - ~ Dental Practices
 - ~ Gasoline Stations
 - ~ Day Care Centers

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Subpart B - Scope

- ◆ Partial Exemption
- ◆ Employers that are partially exempt from the recordkeeping requirements because of their size or industry must continue to comply with:
 - ~ 1904.39, Reporting **fatalities, amputations, the loss of an eye, or hospitalization**
 - ~ 1904.41-42, Annual **OSHA/BLS injury and illness survey** (if specifically requested to do so by OSHA/BLS.)

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1904.4 – Recording Criteria

- ◆ Covered employers must record each fatality, injury or illness that:
 - ~ is work-related, and
 - ~ is a new case, and
 - ~ meets one or more of the criteria contained in sections 1904.7 through 1904.11.

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OSHA INJURY AND ILLNESS RECORDKEEPING 5 STEP PROCESS



23

- Did the employee **experience an injury or illness?**
- Is the injury or illness **work-related?**
- Is the injury or illness a **new case?**
- Does the injury or illness meet the general criteria
or the application to specific cases?

RECORD THE INJURY OR ILLNESS

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STEP 1:
Did the employee **experience an injury or illness?**

Definition [1904.46]

An injury or illness is **an abnormal condition or disorder**. Injuries include cases such as, but not limited to, a cut, fracture, sprain, or amputation. Illnesses include both acute and chronic illnesses, such as, but not limited to, a skin disease, respiratory disorder, or poisoning.

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STEP 1:
Did the employee **experience an injury or illness?**

Scenario A:

A worker reports to nurses' station with complaint of painful wrists.
Employee given two Ibuprofen and returned to job.

YES

Why: Painful wrists was the injury experienced.

26

STEP 1:
Did the employee **experience an injury or illness?**

Scenario B:

There is a chlorine gas leak at XYZ establishment and the two employees in the area are rushed to the hospital. They are told to stay home the next day as a precautionary measure.

Answer: It depends !! We need more information.

Why: We need to know if either employee exhibited signs or symptoms of an injury/illness. If yes, then go to the next step.

If no, STOP. We have an event or exposure only.

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Did the employee experience an injury or illness?	_____
Is the injury or illness work-related?	_____
Determination of Work-Relatedness [1904.5]	_____
Work-relatedness is presumed for injuries and illnesses resulting from events or exposures occurring in the work environment unless an exception specifically applies.	_____
A case is presumed work-related if, and only if, an event or exposure in the work environment is a discernable cause of the injury or illness or of a significant aggravation to a pre-existing condition .	_____

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1904.5 – Work Environment

- ◆ The work environment
 - ~ where employees are working or present as a condition of employment
 - ~ physical locations,
 - ~ equipment or materials
 - ~ course and scope of work



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1904.5 – Significant Aggravation

- ◆ A pre-existing injury or illness is significantly aggravated when an event or exposure in the work environment causes further injury, illness, or more severe symptoms.
- ◆ More medical treatment
- ◆ More restrictions
- ◆ More days away



30



1904.5 – Exceptions

- ◆ Present as a member of the general public
- ◆ Symptoms arising in work environment that are solely due to non-work-related event or exposure
- ◆ Voluntary participation in wellness program, medical, fitness or recreational activity
- ◆ Eating, drinking or preparing food or drink for personal consumption



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1904.5 – Exceptions



- Personal tasks outside assigned working hours
- Personal grooming, self medication for non-work-related condition, or intentionally self-inflicted
- Motor vehicle accident in parking lot/access road during commute
- Common cold or flu
- Mental illness, unless employee voluntarily provides a medical opinion that affirms work-relatedness

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Did the employee experience an injury or illness?

Is the injury or illness work-related?

Determination of Work-Relatedness [1904.5]

Work-relatedness is presumed for injuries and illnesses resulting from events or exposures occurring in the **work environment** unless an exception specifically applies.

A case is presumed work-related if, and only if, an **event or exposure** in the **work environment** is a discernable **cause of the injury or illness** or of a significant **aggravation to a pre-existing condition**.

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1904.5 – Travel Status

- ◆ An injury or illness that occurs while an employee is on travel status is work-related if it occurred while the employee was engaged in work activities in the interest of the employer
- ◆ Home away from home
- ◆ Detour for personal reasons is not work-related



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1904.5 – Work at Home

- ◆ Injuries and illnesses that occur while an employee is working at home are work-related if they:
 - ~ occur while the employee is performing work for pay or compensation in the home, and
 - ~ are directly related to the performance of work rather than the general home environment



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STEP 2:

Is the injury or illness **work-related?**

Scenario A:

Employee gives blood at employer-sponsored blood drive, passes out and hits head on ground resulting in a laceration.

NO

Why?: Exception - The injury or illness results solely from voluntary participation in a wellness program or in a medical, fitness, or recreational activity such as blood donation, physical examination, flu shot, exercise class, racquetball, or baseball.

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STEP 2:
Is the injury or illness **work-related**?

Scenario B:

Employee sprains ankle in company parking lot on his way in to work.

YES

Why?: Parking lot exception applies only to motor vehicle accidents during commute or if the parking facility is not owned by the company (such as a parking garage or mall).

37

Did the employee **experience an injury or illness**?

Is the injury or illness **work-related**?

Is the injury or illness a **new case**?

38

STEP 3:
Is the injury or illness a **new case**?

Determination of a new case

Consider an injury or illness a "new case" if the employee has not previously experienced a recorded injury or illness of the same type that affects the same part of the body,

OR

the employee previously experienced a recorded injury or illness of the same type that affected the same part of body but had recovered completely (all signs and symptoms had disappeared) from the previous injury or illness and an event or exposure in the work environment caused the signs or symptoms to reappear.

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What is a PLHCP

- ◆ Physician
- ◆ Licensed Health Care Provider
 - ~ Physicians Assistant
 - ~ Nurse Practitioner
 - ~ Chiropractor
 - ~ Physical Therapist
 - ~ Nurse working under a Drs. Order
 - ~ Dentist

40

1904.6 – New Case

- ◆ If there is a medical opinion regarding resolution of a case, the employer must follow that opinion
 - ~ If two or more PLHCPs make conflicting recommendations, the employer is required to base the decision on the best documented and most well reasoned evidence.
- ◆ If an exposure triggers the recurrence, it is a new case (e.g., asthma, rashes)
- ◆ If signs and symptoms recur even in the absence of exposure, it is not a new case (e.g., silicosis, tuberculosis, asbestosis)

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STEP 3:
Is the injury or illness a new case?

Scenario A: Five weeks ago, employee sprained wrist at work and received support, prescription medication, and "light duty." Two weeks ago employee was back at her normal job, off the medications and off restrictions. Today (5 weeks after the injury) employee complains of pain in same wrist after moving boxes.

YES

Why?: Employee had completely recovered from the previous injury and a new event or exposure occurred in the work environment.

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Did the employee experience an injury or illness?	_____
Is the injury or illness work-related?	_____
Is the injury or illness a new case?	_____
Does the injury or illness meet the general criteria or the application to specific cases?	_____



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FPST 3013
Safety Management

Injury Recordkeeping Rules – Part 2

1

OSHA Training Institute Education Centers | Oklahoma State University

INJURY AND ILLNESS REPORTING AND RECORDKEEPING

OSHA #7845 Recordkeeping Rule Seminar

Office Of PROFESSIONAL DEVELOPMENT
College of Engineering, Architecture & Technology
CEATPO.OKSTATE.EDU | (405) 744-5714

2

Did the employee experience an injury or illness?

Is the injury or illness work-related?

Is the injury or illness a new case?

Does the injury or illness meet the general criteria or the application to specific cases?

3



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<p style="text-align: center;">Step 4: Does the injury or illness meet the general criteria or the application to specific cases?</p> <p style="text-align: center; color: purple;">General Recording Criteria 1904.7</p> <p>An injury or illness is recordable if it results in one or more of the following:</p> <ul style="list-style-type: none">• Death• Loss of consciousness• Days away from work• Transfer to another job• Significant injury or illness diagnosed by a PLHCP• Restricted work activity• Medical treatment beyond first aid	
---	--

4

<p style="text-align: center;">1904.7(b)(5) – Medical Treatment</p> <ul style="list-style-type: none">◆ Medical treatment is the management and care of a patient to combat disease or disorder.◆ It does not include:<ul style="list-style-type: none">~ Visits to a PLHCP solely for observation or counseling~ Diagnostic procedures~ First aid 	
--	--

5

<p style="text-align: center;">1904.7(b)(5) – First Aid</p> <ul style="list-style-type: none">◆ Using nonRx medication at nonRx strength◆ Tetanus shots◆ Cleaning, flushing, or soaking surface wounds◆ Wound coverings, butterfly bandages, Steri-Strips◆ Hot or cold therapy◆ Non-rigid means of support (ace bandage)◆ Temporary immobilization device used to transport accident victims (C-collar)◆ Drilling of fingernail or toenail, draining fluid from blister◆ Eye patches◆ Removing foreign bodies from eye using irrigation or cotton swab◆ Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means◆ Finger guards◆ Massages◆ Drinking fluids for relief of heat stress <p>If it's not on this list, it is medical treatment and therefore - RECORDABLE</p>	
---	--

6



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1904.7(b)(6) - Loss of Consciousness

- ♦ All work-related cases involving loss of consciousness must be recorded



7

First Aid Or Medical Treatment?

- ♦ Applying a Band-Aid to a cut
- ♦ Applying a butterfly to a cut
- ♦ Applying Derma-bond to a cut
- ♦ Second or subsequent hot and cold soaks for a sore muscle
- ♦ Physician directing employee to take 800mg of Advil when they get home
- ♦ One time administration of prescription pain medication to alleviate minor discomfort
- ♦ One time chiropractic adjustment
- ♦ X-ray of arm to determine if it is fractured
- ♦ Employee is sent to ER for apparent broken index finger. Xrays reveal the 1st joint is jammed and the doctor manipulates the joint back in to position with little or no effort and no pain to the employee. The employee is released to full duty immediately and advised to take TOC pain meds if needed.

8

10/6/2009 OSHA LOI

- ♦ Scenario: An employee felt something in his eye and reported the incident to plant security. The eye was flushed and it was noted that there was a speck of foreign material in the employee's eye. The employee went to the emergency room and the treating physician removed the foreign object with a wetted swab. The physician determined that object was not on the cornea long enough to leave a scratch and thought the employee would have no symptoms of infection the following day. The physician did however issue a prescription for Gentamicin ophthalmic solution with instruction to only fill and use the prescription if the eye was not symptom free the following day.
- ♦ The following day, the employee reported to work and was seen by the plant's registered nurse who confirmed that the eye was free of infection. The prescription was not filled and the employee returned to regular work. The prescription issued was precautionary and was not needed. Must this case be recorded?
- ♦ Response: The case is recordable regardless of whether the medication was given solely as a preventive measure. In the preamble to the final recordkeeping rule, OSHA specifically addressed the use of prescription antibiotics for prophylactic reasons. The agency concluded that all prescription medications should be considered medical treatment because they are powerful substances that can only be prescribed by a licensed health care professional.

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OSHA's Form 300 Rev. 210904
Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to injuries and illnesses that occur while employees are at work. It protects the confidentiality of employees to the extent possible. It is intended to be used by employers to help prevent occupational safety and health problems.

Year 20 _____
U.S. Department of Labor
Occupational Safety and Health Administration
Washington, D.C. 20410

Identify the person	Describe the case	Classify the case	Check the "days away from work" column or check the "light or restricted work" column
(1) Employee's name Last Name _____ First Name _____ Middle Initial _____	(2) Date of injury _____ When the employee first became aware of the injury or illness _____	(3) Description of the injury or illness _____	(4) Days away from work _____
(5) Job title _____	(6) Where the incident occurred _____	(7) Description of the job(s) injured, ill, or affected _____	(8) On job _____
(9) Employee's name Last Name _____ First Name _____ Middle Initial _____	(10) Date of injury _____ When the employee first became aware of the injury or illness _____	(11) Description of the injury or illness _____	(12) Off job _____
(13) Job title _____	(14) Where the incident occurred _____	(15) Description of the job(s) injured, ill, or affected _____	(16) Days away from work _____
(17) Job title _____	(18) Where the incident occurred _____	(19) Description of the job(s) injured, ill, or affected _____	(20) Days away from work _____
(21) Job title _____	(22) Where the incident occurred _____	(23) Description of the job(s) injured, ill, or affected _____	(24) Days away from work _____
(25) Job title _____	(26) Where the incident occurred _____	(27) Description of the job(s) injured, ill, or affected _____	(28) Days away from work _____
(29) Job title _____	(30) Where the incident occurred _____	(31) Description of the job(s) injured, ill, or affected _____	(32) Days away from work _____
(33) Job title _____	(34) Where the incident occurred _____	(35) Description of the job(s) injured, ill, or affected _____	(36) Days away from work _____
(37) Job title _____	(38) Where the incident occurred _____	(39) Description of the job(s) injured, ill, or affected _____	(40) Days away from work _____
(41) Job title _____	(42) Where the incident occurred _____	(43) Description of the job(s) injured, ill, or affected _____	(44) Days away from work _____
(45) Job title _____	(46) Where the incident occurred _____	(47) Description of the job(s) injured, ill, or affected _____	(48) Days away from work _____
(49) Job title _____	(50) Where the incident occurred _____	(51) Description of the job(s) injured, ill, or affected _____	(52) Days away from work _____
(53) Job title _____	(54) Where the incident occurred _____	(55) Description of the job(s) injured, ill, or affected _____	(56) Days away from work _____
(57) Job title _____	(58) Where the incident occurred _____	(59) Description of the job(s) injured, ill, or affected _____	(60) Days away from work _____
(61) Job title _____	(62) Where the incident occurred _____	(63) Description of the job(s) injured, ill, or affected _____	(64) Days away from work _____
(65) Job title _____	(66) Where the incident occurred _____	(67) Description of the job(s) injured, ill, or affected _____	(68) Days away from work _____
(69) Job title _____	(70) Where the incident occurred _____	(71) Description of the job(s) injured, ill, or affected _____	(72) Days away from work _____
(73) Job title _____	(74) Where the incident occurred _____	(75) Description of the job(s) injured, ill, or affected _____	(76) Days away from work _____
(77) Job title _____	(78) Where the incident occurred _____	(79) Description of the job(s) injured, ill, or affected _____	(80) Days away from work _____
(81) Job title _____	(82) Where the incident occurred _____	(83) Description of the job(s) injured, ill, or affected _____	(84) Days away from work _____
(85) Job title _____	(86) Where the incident occurred _____	(87) Description of the job(s) injured, ill, or affected _____	(88) Days away from work _____
(89) Job title _____	(90) Where the incident occurred _____	(91) Description of the job(s) injured, ill, or affected _____	(92) Days away from work _____
(93) Job title _____	(94) Where the incident occurred _____	(95) Description of the job(s) injured, ill, or affected _____	(96) Days away from work _____
(97) Job title _____	(98) Where the incident occurred _____	(99) Description of the job(s) injured, ill, or affected _____	(100) Days away from work _____

Page Info: Be sure to include space for the Summary page when filling out page C
Page _____ of _____ (1) (2) (3) (4) (5) (6)

10

1904.7(b)(3) - Days Away Cases

- ◆ One or more days away from work
- ◆ Does not include day of injury/illness
- ◆ Count the number of calendar days
- ◆ Cap day count at 180 days
- ◆ Stop Counting
 - ~ employee leaves company
 - ~ Returns to work
- ◆ Must follow medical opinion



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1904.7(b)(4) - Restricted Work Cases

- ◆ One or more days of restricted work or job transfer
- ◆ Do not include the day of injury/illness



12



1904.7(b)(4) - Restricted Work Cases

- ◆ Restricted work activity exists if the employee is:
 - ~ Unable to work the full workday he or she would otherwise have been scheduled to work; or
 - ~ Unable to perform one or more routine job functions
- ◆ An employee's routine job functions are those activities the employee regularly performs at least once per week

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1904.7(b)(4) – Restricted Work

- ◆ A case is not recordable under 1904.7(b)(4) as a restricted work case if:
 - ~ the employee experiences minor musculoskeletal discomfort,
 - ~ the employee is fully able to perform all of his or her routine job functions, and
 - ~ assigned a work restriction to prevent a more serious condition from developing

14

1904.7(b)(4) – Job Transfer

- ◆ Job transfer
 - ~ An injured or ill employee is assigned to a job other than his or her regular job for part of the day
 - ~ A case is recordable if the injured or ill employee performs his or her routine job duties for part of a day and is assigned to another job for the rest of the day



15



If a PLHCP prescribes it, record it.

16

How would you record this?

- ◆ Employee is injured on a Saturday but did not report it. He was not scheduled to work Sunday. He reported the injury when he arrived to work Monday morning. After working for six hours, the employee sought medical treatment at an emergency room. The doctor sent the employee home for the remainder of Monday's shift and released the employee to return to restricted work on Tuesday. Tuesday morning the employee called his supervisor and said he was still in a lot of pain and used a vacation day to stay home. The employee returned to full normal duty work Wednesday.
 - ~ Lost workday case? If so, how many days?
 - ~ Restricted duty case? If so, how many days?
 - ~ Other recordable case?
 - ~ Not recordable due to late report

17

1904.7(b)(7) – Significant Diagnosed Injury or Illness

- ◆ The following work-related conditions must always be recorded at the time of diagnosis by a PLHCP:
 - ~ Cancer
 - ~ Chronic irreversible disease
 - ~ Punctured eardrum
 - ~ Fractured or cracked bone

18



1904.8 – Bloodborne Pathogens

- ◆ All work-related needlesticks
- ◆ Cuts from sharp objects contaminated with human body fluid
- ◆ Splashes or other exposures if it results in a bloodborne disease or meets the general recording criteria.





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FPST 3013
Safety Management

Injury Recordkeeping Rules – Part 3

1

 OSHA® Training Institute Education Centers | Oklahoma State University

INJURY AND ILLNESS REPORTING AND RECORDKEEPING

OSHA #7845 Recordkeeping Rule Seminar
Lecture 3

Office Of  PROFESSIONAL DEVELOPMENT
College of Engineering, Architecture & Technology

2

1904.10 – Hearing Loss

- ◆ Must record all work-related hearing loss cases where:
 - ~ Employee has experienced a Standard Threshold Shift; **and**
 - ~ Employee's hearing level is 25 decibels (dB) or more above audiometric zero [averaged at 2000, 3000, and 4000 hertz (Hz)] in the same ear as the STS.

3



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Hearing Loss – Recordable or not?

TEST 2

	500 Hz	1000 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz
Baseline	5 dB	5 dB	0 dB	5 dB	10 dB	10 dB
Annual	5 dB	5 dB	10 dB	20 dB	35 dB	15 dB
Difference	0	0	10	15	25	5

TEST 1

	500 Hz	1000 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz
Baseline	5 dB	5 dB	10 dB	15 dB	20 dB	10 dB
Annual	5 dB	5 dB	20 dB	30 dB	45 dB	15 dB
Difference	0	0	10	15	25	5

4

Hearing Loss – Recordable or not?

TEST 2

	500 Hz	1000 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz
Baseline	5 dB	5 dB	0 dB	5 dB	10 dB	10 dB
Annual	5 dB	5 dB	10 dB	20 dB	35 dB	15 dB
Difference	0	0	10	15	25	5

TEST 1

	500 Hz	1000 Hz	2000 Hz	3000 Hz	4000 Hz	6000 Hz
Baseline	5 dB	5 dB	10 dB	15 dB	20 dB	10 dB
Annual	5 dB	5 dB	20 dB	30 dB	45 dB	15 dB
Difference	0	0	10	15	25	5

5

Hearing Loss – Recordable or not?

TEST 2

	2000 Hz	3000 Hz	4000 Hz	
0 dB	5 dB	10 dB	Baseline	
10 dB	20 dB	35 dB	Annual	
10	15	25	Difference	

TEST 1

	2000 Hz	3000 Hz	4000 Hz	
10 dB	15 dB	20 dB	Baseline	
20 dB	30 dB	45 dB	Annual	
10	15	25	Difference	

6



Hearing Loss – Recordable or not?

TEST 2

2000 Hz	3000 Hz	4000 Hz	
0 dB	5 dB	10 dB	Baseline
10 dB	20 dB	35 dB	Annual
10	15	25	Difference

TEST 1

2000 Hz	3000 Hz	4000 Hz	
10 dB	15 dB	20 dB	Baseline
20 dB	30 dB	45 dB	Annual

Average = 16.7 = STS → | 10 | 15 | 25 | Difference |

7

Hearing Loss – Recordable or not?

TEST 2

2000 Hz	3000 Hz	4000 Hz	
0 dB	5 dB	10 dB	Baseline
10 dB	20 dB	35 dB	Annual

TEST 1

2000 Hz	3000 Hz	4000 Hz	
10 dB	15 dB	20 dB	Baseline
20 dB	30 dB	45 dB	Annual

Average = 16.7 = STS → | 10 | 15 | 25 | Difference |

8

Hearing Loss – Recordable or not?

TEST 2

2000 Hz	3000 Hz	4000 Hz	
0 dB	5 dB	10 dB	Baseline
10 dB	20 dB	35 dB	Annual

TEST 1

2000 Hz	3000 Hz	4000 Hz	
10 dB	15 dB	20 dB	Baseline
20 dB	30 dB	45 dB	Annual

Average = 31.7 → | 10 | 15 | 25 | Difference |

Average = 16.7 = STS → | 10 | 15 | 25 | Difference |

9



Hearing Loss – Recordable or not?

	2000 Hz	3000 Hz	4000 Hz	
TEST 2	0 dB	5 dB	10 dB	Baseline
	10 dB	20 dB	35 dB	Annual
Average = 21.7 →	10	15	25	Difference
TEST 1	2000 Hz	3000 Hz	4000 Hz	
	10 dB	15 dB	20 dB	Baseline
	20 dB	30 dB	45 dB	Annual
Average = 31.7 →	10	15	25	Difference
Average = 16.7 = STS →				

10

Hearing Loss – Recordable or not?

	2000 Hz	3000 Hz	4000 Hz	
TEST 2	0 dB	5 dB	10 dB	Baseline
	10 dB	20 dB	35 dB	Annual
Average = 21.7 →	10	15	25	Difference
TEST 1	2000 Hz	3000 Hz	4000 Hz	
	10 dB	15 dB	20 dB	Baseline
	20 dB	30 dB	45 dB	Annual
Average = 31.7 →	10	15	25	Difference
Average = 16.7 = STS →				

11

1904.11 - Tuberculosis

- Record a case where an employee is exposed at work to someone with a known case of active tuberculosis, and subsequently develops a TB infection
 - ~ Skin test
 - ◆ work related TB exposures only



12



1904.29 - Forms

- ♦ Employers must enter each recordable case on the forms within 7 calendar days of receiving information that a recordable case occurred.

13

1904.29 – Privacy Protection

- ♦ Do not enter the name of an employee on the OSHA Form 300 for "privacy concern cases"
- ♦ Enter "privacy case" in the name column
- ♦ Keep a separate confidential list of the case numbers and employee names
 - ~ provide to an OSHA inspector upon request.
 - ~ NOTE: OSHA injury/illness & medical surveillance records are not protected by HIPPA
 - Health Insurance Portability and Accountability Act of 1996
 - US legislation that provides data privacy and security provisions for safeguarding medical information



14

1904.29 – Privacy Protection

- ♦ Privacy concern cases are:
 - ~ An injury or illness to an intimate body part or reproductive system
 - ~ An injury or illness resulting from sexual assault
 - ~ Mental illness
 - ~ HIV infection, hepatitis, tuberculosis
 - ~ Needlestick and sharps injuries that are contaminated with another person's blood or other potentially infectious material
 - ~ Employee voluntarily requests to keep name off for other illness cases

15



1904.35 – Employee Involvement

- ◆ You must inform each employee of how to report an injury or illness

~ Must set up a way for employees to report work-related injuries and illnesses promptly; and



~ Must provide limited access to injury and illness records to employees, former employees and their personal and authorized representatives

16

1904.36 – Prohibition Against Discrimination

- ◆ Section 11(c) of the Act prohibits you from discriminating against an employee for reporting a work-related fatality, injury or illness
- ◆ Section 11(c) also protects the employee who files a safety and health complaint, asks for access to the Part 1904 records, or otherwise exercises any rights afforded by the OSH Act

17

2012 memorandum

- ◆ Illegal discrimination
- ◆ Disciplinary action for being injured on the job
- ◆ Disciplinary action for not reporting an injury timely
- ◆ Post accident - disciplinary action for violation of a safety rule
- ◆ Bonuses based on reduction of injury goals
- ◆ Incentive programs that discourage reporting of injuries

18



1904.39 – Fatality/Catastrophe Reporting

- ◆ Fatality - within 8 hours
- ◆ Within 24 hours
 - ~ Amputation
 - ~ Hospitalization for treatment (not diagnosis or observation)
 - ~ Loss of an eye
- ◆ Call local area office or 1-800-321-OSHA. Can also report using OSHA website
- ◆ Do not need to report
 - ~ highway or public street motor vehicle accidents
 - ~ commercial airplane, train, subway or bus accidents

19

Definition of Amputation

- ◆ An amputation, for OSHA reporting purposes, is defined under section 1904.39(b)(11).
 - ~ "An amputation is the traumatic loss of a limb or other external body part. Amputations include a part, such as a limb or appendage, that has been severed, cut off, amputated (either completely or partially); fingertip amputations with or without bone loss; medical amputations resulting from irreparable damage; amputations of body parts that have since been reattached.
- ◆ Amputations do not include avulsions, enucleations, degloving, scalpings, severed ears, or broken or chipped teeth."

20

1904.40 – Providing Records to Government Representatives

- ◆ Must provide copies of the records within 4 business hours
- ◆ Use the business hours of the establishment where the records are located
 - ~ e.g. If an inspection is in Texas and the records are in New York, use the business hours of New York



21



Calculating Incident Rates

22

Types of Incident Rates

- ◆ OSHA Recordable Incident Rate
 - ~ Incident Rate
 - ~ OSHA Rate
 - ~ TIR
 - ~ TRIR
- ◆ The number of employees per 100 full-time employees that have been involved in a recordable injury or illness in one year

23

Types of Incident Rates

- ◆ Lost Time Case Rate
 - ~ Lost Time Incident Rate (LTIR)
 - ~ Lost Workday Incident Rate (LWIR)
 - ~ LTCR
 - ~ Days Away Rate (DAR)
- ◆ the number of lost time cases per 100 full-time employees in one year

24



Types of Incident Rates

- ◆ DART Rate
 - ~ Days Away Restricted or Transferred (DART)
- ◆ Describes the number of recordable incidents per 100 full time employees that resulted in lost or restricted days or job transfer due to work related injuries or illnesses.

25

Types of Incident Rates

- ◆ Severity Rate
- ◆ Describes the actual number of lost workdays experienced as compared to the total number of OSHA recordable incidents experienced.

26

How to Calculate an Incident Rate

- ◆ IR Formula
- $$\text{Number Cases (N) X 200,000} \over \text{Number of Employee hours worked}$$

27



200,000

- ◆ Incident rates are based on the number of injuries occurring to 100 employees in a year.
- ◆ 100 employees
- ◆ 40 hours per week
- ◆ 50 weeks per year
- ◆ $100 \times 40 \times 50 = 200,000$

28

Severity Rate

$$\text{Severity Rate} = \frac{\text{Total number lost workdays}}{\text{Total number of recordable incidents}}$$

29

Now What?

- ◆ SIC
 - ~ Standard Industrial Classification System
- ◆ NAICS
 - ~ North American Industrial Classification System
- ◆ Asco Aerospace USA
 - ~ SIC 3728 – Aircraft Parts and Auxiliary Equipment, Not Elsewhere Classified
 - ~ NAICS 336413 - Other Aircraft Parts and Auxiliary Equipment Manufacturing

30



1904.32 - Annual Summary

- ◆ Review OSHA Form 300 for completeness and accuracy, correct deficiencies
- ◆ Complete OSHA Form 300A
- ◆ Certify summary
- ◆ Post summary

31

1904.32 - Annual Summary

- ◆ A company executive must certify the summary:
 - ~ An owner of the company
 - ~ An officer of the corporation
 - EHS Manager
 - ~ The highest ranking company official working at the establishment, or
 - ~ His or her supervisor
- ◆ Must post for 3 month period from February 1 to April 30 of the year following the year covered by the summary



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FPST 3013
Safety Management

Injury Recordkeeping Rules – Part 4

1

Recap

- ◆ Covered employees
- ◆ Covered employers
- ◆ Multiple businesses
- ◆ Contractors
- ◆ Scope exemptions
- ◆ Recording criteria
- ◆ Three items...Five step process
 - ~ Did the employee experience an injury or illness?
 - ~ Is the injury or illness work related
- ~ Is the injury or illness a new case?
- ~ Does the injury or illness meet the general criteria or the application to a specific case?
- ~ Record the injury or illness
- ◆ Work environment
- ◆ Exemptions
- ◆ Significant aggravation
- ◆ PLHCP

Recap

- ◆ General recording criteria
 - ~ Fatality
 - ~ Loss of consciousness
 - ~ Days away from work
 - ~ Transfer to another job
 - ~ Significant injury or illness
 - ~ Restricted work activity
 - ~ Medical treatment beyond first aid
- ◆ First aid list: 14 items
- ◆ Forms
 - ~ 300
 - ~ 301
 - ~ 300A
- ◆ Counting lost work and restricted days
- ◆ Calculating Incident rates
 - ~ NAICS
- ◆ Hearing loss
 - ~ STS; and
 - ~ Average hearing level above 25 dB
- ◆ Reporting
 - ~ Within eight hours
 - Fatality
 - ~ Within 24 hours
 - Amputation, hospitalization (not diagnosis or observation), Loss of an eye

3



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 Recordable? 

On Monday while working on his equipment, Larry smashes his thumb causing a contusion and a laceration. He goes to the health unit where the nurse cleans the wound then wraps it with gauze. He returns to work.

4

 Recordable? 

On Monday while working on his equipment, Larry smashes his thumb causing a contusion and a laceration. He goes to the health unit where the nurse cleans the wound, wraps it with gauze, then sends him to the emergency room.

5

 Recordable? 

On Monday while working on his equipment, Larry smashes his thumb causing a contusion and a laceration. He goes to the health unit where the nurse cleans the wound, wraps it with gauze, then sends him to the emergency room. However, while he is at the emergency room an x-ray is taken of the thumb and he is given a tetanus shot.

6



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 Recordable? 

On Monday while working on his equipment, Larry smashes his thumb causing a contusion and a laceration. He goes to the health unit where the nurse cleans the wound, wraps it with gauze, then sends him to the emergency room. However, while he is at the emergency room an x-ray is taken of the thumb. The x-ray proves to be negative (no fracture) and he returns to work without restrictions.

7

 Recordable? 

Employee strains shoulder picking up a box, goes to the doctor and receives a prescription for Lortab. The employee does not fill or take the prescription and has no other restrictions.

8

 Recordable? 

Machining employee lacerates her arm and nurse says it does not need sutures but places steri-strips to "help keep the wound clean".

9



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	Recordable?	
<p>Employee is working with a stuck wrench. While trying to remove the wrench it pops up and hits him in the mouth chipping his tooth.</p>		

10

	Recordable?	
<p>Employee is in cafeteria and is walking to a table, steps on a pickle, slips and blows out his knee. He has surgery and 3 months of lost time.</p>		

11

	Recordable?	
<p>Employee reports an incident on Friday, 10 days after it occurred. He goes to a doctor and is put off work for the remainder of Friday. He goes on weekend break and returns the following Monday to normal duty.</p>		

12



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 Recordable? 

Employee reports abdominal pain and sees his doctor. The employee misses Friday due to waiting for a diagnosis from his doctor.

13

 Recordable? 

An employee is placed on light duty due to a lacerated eyeball. Two employees were standing outside the building when one of the employee's eyeball was struck by a "flip top" from a can that was thumped through the air by the other employee.

14

 Recordable? 

Safety Manager drops his pencil on the floor in his office. He bends over to pick it up and his back goes out. He is put on bed rest for one week.

15



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 Recordable? 

Employee has a contusion to his arm and has x-rays taken. The x-rays can't be properly read due to swelling in his arm. The Dr. puts employee off work for two days until a certified radiologist can read the x-rays. After missing two days of work, the radiologist concludes there is no fracture and the employee returns to work.

16

 Recordable? 

Individual has a minor laceration to his finger, gets on the rear of a cart to ride to the health unit. While in transit, looks down, sees his own blood, faints, and hits his head on the ground resulting in a laceration requiring sutures.

17

 Recordable? 

Medical history shows an employee dislocated his shoulder 15 years ago due to a motorcycle accident. The shoulder dislocates again while the employee is tightening a bolt with a cheater bar and the employee is placed on light duty.

18



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 Recordable? 

Monday morning, an employee strains his shoulder lifting a tire and is put on light duty for the next 3 days by his doctor. When he returns to the plant from the doctor's office, he schedules the next three days for vacation and never works light duty.

19

 Recordable? 

Employee is on light duty (which was recorded) for a previous occupational shoulder injury that occurred last week. Her light duty task is to deliver mail in the plant. While stepping off the cart she sprains her ankle and receives additional restrictions that prohibit her from continuing her mail duties, but allow her to photocopy training manuals.

20

 Recordable? 

First day back from weekend break, an employee reports something in his eye 10 minutes after shift starts. Upon being examined by a doctor at 9:00 AM, a piece of metal is found to be embedded in the eye. The doctor also notes that a rust ring is present that he has to clean out.

21



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	Recordable?	
<p>A Masker (2 months of service) reports to the health unit with numbness in her thumb, index and middle finger. She sees doctor and is diagnosed with Carpal Tunnel Syndrome.</p>		

22

	Recordable?	
<p>An employee strains her back on the last day before a production down break. She is put off work until the production startup.</p>		

23

Assignment 3 – OSHA Recordkeeping

24



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FPST 3013 Safety Management

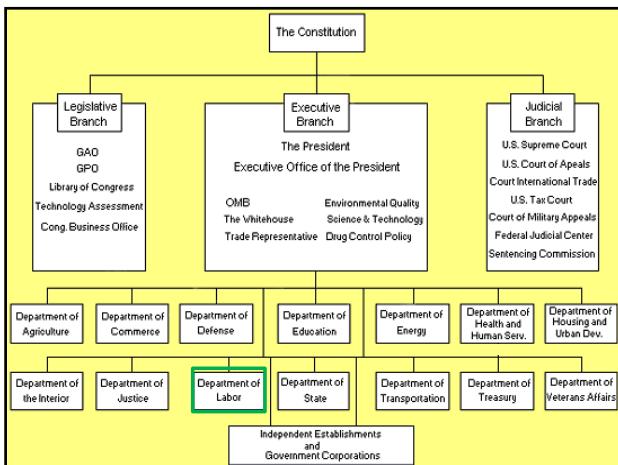
OSHA Legal and Regulatory Issues

1

Legislative History of the OSH Act

- The Williams-Steiger Act
Signed December 1970 by President Nixon
 - Effective April 1971
- Up until this point, S&H laws historically left to the states
- Prior to 1960's, laws applied to a limited number of federal contract employers or a specific industry
 - Walsh-Healy Public Contracts Act
 - Longshoremen's and Harbor Workers' Compensation Act

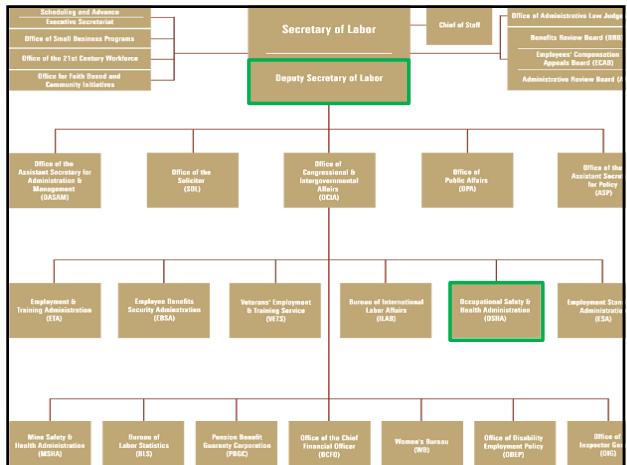
2



3



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4

OSHA

- Occupational Safety and Health Administration
 - April 28, 1971
 - Group was created with the passing of the OSH Act
- Areas of authority:
 - Promulgate, modify, and revoke safety and health standards
 - Conduct inspections and issue citations
 - Require employers to keep records
 - Petition the courts in cases of imminent danger
 - Approve or reject state plans
 - Provide training and education (employers and employees)
 - Consult with employers and employees regarding prevention of illnesses and injuries
 - Grant funds to the states for program development
 - Develop and maintain a statistics program
 - They are the law

5

OSHA Structure

- DOL - Secretary of Labor
- Assistant Secretary of Labor for OSHA
 - Investigation and prosecution
- **10 Regional Offices**
 - Area Offices in each region
 - Area Director

6



State Plans

The map shows the following states with blue shading: AK, WA, MT, ND, MN, WI, MI, NH, VT, ME, RI, CT, DE, MD, VA, NC, SC, GA, AL, MS, LA, TX, OK, AR, CO, NM, AZ, HI, PR, and U.S. Virgin Islands. Other states are shown in grey.

7

OSHA's Regulatory Agenda

- <https://www.osha.gov/laws-regs/unifiedagenda/currentagenda>

8

Fun Facts about OSHA

- FY 2019 budget
 - \$557,787,000.00
- FY 2018 – Inspections
 - Federal – 32,020
 - Citations – 40,993 (58,702 in FY 2017)
- 2200 Inspectors
 - 130 million workers in the US
 - 8 million worksites
- 59,000 workers for every OSHA employee
- Watch videos:
 - OSHA cites Hartford Fire Dept. in Firefighter Bell's death
 - What is OSHA and which jobs does it protect?

9



Employee Rights (pg 54-55)



- Receive information and training (in applicable language) about hazards, methods to prevent harm, and applicable OSHA standards
- Review records of their workplace injuries and illnesses
- Receive copies of the results from tests and IH monitoring
- Get copies of their workplace medical records
- Participate in an OSHA inspection and speak in private with the inspector
- File a complaint with OSHA if they have been retaliated against by their employer as the result of requesting an inspection or using any of their other rights under the OSH Act
- File a complaint if punished or retaliated against for acting as a "whistleblower"
- File a confidential complaint

10



Filing an OSHA Complaint



- Download the OSHA-7 form from OSHA's website
- File the complaint online
- Workers can file a complaint
- A worker representative can file a complaint
- Telephone or visit local regional or area offices to discuss your concerns
- Complete the form – be specific and include appropriate details
- OSHA determines if an inspection is necessary
- Workers do not have to reveal their name

11



The OSHA Poster



- What part of the law requires us to do this?
 - https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9606
- Don't pay for one. They're free
 - <https://www.osha.gov/Publications/poster.html>

12



Employer Rights



- Apply for variance
- Participate in standards development
- Apply for small business loan for compliance assistance
- Assured of confidentiality of trade secrets
- During inspections
 - Request ID from CSHO
 - Informed as to the purpose of inspection
 - Opening and closing conference
 - Contest violation

13

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What to Expect

During an OSHA Inspection

14

OSHA: "We're from the Government and we're here to help"



- Boss: "We are happy to have you here."

15



Workplace Inspections



- Establishments covered by the OSH Act are subject to inspection by OSHA compliance safety and health officers (CSHO's)
- The OSH Act authorizes CSHOs to conduct workplace inspections at reasonable times and typically without advance notice
 - It is illegal to have advance notice of an OSHA inspection
 - In fact, anyone who tells an employer about an OSHA inspection in advance can receive fines and a jail term

16



OSHA Inspection priority



Priority	Category of Inspection
1st	Imminent Danger: Reasonable certainty an immediate danger exists
2nd	Fatality/Catastrophe: Reported to OSHA; inspected ASAP
3rd	Complaints/Referrals: Worker or worker representative can file a complaint about a safety or health hazard
4th	Programmed Inspections: Cover industries and employers with high injury and illness rates, specific hazards, or other exposures.

17



Can OSHA just walk in?



- Barlow case – 1978
- OSHA inspectors violating 4th Amendment rights
 - The Fourth Amendment to the United States Constitution prohibits unreasonable searches and seizures and requires any search warrant to be judicially sanctioned and supported by probable cause. It is part of the Bill of Rights
 - OSHA Inspectors must get warrant if requested

18



Opening Conference



- CSHO will
 - Present credentials
 - Explain purpose, nature and scope of inspection
 - Request records that need to be examined
 - Obtain names of employer & Employee representative who will accompany
 - Explain random interview process
 - Explain sampling/photograph protocol
 - Determine what PPE is needed on site
 - Explain normal violation/penalty structure
 - Set tentative date/time for closing conference

19



- Regardless of purpose of visit, OSHA will view OSHA logs
 - Looking for reasons to expand the inspection
- Develop internal procedures and issue to leadership team
 - Goodyear

20



Walk Around Inspection



- Accompany the CSHO at all times
- Take side by side pictures/video/samples
- CSHO may speak to employees in private or have a representative present

21



Closing Conference



- OSHA will disclose proposed violations
- Not final until you receive the citation

22



Citation and Notice of Penalty



- Comes from the Area Director
- States nature of the violation
- Cites specific standard that was violated
- Suggest possible abatement measures
- Abatement dates
- Penalties

23



Violation Categories



- Willful
 - Intentional or indifferent
 - Failure to abate after serious violation
 - Knew but didn't do anything
 - Not issued without consulting with Regional Administrator
 - Condition that could cause death or serious physical
 - Hazardous condition the employer knew or should have known about
 - Big \$\$\$
- Serious
- Repeat
- Other than serious
 - Relationship to safety and health
 - Usually not accompanied by monetary citation
 - May be resolved in the informal conference
- "De Minimus"
 - The law does not concern itself with trifles"
 - No immediate or direct threat to H&S

24



Citations and Penalties	
VIOLATION TYPE	PENALTY
WILLFUL A violation that the employer intentionally and knowingly commits or a violation that the employer commits with plain indifference to the law.	OSHA may propose penalties of up to \$134,937 for each willful violation, with a minimum penalty of \$13,494 for each willful violation.
SERIOUS 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.	There is a mandatory penalty for serious violations which may be up to \$13,494.
OTHER-THAN-SERIOUS A violation that has a direct relationship to safety and health, but probably would not cause death or serious physical harm.	OSHA may propose a penalty of up to \$13,494 for each other-than-serious violation.
REPEATED A violation that is the same or similar to a previous violation.	OSHA may propose penalties of up to \$134,937 for each repeated violation.

25

Citations	
• Must be posted upon receipt	<ul style="list-style-type: none"> 3 days or until corrected, whichever is longer Must be done, even when citation is contested
• Petition for modification of abatement (PMA)	<ul style="list-style-type: none"> 10 days to request that more time needed to comply <ul style="list-style-type: none"> Steps taken to date Reasons for more time Temporary safe guards in place
• Informal Conference	<ul style="list-style-type: none"> Within 15 days Employer, employees, OSHA Usually has good results

26

Citations and Penalties			
	Company Name	Issuance Date	Total Issued Penalty
1	BP Products North America	10/29/2009	\$81,340,000
2	BP Products North America	09/21/2005	\$21,361,500
3	IMC Fertilizer/Angus Chemical	10/31/1991	\$11,550,000
4	Imperial Sugar	07/25/2008	\$8,777,500
5	O&G Industries, Inc.*	08/03/2010	\$8,347,000
6	Samsung Guam, Inc.	09/21/1995	\$8,260,000
7	CITGO Petroleum	08/29/1991	\$8,155,000
8	Dayton Tire (OKC)	04/18/1994	\$7,490,000
9	USX (aka U.S. Steel Corp.)	10/26/1989 11/02/1989	\$7,275,300
10	Keystone Construction Maintenance*	08/03/2010	\$6,623,000
11	Philip 66/Fish Engineering	04/19/1990	\$6,395,200

27



Egregious Policy



- OSHA may cite each instance of each violation or employee exposed in lieu of grouping violations
- Factors include
 - Number of fatalities
 - Facility has bad history
 - Employer seriously disregarded workplace safety
- Dayton Tire – OKC
 - Document review
 - Ignorance as a defense?
 - It's about "good-faith"

28



Employer Options



- If you agree
 - Correct the violation
 - Pay the Penalty
 - Submit abatement certification
- If you do not agree
 - Within 15 days request Informal Conference to contest the citation

29



Contested cases



- Within 15 days
 - Includes time for informal conference if it occurs
 - Informal Conference strongly recommended
- If informal conference does not resolve differences, employer may contest:
 - Citation
 - Proposed penalty
 - Notice of failure to correct
 - Time allotted
- The Contest must be posted in the workplace
 - Keep employees in the loop

30



Tips to survive an inspection



- Allow access
 - Show them what they want to see, but nothing more
- Be courteous
- Get documents ASAP
- Make every effort to correct problems immediately
- Take side by side photos/video/samples
- Request Informal Conference – Every Time
- Be transparent
- Be able to show good faith effort

31



You must be truthful



- All information that employers and employees report to OSHA must be accurate and truthful.
- Providing false information on efforts to abate cited conditions or in required records is punishable under the OSH Act.

32



Emphasis Programs



- National
 - <https://www.osha.gov/enforcement/directives/hep>
- Regional
 - Region VI – (TX, AR, LA, NM, OK)

33



Severe Violators



- What makes a Severe Violator?
 - a fatality or catastrophe inspection with one or more willful or repeated violations or failure-to-abate
 - non-fatality/catastrophe inspection with two or more willful or repeated violations or failure-to-abate notices that are high gravity violations related to High-Emphasis Hazards
 - A non-fatality/catastrophe inspection with three or more willful or repeated violations or failure-to-abate notices that are high gravity violations related to the potential release of a highly hazardous chemical
 - An egregious (e.g., per-instance citations) case
- <https://www.osha.gov/enforcement/directives/cpl-02-00-149>

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SEVERE VIOLATORS

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Variances & Interim Orders



- What is a Variance?
 - A variance permits an employer or class of employers to depart from the requirements of an OSHA standard under specified conditions.
- What is an Interim Order?
 - An interim order allows an applicant for a variance to use its proposed alternate means of protection, on a temporary basis, until OSHA renders a final
 - An applicant that would like OSHA to grant it an IO should include such a request with its variance application.

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Variances From Standards



- Reasons for request
 - Standards cannot be met
 - The industry does a better job than the standard
- Types of variances:
 - Temporary
 - Statement of inability to comply
 - Description of steps to insure safety
 - Statement of when compliance will take place
 - Certification that employees have been notified
 - Permanent
 - Description of countermeasures used or proposed
 - Statement of how countermeasures will meet standards
 - Certification that employer has informed employees

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Temporary Compliance Variances



- When an employer is unable to comply with a new standard immediately but may be able to if given time, a temporary variance may be requested. OSHA will grant such a variance up to a maximum of one year. Employers must
 - Demonstrate that they are making a concerted effort to comply and
 - Must take the steps necessary to protect employees while working toward compliance
 - https://www.osha.gov/dts/otpca/variances/variance_s_ineffect.html

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Permanent Compliance Variances



- Employers who feel that their workplace already exceeds the (performance) requirements of a new standard (but not the details) may request a permanent variance and must present their evidence to OSHA for inspection. Employees must be informed of the application for a variance and notified of their right to request a hearing.
 - https://www.osha.gov/dts/otpca/variances/denied_withdrawn95-10.html

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Employee Appeals



- Employees may appeal the following aspects of OSHA's decisions regarding their workplace:
- The amount of time (abatement period) given an employer to correct a hazardous condition that has been cited
- An employer's request for an extension of an abatement period

40



Services Available from OSHA



- Services available from OSHA include:
- Consultation
- Voluntary inspection programs
- Challenge
- Training/education
- VPP

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Consultation Assistance



- Provided at no cost
- For smaller employers with more hazardous operations
- Delivered by state (OKDOL)
- No penalties or citations
- Violations not reported to OSHA



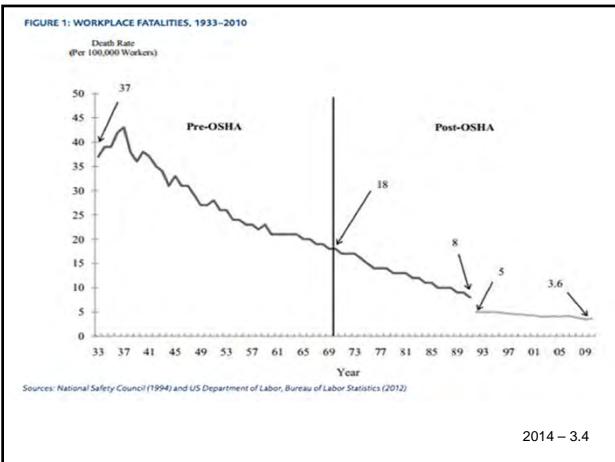
42



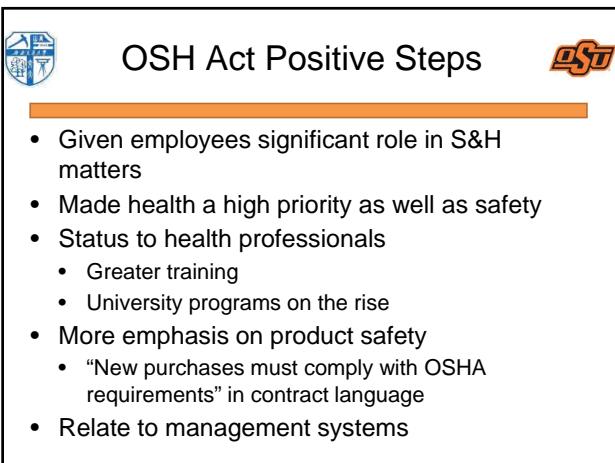
Has OSHA Made a Difference?

- Since 1970 OSHA has:
 - Helped cut the work-related fatality rate in half
 - Worked with employers and employees to reduce workplace injuries and illnesses by 40%
 - Virtually eliminated brown lung disease in the textile industry, and
 - Reduced trenching and excavation fatalities by 35%

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45



Emphasis Programs



- NEP – National Emphasis Programs
 - <https://www.osha.gov/dep/neps/nep-programs.html>
- REP – Regional Emphasis Programs
 - <https://www.osha.gov/dep/leps/leps.html>

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Voluntary Protection Programs (VPP)



- “Best of the Best”
- Comply with all applicable OSHA standards
- “Voluntarily” implement required elements of a SMS
- Recognition
 - Star
 - 3-year renewal
 - Merit
 - Annual renewal
 - Demonstration
- <https://www.osha.gov/dcsp/vpp/charts/presentation.html>

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OSH Act Limitations



- Control only over physical conditions
 - Does compliance = safe?
 - Does not address behavioral issues
- Does not address
 - Human – machine interaction
 - Ergonomics
 - Supervisor Training
 - Work procedure development
 - Job instruction training

48



Safety Manager Roles



- Use knowledge based on experience, education, training, and instincts to comply with corporate safety programs, if one exists
 - Determine what's applicable
 - Avoid liabilities associated with injuries and loss of customer confidence
- Track and maintain relevant data records to satisfy regulatory obligations

49



Safety Manager Roles



- Key member in compliance team reducing liability by preventing injuries and regulatory citations
- Participate in Worker's Compensation
- Stay abreast of regulatory changes
- Ensure inspections by third-parties are transparent

50



Determining Applicable Standards



- Main responsibility
- Be intimately knowledgeable of facility processes
 - Machine design and function
 - Process chemistry
 - Interaction between humans and machines
- Understanding of other agencies involvement
 - EPA – Environmental Protection Agency
 - DOT – Department of Transportation
 - NRC – Nuclear Regulatory Commission
- 29 CFR 1910 Table of Contents
 - OSHA's Top 10

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OSHA Top 10	
•2018	•2019
1.Fall Protection (1926.501)	1.Fall Protection – General Requirements (1926.501)
2.Hazard Communication (1910.1200)	2.Hazard Communication (1910.1200)
3.Scaffolding - General Requirements (1926.451)	3.Scaffolding (1926.451)
4.Respiratory Protection (1910.134)	4.Lockout/Tagout (1910.147)
5.Control of Hazardous Energy - Lockout/Tagout (1910.147)	5.Respiratory Protection (1910.134)
6.Ladders (1926.1053)	6.Ladders (1926.1053)
7.Powered Industrial Trucks (1910.178)	7.Powered Industrial Trucks (1910.178)
8.Fall Protection – Training Requirements (1926.503)	8.Fall Protection – Training Requirements (1926.503)
9.Machine Guarding– General Requirement (1910.212)	9.Machine Guarding (1910.212)
10.Personal Protective and Lifesaving Equipment – Eye and Face Protection (1926.102)	10.Personal Protective and Lifesaving Equipment – Eye and Face Protection (1926.102)



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FPST 3013 Safety Management

Workers' Compensation
&
The Americans with Disabilities Act
Part 1



1

In the beginning...

- Hammurabi's Code in 1750 B.C.
 - doctrine of "lex talionis," or the laws of retribution
 - "eye for an eye"
- Ancient Sumeria (now Iraq),
 - The law of Ur-Nippur Tablet No, 3191
 - Earliest known written legal code
 - Provided for compensation for injury to a worker's specific body parts.



2

In the beginning...

- Ancient Arab law
 - The loss of a thumb was worth one-half the value of a finger.
- Ancient Greek, Roman and Chinese law
- The common denominator in these early schemes was the compensation or "**schedules**" for specific injuries which determined specific monetary rewards.

3



Middle Ages



- Feudal System
 - Kings and Nobles
 - Arbitrary Benevolence
 - Doctrine of "Noblesse Oblige"
 - Lords take care of their injured serfs



4



Mid 1600s



English privateer Capt. Henry Morgan

- Ship's constitution
- "recompense and reward each one ought to have that is either wounded or maimed in his body, suffering the loss of any limb, by that voyage."
- The loss of a right arm = 600 pieces of eight;
- left arm = 500 pieces of eight
- right leg = 500 pieces of eight
- left leg = 400 pieces of eight

.... and so forth.



5



English Common Law - 1066



- Required the employer to furnish safe workplaces
 - Provide safe tools
 - Knowledge of hazards not immediately apparent
 - Competent fellow employees
 - Rules by which all could work safely



6



English Common Law



A Contractual Agreement

- Employee/Employer agree to exchange a specified level of work/service for compensation
- Based on presumption that employee was free to choose employment (Employment at Will)

7



19th Century



- Industrial Revolution and Expansion
 - Injured employee had to sue for negligence
 - Costly
 - Time-consuming
 - Corporate deep pockets
 - Courts usually ruled in favor of employer

8



Unholy Trinity of Defenses



• Contributory Negligence

- If worker was responsible for injury – the employer was not at fault
- 1930 Martin v. the Wabash Railroad, in which a freight conductor fell off his train.
 - Although inspectors subsequently blamed a loose handrail, his injuries did not receive compensation because inspecting the train for faulty equipment was one of his job duties.

9



Unholy Trinity of Defenses

- Fellow Servant Rule
 - Employers are not liable if the worker's injuries resulted in any part from the action or negligence of a fellow employee.
 - 1837 Priestly vs. Fowler
 - Butcher boy crushed by a wagonload of mutton

10



Unholy Trinity of Defenses

- Assumption of Risk
 - Employees know of the hazards of any particular job when they sign their contracts. Therefore, by agreeing to work in a position they assume any inherent risk it carries.



11



Friendly Societies



- Earliest form of WC insurance
- Laborer's could buy disability insurance for themselves
- Left up to civic and religious organizations to fill the gaps.

12



After an Injury...



- Lawsuit (Tort) was employee's only recourse
 - Proving negligence difficult, costly, time consuming
 - Burden of proof was on the employee
- Fear of retaliation, job loss
- Courts biased toward Employers



13



Courts favored the Employer



- Triangle Shirtwaist Fire (1911)
 - \$75 per claimant
 - 2 yrs later

14



Courts favored the Employer



- Hawks Nest Tunnel Silicosis (1930-31)
 - 476 - 3000 deaths
 - \$130,000 in total
 - \$20K in secret deal to attorneys
 - \$400-\$1000 per claimant
 - Most families got nothing



15



Otto von Bismarck, Chancellor of
Prussia



- 1870's
- Socialism and Progressivism (and ultimately, Communism) is sweeping across Europe
- Employers liability law of 1871
- Workers' Accident Insurance of 1887



16



Upton Sinclair



- 1906 "The Jungle", a novel
 - follows Lithuanian immigrant Jurgis Rudkus
 - Chicago Meatpacking Industry
 - "Packingtown"

17



Workmen's Compensation Laws



- Great Britain in 1880, 1893
- Early US laws
- 1902 – Maryland – unconstitutional
- 1908 – Massachusetts – dead letter with no significance
- 1908 – Federal employees – T. Roosevelt
 - Federal Employees' Compensation Act (FECA)
 - The burden of the accident fell on the helpless and his family...“an outrage”
- 1909 – Montana – miners – unconstitutional
- 1910 – New York – unconstitutional
 - Wainwright Law
 - Declared unconstitutional the same day as the Triangle Shirtwaist fire – March 25th, 1911
- 1911 – Wisconsin – passed but later was declared unconstitutional
- 1915 – Oklahoma law enacted
- 1916 – US Supreme Court declared constitutional
- Last were passed in 1948
 - Mississippi
- Only state where it is optional is Texas

18



Objectives



- Benefits regardless of fault
 - "no-fault"
- Single remedy
 - AKA "sole" or "exclusive" remedy
- Relieve public funding
- Eliminate time consuming litigation
- Stimulate employer interest in safety
- Promote study of causes vs. fault

19



Exclusive Remedy



- Early on, burden of proving negligence was on employee
- Under Comp law, employers are responsible for injuries "arising out of and in the course of employment" regardless of fault
- In exchange, employees give up right to sue for unlimited damage in civil court
- Two concepts broaden exclusive remedy
 - **Dual capacity doctrine**
 - Injury caused by employer product or service available to the public
 - Intentional tort exception
 - Wilful and wanton negligence

20



Covered Injuries



- "Arising out of and in the course of employment"
 - Four doctrines of determination
 - Peculiar-risk
 - Specific to the employment
 - Different from every other worker
 - Increased-risk
 - More risk than the general public
 - Actual-risk
 - Specific to the job regardless of exposure to the public
 - Positional-risk
 - The "but for" test
 - "but for" the employment, the injury would not have occurred

21



Limitations on Coverage



- Covered Employment
 - Limited coverage – not everyone is covered
 - Farming
 - Domestic service
 - Occasional employment
 - Federal Workers - (FECA)
 - Federal Employer's Liability Act (FELA)
 - Not a workers' comp law
 - Allows employees to charge employer with negligence and employer can not use common law defenses (fellow servant, assumption of risk or contributory negligence)
 - Other groups not covered
 - Self-employed
 - Un-paid family workers
 - volunteers

22



General Characteristics



- Necessary "evil"
- Worker's could sue under common law
- Awards were left to juries
 - Employer view
 - Awards are too high
 - Employee view
 - No awards = litigation debt
- Comp law specifies benefits regardless of fault
- Litigation happens for two reasons
 - Did injury "arise out of and in the course of employment"
 - Doing thy master's bidding?
 - Degree of injury
 - Soft tissue injuries
 - Sometimes subjective complaint is only evidence

23



Workers' Comp Benefits



- Income replacement
 - Waiting period before you receive benefits
 - Benefits are retroactive
 - Oklahoma - If you are off work due to your injuries for more than 7 calendar days after your injury, you may be entitled to weekly **TTD** benefits. No TTD benefits are authorized for the first 7 days after the injury unless the Court determines you were temporarily totally disabled for more than 21 days.
- Medical benefits
 - Employer can direct care in about 50% of the states., often chosen by the insurance carrier
 - Employees may feel that the company has its own interests at heart
- Rehabilitation
 - Medical
 - Vocational
 - Training to do another job so an injured employee can earn a living
 - Medical care, counseling, training, job placement

24



Income Replacement



- Adequate, equitable, prompt, sure
- Worker pays portion – incentive to return to work
- Most states use 2/3 replacement
- Oklahoma is full wages up to 70% of the average weekly wage in the state
 - Income is not taxable
 - Low wage workers viewed as being at an advantage
- Unsafe industries pay more

25

http://www.owcc.state.ok.us/site_index.htm



Compare a few States



State	Waiting Period	Comp Rate % base salary	Max weekly \$\$	TTD Max	PPD max
Oklahoma	3 days	70%	\$550	156 weeks	500 weeks
California	3 days	66.67%	\$600	Duration	Unlimited
Texas	7 days	70-79%	\$550	104 weeks	401 weeks
Colorado	3 days	66.67%	\$650	Duration	Duration
Kansas	3 days	66.67	\$425	Duration	415 weeks
Iowa	3 day	80%	\$1,103	Duration	500 weeks
North Carolina	7 day	66.67%	\$991	Duration	500 weeks

26



Types of Disability



• <u>TPD</u> – Temporarily Partially Disabled
• Light Duty <ul style="list-style-type: none">• May work a half day then go home the other half• Employee entitled up to 80% of their pay
• <u>TTD</u> - Temporarily Totally Disabled
• Lost Time
• Employee entitled to full pay up to the average weekly wage for the state <ul style="list-style-type: none">• Currently \$528 per week (going to \$577 on 11/1)• No compensation for the first 3 calendar days missed

27



Types of Disability



- PPD - Permanently Partially Disabled
 - "Benefit" given through the court after an employee has reached MMI (Maximum Medical Improvement) and has been rated according to the American Medical Association (AMA) guidelines
 - 70% of the employee's average weekly wage up to a maximum of 50% of the State's average weekly wage (currently \$264 going up to 289 on 11/1)
- PTD - Permanently Totally Disabled
 - Unable to do any work...ever

28



Typical Case Flow



- Injury
- TTD and treatment (lost time) – Max 300 weeks
- TPD and treatment (light duty)
- MMI and return to regular work
 - Could have permanent restrictions
- PPD – Max 500 weeks
 - AMA (American Medical Association) rating
 - Usually given to some extent for surgery and permanent restrictions
 - Depends on AMA rating
 - Paid in "number of weeks" not lump sum, except if some of the total number of weeks have passed
 - https://ok.gov/wcc/Alerts/Benefit_Charts/index.html
 - Determining the degree of disability is responsible for more litigation than any other Work Comp issue
- Close

29



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FPST 3013
Safety Management

Workers' Compensation &
The Americans with Disabilities Act

Part 2

1

Coverage

- Self-insured
- Insurance
 - Policy holder pays premium
 - Rates are set by **experience**
 - Credits, discounts given for good performance
 - Liability maximums
 - Deductibles
 - Payments made on claims
 - Highly regulated than other types of insurance

2

How to Calculate a WC Premium

Three Factors for calculating Workers' Comp Premiums:

- Size of the employer's payroll (per \$100)
- Employee job classifications
- Company's claims experience

• **Annual Payroll/100 x classification rate x Experience modifier**

3



- ABC Trucking
 - \$453,000 annual payroll
 - Scopes Code Rate: 7229, Trucking-Long Haul
 - Premium $453,000/100 \times 13.71$ or \$62,106
 - Scopes Manual sets the classification rate

<https://classcodes.com/workers-compensation-class-codes/>

4



Some Sample Scopes Rates



Code	Profession	Rate Per \$100 payroll
8810	Clerical	0.40
5645	Carpentry	25.00
7229	Trucking	13.71
5057	Steel Erection	23.56

NCCI has 550 classification codes in the Scopes Manual
Rates vary by state

5



Experience Modifier



- 3 year average of losses
- Average = 1.0
- If a company has an experience modifier of .73, they will pay only 73% of their manual premium.
- This effectively gives the company a 27% discount, and reflects the company's lower than average losses, claims and injuries.

6



ABC Trucking

\$453,000 payroll and is
Scope Manual Code 7229, Trucking-Long Haul.

Premium 453,000/100 X **13.71** or \$62,106.

Premium	E-Mod	Discount/Penalty	New Premium
\$62,106	0.73	-\$16,769	\$45,337
\$62,106	1.00	\$0	\$62,106
\$62,106	1.43	+\$26,706	\$88,812

7

Disadvantages for State Run Systems

- Companies who operate internationally
 - Separate policy
- Employees who travel across states
 - Extraterritoriality – limited coverage follows
 - Reciprocity – receiving state acknowledges sending state's coverage
- Inconsistent benefit levels
- Rate competition across states
- State politics can impact programs

8

So why not adopt a Federal System?

- Brings up Federalism issue
 - 10th amendment to the US constitution
 - "The powers not delegated to the US by the Constitution, nor prohibited by it to the states are reserved to the states respectively, or to the people."
- OSHA Ergonomics Standard (2001)
 - New benefit system for MSD injuries
 - Vigorously opposed by insurance, states, and business
- Healthcare for all
 - Clinton's Health Care Reform Act (mid 90's) tried
 - Affordable Healthcare Act (Obamacare)
- No direct effect on Workplace injuries and illnesses

9



Disputes



- Disputes over pay, length of benefits, degree of disability,
 - Arbitration in many states
- Court System in some
 - Administrative System
 - OK switched from Court to Admin in 2013

10



Medical Treatment



- Most laws have full coverage for medical treatment \$\$
- Some limit the liability after return to work
 - Limit the medical for 5 years after RTW
- Physician Choice
 - Employer selects
 - Employee can change later
 - http://www.owcc.state.ok.us/employees_faq.htm

11



Goals of Medical Management of Workplace Injuries



- The goals of medical management of workplace injuries are to:
 - Speed up the processing of claims
 - Reduce costs
 - Reduced fraud and abuse
 - Improve medical management

12



Managing Workers' Compensation



- Objectives
 - Prevent accidents
 - Control costs
 - Respond to accidents promptly
- Hiring
 - Pre-employment physicals
 - Americans with Disabilities Act – ensure you are avoiding discrimination
- Incident Reporting
 - Must have solid system of documenting, investigation and follow-up
- Physicians and Medical Institutions
 - Meet with them. Discuss your restricted duty program
- Follow-up
 - Get worker back to work as soon as possible

13



WC - The Three Constituents



Insurance Company

- Profitability
- Economic stability

Delicate Balance

Employee

- Medical Expenses
- Wages Replacement
- Rehabilitation
- Death Benefits

Employer

- Limited Liability
- Cost Containment

Source: Scott Szymendera, Michigan State University (2004)

14



What makes an employee hire a lawyer?



- Denial of Benefits
 - Course and scope of employment
 - Disability disputes
- Lack of Communication
- Hope for a lump sum settlement
- Feeling that the employer doesn't care
- Fraud

15



Fraud



- Small but significant Warning signs
 - Never home or available by phone
 - Coincides with layoff, termination, etc.
 - Active in sports
 - Has another job
 - In line for early retirement
 - No organic basis for injury
 - Known to have skills marketable for cash
 - No witnesses
 - History of claims
 - Contradictory doctor's reports

16



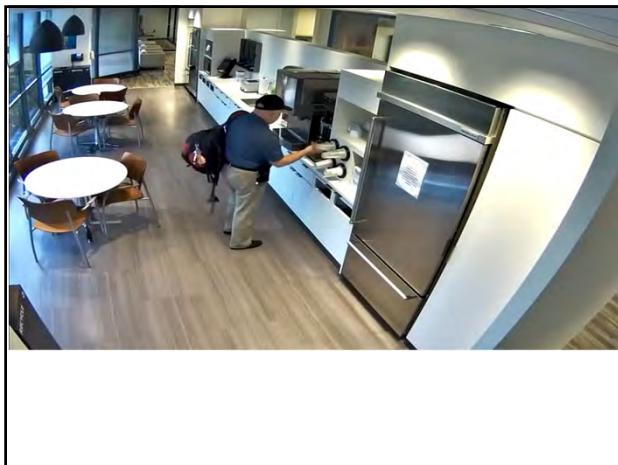
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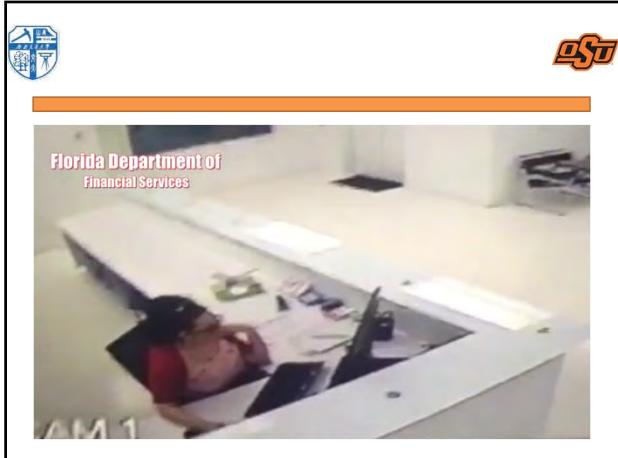
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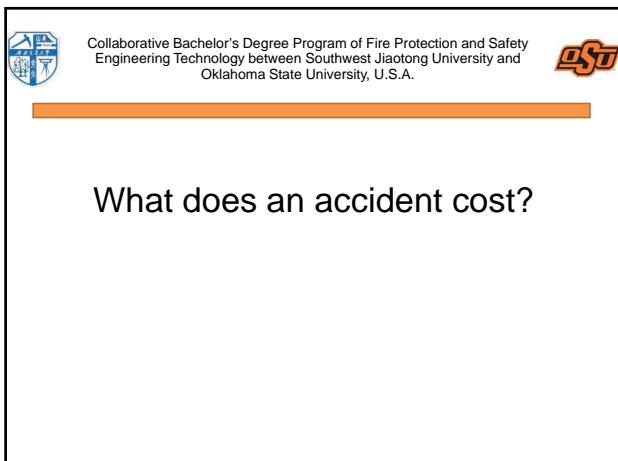
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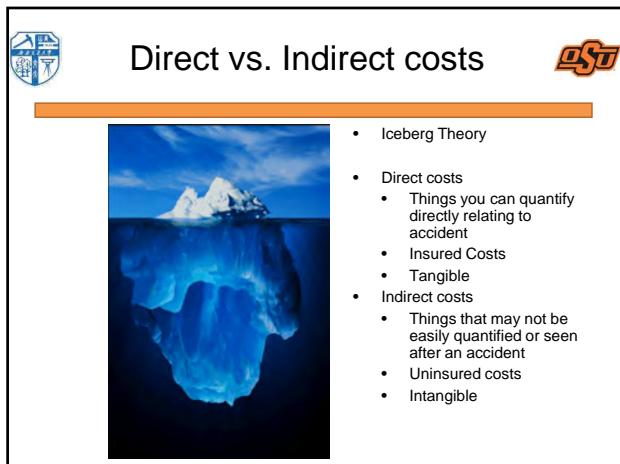
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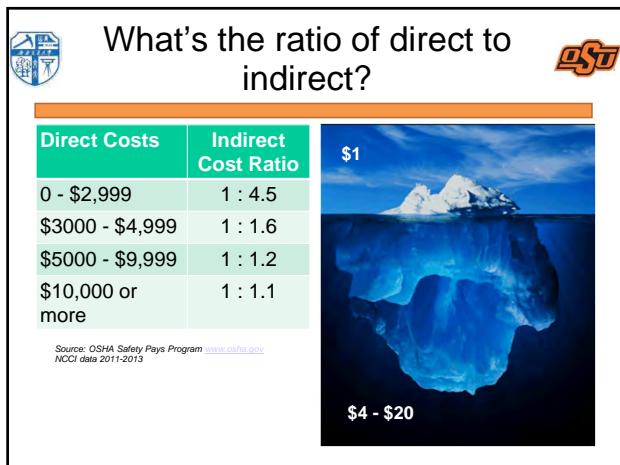
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22



23



24



Congressional Purpose ADA -
1990

"The purpose of the ADA ... is to provide a clear and comprehensive national mandate to end discrimination against individuals with disabilities and to bring those individuals into the economic and social mainstream of American life."

25

ADA Definition of Disability

• A legal term, not a medical term

- a physical or mental impairment limits one or more major life activity; or
 - that substantially limits one or more major life activities of such an individual; or
- a record of such an impairment; or
 - e.g. person with history of physical or mental illness, even if impairment does not currently exist; e.g. person who suffered heart attack; former cancer patients; recovered alcoholics or drug addicts
- being regarded as having an impairment
 - e.g. parents or caretaker of child with AIDS or even a severely disfigured burn victim

26

Examples of Impairments

• Physical

- physiological conditions or disorders,
- cosmetic disfigurement or
- anatomical loss covering of any of the body systems
 - cancer, diabetes, muscular dystrophy, epilepsy, cerebral palsy, paraplegics, but also covers asthma and HIV and AIDS and alcoholism and drug addiction

• Mental

- Mental or psychological disorder
 - mental retardation, organic brain syndrome,
 - emotional or mental illness
 - learning disabilities

27



ADA Title I



- Prohibits discrimination in all phases of employment
 - hiring, advancement, termination, compensation or other terms of employment
- Must provide or at least investigate "Reasonable Accommodation" for a qualified person with a disability who is able to perform the essential functions of the job

28



Reasonable Accommodation by Employers



- Statute itself lists several examples:
 - physical accessibility (internal and external) must be done
 - job restructuring may be called for or re-design of office procedures
 - flex time; shift adjustments
 - modifying equipment (hardware and software)
 - changing examination procedures
 - providing qualified readers, interpreters and attendants

29



Reasonable Accommodation



- Not reasonable if cost creates "undue financial hardship" on employer
 - Case by case determination based on:
 - nature and cost of accommodation
 - financial resources of employer

30



Health and Safety Defense



- Employees can't pose a direct threat to the health or safety of other individuals in the workplace
- Reasonable accommodation is still required
- Four factors in evaluating the direct threat defense
 - i. duration of the risk
 - ii. nature and severity of the potential harm;
 - iii. likelihood that potential harm will occur;
 - iv. the imminence of the potential harm.

31



Pre-employment Screening



- Tests which screen out persons with disabilities must be job related and have business necessity
- Tests which measure aptitude, physical agility, intelligence and specific skills are not considered to be "medical examinations" under the ADA
- Screening tests must test
 - Essential functions of the job,
 - Must be accurate predictors of successful performance on the job
- Cannot segregate or classify jobs or applicants by disability
- Cannot make pre-employment tests a screening device for people with disabilities
- Cannot make pre-employment medical tests condition of job offer unless essential part of the job

32



Pre-Employment Screening



- ADA Rules for Medical Examinations
- **Medical examinations are prohibited until after employers have made a job offer to the applicant.** There are no exceptions.
- Employment can be conditional on the results of an applicants post-offer medical examination
- Cannot give an examination to some and not to others

33



Case Study



- Ramjack Company, a small manufacturing facility with 60 employees.
- Mary has been working full time at the plant for two years as a widget packer.
- During the previous year she has missed 14 days of work, but never more than one or two days in a row.
- Under Ramjack's "zero tolerance" attendance policy, if Mary has one more absence this year, she will be terminated.

34



- On Friday morning, Mary calls in to say she will miss her second shift later that afternoon because she is having back pain.
- She has visited her doctor, who told her to stay in bed and see him again on Monday morning.
- Mary's back injury turns out to be serious, restricting her ability to stand and walk.
- She now contends that she injured her back while lifting a box at Ramjack.
- After nine weeks off Mary comes back to work and wants her old job back.

35



Mary Wants to Return to Work: What is Your Response?



- The severity of her condition, limiting her ability to stand and walk, will probably qualify her as disabled under the ADA.
- If she can perform the essential functions of her job, she is entitled to have her job back and entitled to reasonable accommodation.
- Mary is entitled to her original position or an equivalent position with equivalent pay and benefits if she can perform the essential functions of her job.
- Because Mary's injury was incurred on the job, she is eligible for Workers' Compensation benefits as well.

36



Mary Decides She Can't Do Her Job and Goes Home: Can She Do That?

- Upon her return to work after nine weeks, Mary discovers that she is still not able to do her job as a widget packer.
- You offer her light duty in the office, but she declines, and goes home for another three weeks.
- The light-duty work you offered Mary qualifies as a reasonable accommodation under the ADA.

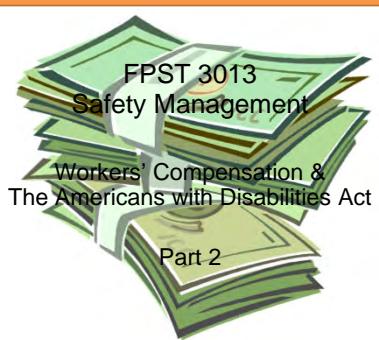
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Reasonable Accommodations: Is Mary Entitled to These Requests?

- When Mary returns after 12 more weeks, she wants her old job even though she is still experiencing back problems.
- She thinks she can do the job if she is given a tall chair to use while working, allowed to take a five minute walk every hour, and allowed to report to work a half-hour late on Fridays so she can see her doctor.
- Are these accommodations reasonable?
 - Yes because they pose no "undue hardship" to you as an employer.
- If Mary is able to perform her old job – with the accommodations requested – she ends TTD, and hopefully reaches MMI with her new, slightly modified job duties.

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39



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Engineering Technology between Southwest Jiaotong University and
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FPST 3013

Safety Management

Safety and Health Management – Part 1

1

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WHAT IS YOUR #1 CONCERN IN THE FOLLOWING PICTURE

2



SAFETY and Effective Photo

3



Safety



- What is it?
 - the condition of being safe from undergoing or causing hurt, injury, or loss
- What is Safe?
 - secure from threat of danger, harm, or loss
- How do you know when you are “safe”?
 - A feeling
- Safety is the felling of being free from the risk of harm

4



WHAT IS A SAFETY CULTURE?

5



Culture



- Definition of culture
 - Shared values, beliefs, behaviors of a group of people
- Definition of safety culture
 - Shared values, beliefs, behaviors of people in the workplace related to safety

6



Safety Culture



- "Those aspects of the organizational culture which will impact on attitudes and behavior related to increasing or decreasing risk".
 - Frank Guldenmund
 - International Council on Working Safety 2006
- "A safety culture reflects the shared commitment of management and employees toward ensuring the safety of the work environment".
 - NIOSH

7



Climate



- Climate
 - Underlying assumptions, values, norms and expectations of an organization
- An active safety culture
 - Believe in safety for themselves and others
 - Act as if safety matters
 - Feel part of something bigger
- Maybe better termed as a "Culture of Safety"

8



Participants in creating a safety culture



- Chief Executive Officer
- Plant Management Team
- Front-line Supervisors
- Workers
- Union
- Purchasing
- Safety Professional
- Barriers to a positive safety culture
 - "Us" vs. "them"
 - Not just in a union environment
 - Workers' negative perceptions of Management
 - Management's negative perceptions of Workers
 - Never-ending struggle

9



Priority vs. Value



PRIORITY

- A precedence established by order of importance or urgency.

VALUE

- A principle, standard, or belief, considered worthwhile or desirable.

Source: American Heritage Dictionary

10



WHY DO SAFETY CULTURES FAIL?

11



Columbia Space Shuttle Disaster 2003



- "Cultural traits and organizational practices detrimental to safety were allowed to develop"
- "a reliance on past success as a substitute for sound engineering practices"
- "organizational barriers that prevented effective communication of critical safety information"

CAIB report

12



Fukushima Nuclear Disaster, 2011



Japanese Cultural Traits

"Its fundamental causes are to be found in the ingrained conventions of Japanese culture: our reflexive obedience; our reluctance to question authority; our devotion to 'sticking with the program'; our groupism; and our insularity."

Fukushima nuclear accident independent investigation commission.



13

Safety Culture Failure

- Lack of Management Commitment
- Lack of Employee Involvement
- Atmosphere of Distrust/Fear
- Lack of Money
- Lack of Time
- Lack of Leadership

14

Poor Leadership model

Engineering Contractors Admin Communications
Maintenance Business Development Purchasing

- Uncontrolled
- Lack of Leadership
- Lack of Management support and Commitment

15



Better Leadership model

The diagram illustrates the Better Leadership model. On the left, a vertical list of organizational departments is shown: Production, Business Development, Customer Relations, Engineering, Purchasing, Quality, EHS, Human Resources, Communications, Admin, and Contractors. An orange bar above this list is labeled "Organization". A large green arrow points from this list towards the right, with the word "Mission" written at its tip. Inside the arrow, the text "Leadership is the magnet that aligns the driving force for developing a safety culture" is displayed. Below the arrow, a small note states "Safety isn't 'Safety' anymore, it's organizational effectiveness". On the far right, there are six horizontal lines for writing notes.

16

Safety and Health Management Systems

Workplace Safety

The cartoon shows six panels illustrating common stereotypes about workplace safety:

- What my mom thinks I do: Three people in safety vests and hard hats looking at a clipboard.
- What my friends think I do: Two people in casual clothing, one holding a power drill.
- What my spouse thinks I do: A man in a suit and tie holding a smartphone.
- What society thinks I do: Two people in bed, one wearing a hard hat.
- What I secretly think I do: A man in a Superman t-shirt.
- What I actually do: A person wearing a respirator mask and safety glasses working on a computer.

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What is a System?

A system is a grouping of **interrelated** and often **interdependent** components brought together in nature or in the manufactured world to **achieve a common objective** or perform a common function.

Below the text, there are six horizontal lines for writing notes.

18



19

What is a Management System?



- A management system may be described as a structure and set of processes, procedures, policies and/or actions that an organization implements to achieve a defined objective or perform a common function in an efficient, structured way.

20

What is a Safety Management System?



- Systematic process
- Continuous improvement
- Integrated into business processes
- Organized and structured
- Reactive?
- Proactive?
- Both?
- To what end?

21



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As Safety Professionals,
How do we do what we do?

OSU

FEMA
CONFINED SPACES TRAINED
DANGER USE LOCKOUT BEFORE WORKING ON EQUIPMENT
OSHA

Industrial Hygiene

22

OSU

OSU

23

Whack-A-Mole

OSU

OSU

24

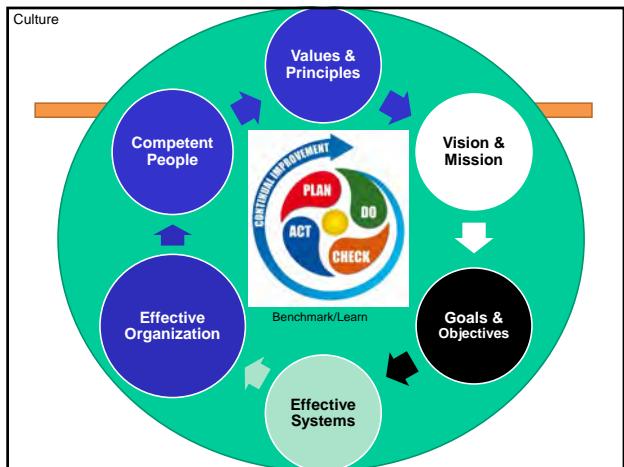


How do we apply this concept to safety management?

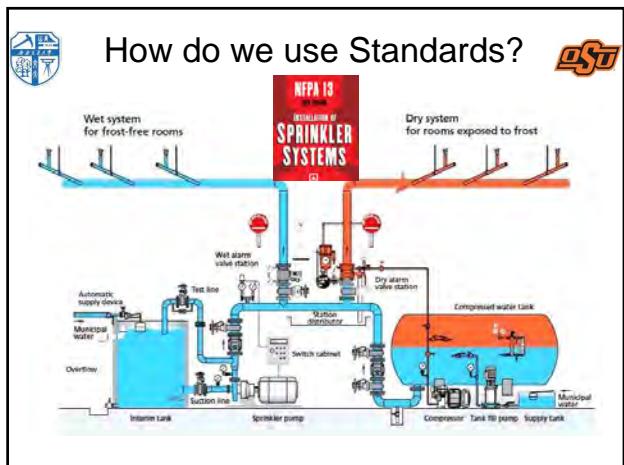


The diagram shows a cross-section of an industrial facility. Numbered callouts point to specific areas: 1 points to a storage tank; 2 points to a furnace or kiln; 3 points to a conveyor belt system; 4 points to a worker near a large piece of machinery; 5 points to a worker near a control panel; and 6 points to a worker near a stack of vertical cylinders.

25



26



27



21st Century Safety Management Systems

ANSI Z10	OHSAS 18001 ISO 45001
OSHA VPP	OSHA SHPMG

28

ANSI Z10

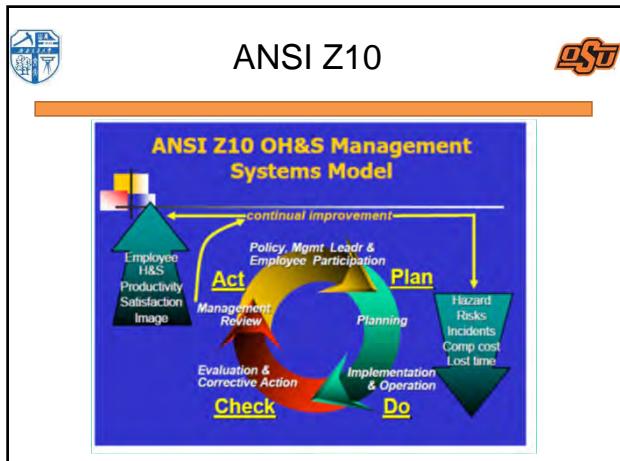
• Emphasizes continuous improvement
• Systematic elimination of underlying or root causes of deficiencies
• Adopts principles from the most relevant approaches into a standard compatible with principal national & international standards
• e.g., ISO & OSHA VPP
• ASSP article

29

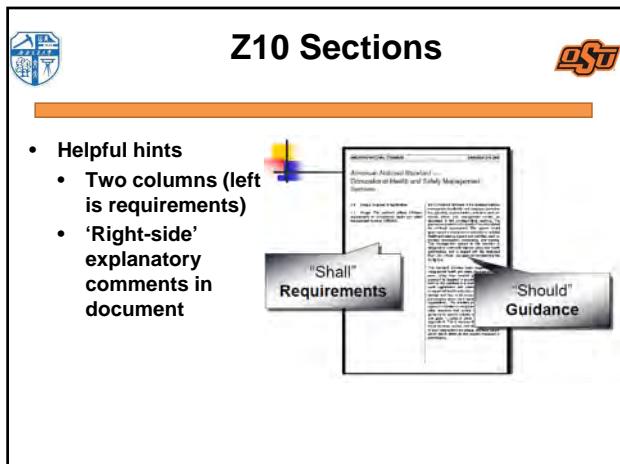
ANSI Z-10 Occupational Health and Safety Management Systems

• Management Leadership
• Employee Involvement
• Planning Assessment Process
• Establish Objectives and Action Plans
• Implement Processes
• Monitoring and Measurement
• Management Review

30



31



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33



OSHA S&H Program Management Guidelines

- Seven core elements:
 - Management leadership
 - Worker Participation
 - Hazard identification and assessment
 - Hazard prevention and control
 - Education and training
 - Program evaluation and improvement
 - Coordination and Communication on Multi-Employer Worksites

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OSHA S&H Program Management Guidelines

- OSHA Programs that follow same format
 - VPP
 - Voluntary Protection Program
 - OSHA Challenge
 - SHARP
 - I2P2

35

ISO 45001

- Replaced OHSAS 18001 in 2018
- OHSAS**
 - Thirteen co-operating organizations from around the world assisted in its development
 - Spain, Malaysia, United Kingdom and several other European standards organizations
 - Published in April 1999 by British Standards Institution
 - It was not a formal standard, nor was it an official International Standard
 - Not mandatory - voluntary basis

→

36



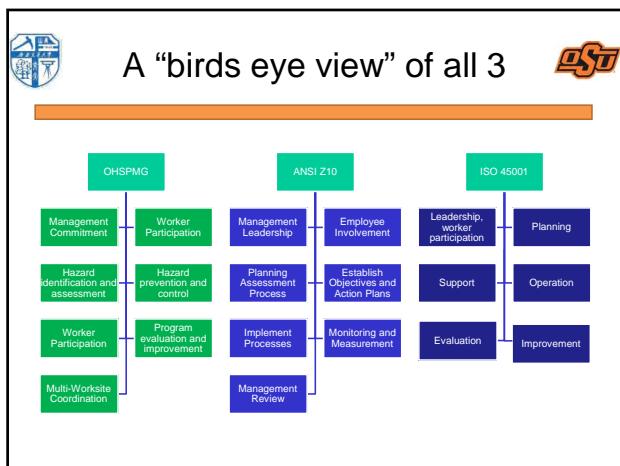
ISO ELEMENTS

NORMA
INTERNACIONAL
ISO
45001
Sistemas de gestión de la seguridad y salud en el trabajo — Requerimientos con orientación a los riesgos y la salud — Requisitos para la certificación

OH&S management system elements:

- Leadership, worker participation and consultation
- Planning
- Support
- Operation
- Performance evaluation
- Improvement

37



38



39



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THE SAFETY PROFESSIONAL'S ROLE IN CULTURAL DEVELOPMENT



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FPST 3013
Safety Management

Safety and Health Management – Part 2

1

**THE SAFETY PROFESSIONAL'S
ROLE IN CULTURAL DEVELOPMENT**

2

**WHAT IS IT THAT YOU ARE
TRYING TO GET PEOPLE TO DO?**

3



BE SAFE?

4



BEHAVIORS AT WORK

5



6



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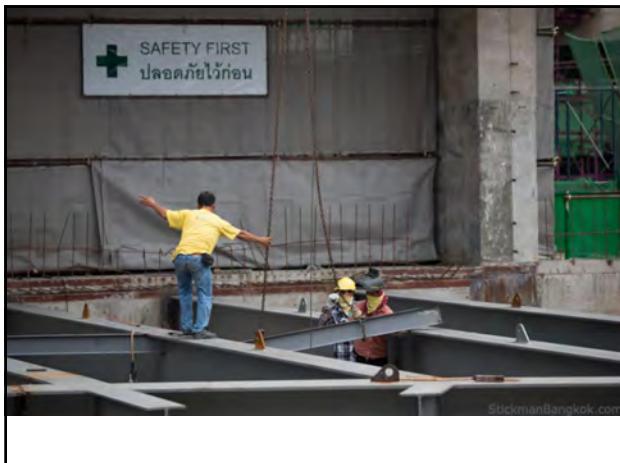


Compliance Solution LLC (c)

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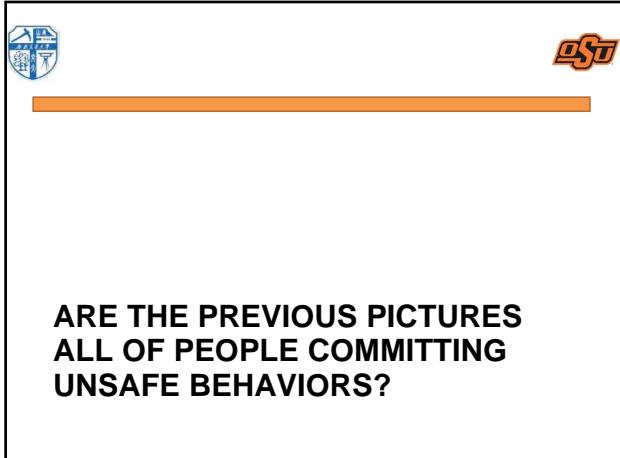
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24



Unsafe Behaviors



- There are only two reasons why someone does something unsafe...what are they?

They did not know what they were doing was unsafe

or

They knew what they were doing was unsafe and chose to do it anyway

25



Pg. 698

WHY DON'T PEOPLE DO WHAT THEY ARE SUPPOSED TO?

26



ATTITUDE VS. BEHAVIOR

27



Behaviors vs. Attitudes



- Behavior
 - Observable actions
 - Can be measured
- Attitude
 - Internal predispositions to behaviors
 - Difficult to observe
- **It is easier to change behavior than to change attitudes**
 - Getting a ticket for speeding or not wearing your seatbelt
 - Discipline systems

28



**SO HOW DO YOU GET
EMPLOYEES TO AVOID
COMMITTING UNSAFE
BEHAVIORS?**

29



Leadership's Role



- What is Leadership's role in getting employees to avoid committing unsafe behaviors?
 - Proper equipment and procedures
 - Education on equipment and procedures
- Is this it?

30



SAFETY CULTURE DEVELOPMENT

31



HOW DOES A COMPANY GET A SAFETY CULTURE?

32



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Safety Management

Safety and Health Management – Part 3

1

HOW DOES A COMPANY GET A SAFETY CULTURE?

2

All companies have a safety culture

- Is it what they want?
- Watch Video:
 - Creating a Safety Culture

3



Basic Requirements



- Acceptance of safety role by company leaders
 - CEO's speech
- Safety culture among workers
- Shared responsibility
- Safety as a way to recruit
 - Feelings of security and wellness

4



How do I get a Safety Culture?



- Understand their individual role for safety in the organization
- Accept the responsibility willingly
- Hold safety as a value
- Make each employee feel responsible for safety
- Be willing to go "above and beyond the call of duty"
- Demonstrate caring for others

5



The Steps Towards ~~Change~~



- Effective Safety Leadership Traits
 - Top-down actions by management
 - Set the example
 - Adequate and realistic training
- Auditing performance
 - Plan, Do, Check, Act
- Investing in safer equipment
- Frequent sharing and communication



6



Cultural Improvement



- Demonstrate commitment to the safety process
- Chart the course – Create the Vision
- Define roles and responsibilities
 - All levels of management
 - All employees
- Hold individuals accountable for their responsibilities
- Create climate that actively fosters employee engagement
 - Encourage employee participation at all levels.

7



Cultural Improvement



- To improve a Safety Culture
 - Principles, Values, and Beliefs
 - Accept Safety as a Value
 - Develop a workplace where everyone feels responsible for safety and pursues it on a daily basis in every aspect of the business.

8



Supporting a Safety Culture



- Managers must work on
 - Earning workers' trust by practicing what they preach
 - Acting in favor of safety when there is a choice
 - tool chain guard example
 - Involving employees in the process
- Management's other roles
 - Leadership
 - Annual evaluation including safety
 - Clear statements about injuries
 - Funding
 - Fix the system or process

9



Supporting a Safety Culture cont. OSU

- Management should provide positive employee setting
 - Well-designed and clean
 - Clear communication
 - Encouragement for employee feedback
 - Expression of positive values
 - Sense of moral and ethical concern
 - Measurements

10



Supporting a Safety Culture cont. OSU

- Focus less on blaming employees
- Focus more on safety planning
 - Risk Assessment
 - Prevention
 - Engineering
- Outside Resources
 - Government's Role – OSHA
 - Workers' Compensation
 - National Safety Council
 - Consensus standards

11



Supporting a Safety Culture OSU

- Employees must:
 - Hold safety as a value
 - Accept responsible for their own safety as well as the safety of their co-workers
 - Bottom-up individual line worker
 - Set the example
 - Peer pressure
 - Faith in company's commitment
 - Barrier is fighting stereotypes

12



The graphic features the logos of Southwest Jiaotong University and Oklahoma State University at the top. Below them is a large orange bar. The main text "TRANSFORM SAFETY CULTURE" is centered in bold black capital letters. The entire graphic is enclosed in a black rectangular border.

13

The graphic features the logos of Southwest Jiaotong University and Oklahoma State University at the top. Below them is a large orange bar. The main text is a quote by Lewis Carroll: "If you don't know where you want to go, then it doesn't matter which path you take." At the bottom, it is attributed to "Lewis Carroll, Alice in Wonderland". The entire graphic is enclosed in a black rectangular border.

14

The graphic is a matrix diagram titled "OSH Cultural Maturity" from the "Singapore Accord on the Standards of OHS Professionals". It consists of five columns: Pathological, Reactive, Calculative/Bureaucratic, Proactive, and Generative. Each column has two rows: Practitioner (top) and Professional (bottom). The matrix is color-coded: Pathological and Reactive are light green; Calculative/Bureaucratic, Proactive, and Generative are teal. The Practitioner rows describe basic safety approaches, while the Professional rows describe systematic and integrated management systems. The entire matrix is enclosed in a black rectangular border.

15



Transforming Safety Culture

- Change focus from short-term incident numbers to long-term system change
 - Majority of time it's a process problem, not a people problem
- Team development of incident prevention strategies and encourage ideas from users
 - Engage and empower employees
- Safety in design
 - Easier to build it in than to bolt it on
- Training in safe use

16



Influencing Attitudes

- Understanding where the risks exist
- Understanding what needs to be improved
- Involving workers in developing solutions and plans for avoiding risks
- Consistently improving and reinforcing safe work practices

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Developing a VISION for Safety

- Focused solely on Regulatory Compliance, or above and beyond compliance?
 - Industry Standards (ISO, WSO, VPP)
 - World Class Safety
 - Best Industry Practices
 - Hazard Prevention
- Begin with the End in Mind
 - What do we want our Safety Culture to look like?
 - What do you want to be?

18



Barriers to a Safety Culture



- **Inconsistency**
 - Blow smoke for safety in safety meetings and policy statements
 - Production takes priority in the heat of the moment
- **Obsolete Rules and Procedures**
 - Regulatory focused
 - Impossible to keep up with
 - Ensure that you all agree on what you say you are going to do
- **Us vs. Them thinking**
 - Unresolved conflicts
 - Past history
 - Blame the employee mentality
- **Leadership Deficiency**
 - Leaders don't follow rules
 - Encourage risk taking for the sake of production
 - Ineffective
 - Rick and Dave
 - Sometimes it's easier to change people than to change people

19



Accountability



- Accountability is a personal choice to rise above one's circumstances and demonstrate ownership necessary for achieving desired results.

20



Improving Safety Accountability



- Each member of leadership should have SMART Goals for Safety
 - Avoid "zero" accidents or focus on Incident Rates
 - Specific activities that can be accomplished
- Identify optional activities that managers and supervisors can accomplish to go "above and beyond"
- Develop a measurement system to track accountabilities
- Periodically review individual performance
 - Annually
 - Semi-annually
 - Quarterly
 - Monthly

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22



Writing SMART Goals



• Start with an Action Word
• Specify a single key result that is to be accomplished
• Specify a target date
• Specify what and when
• Avoid why and how

23



SMART or NOT SMART?



- Develop and implement a program to train and license fork truck drivers
- Improve safety performance next month
- Conduct weekly inspections and ensure hazards are corrected within 24 hours
- Our Goal is ZERO recordable accidents
- Reduce Recordable accidents by 5%
- Complete weekly tool-box talks with 100% attendance.
- Investigate all incidents

24

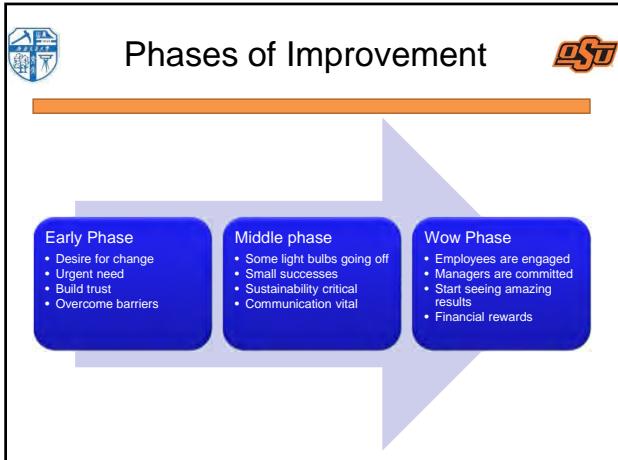


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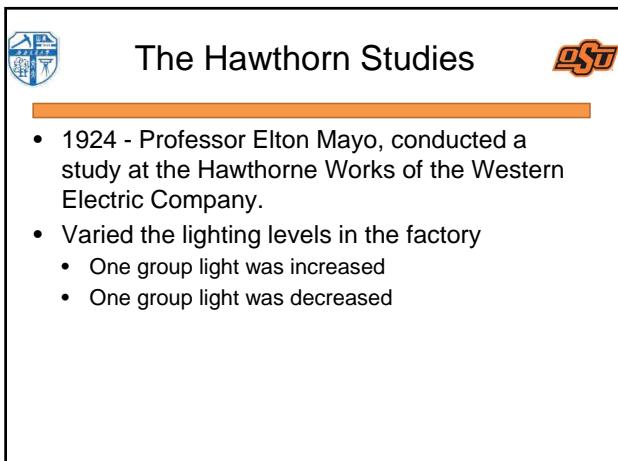


Principles & Values	People are our most important resource. Our company's principal responsibility is the safety and health of our employees. Every Employee is entitled to a safe workplace. No job is so important it can't be done in a safe manner. If its not safe, we will not do it.		
Vision/Mission	We will operate our facilities in a responsible manner that is consistent with regulatory requirements and industry best practices. We will constantly strive to improve our operations and practices to protect our people, our property and the world around us.		
Objectives	Reduce Incidents by 15% each year – ultimately striving for zero injuries		
SMART Goals	Complete 100% of OSHA required training for all 360 employees by the end of the 2018	Conduct 52 weekly toolbox talks in individual production crews. Each crew member will be responsible for leading one safety discussion this year.	Conduct Daily Housekeeping inspections at the beginning and end of each shift and correct any hazards noted before continuing work.
Strategies (Mgmt Systems)	Training Policies Funding Training Matrix Learning Objectives	Policy Time and Scheduling Labor Relations	Policy and Procedure Production Planning Maintenance Systems
Tactics	✓ Develop Materials ✓ Train trainers ✓ Conduct Training ✓ Track in LMS	✓ Develop Topics ✓ Train Trainers ✓ Document forms ✓ Tracking	✓ Schedule Audits ✓ Train Auditors ✓ Develop Checklists ✓ Track Corrective Actions

25



26



27



Hawthorne and Safety

Pre-Judgements	Findings	Safety Culture
Job Performance depends on the individual employee	The group is the key factor	Being involved in activities and provide input to leadership
Fatigue is main factor affecting output	Perceived meaning and importance of work determined output	Daily leadership through specific activities, employee ownership of safety is key.
Management sets production standards	Workplace culture sets its own production standards	Top management shows employees visible commitment to safety and is the driving force.

28

How do we engage employees in Safety?



29

Employee Engagement in Safety

- Must be meaningful
- Must be part of an overall leadership strategy
- Solicit leader's support
- Ongoing evaluation and continuous improvement

30



Employee Engagement in Safety

- Activities must drive success to reach safety goals
 - Does activity control or eliminate hazards?
 - Does activity teach employees to recognize hazards?
 - Does activity empower employees to take action?
 - Does activity help shape Safety Culture in organization?

31



Benefits of Employee Engagement in Safety

- Early Identification of Hazards
 - They have closest contact with hazards
- Identification of Training Needs
 - Better allocation of training dollars
- Identification of Safe Operating Procedures
- Identification of Best Practices
- Reduce hazards/risk = reduce incidents
- Increase in Employee Morale
 - Employees feel empowered

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Ways to Get Employees Involved

- Toolbox/Talks
- Peer reviews
- Safety Suggestions
- Safety Procedure Development & Review
- Perception Surveys
- Job Hazards Analysis
- Incident Investigation teams
- Self-Inspections
- Behavior Observations
- Who can do all the above besides the Safety Professional?
 - Safety committees!!!

33



Safety Committees



- Regular Meetings
- Discuss Issues
- Comprised of members of staff, employees, safety, etc. (recommend no management)
- Sometimes mandated by Union Rules
- Can be general or specific
 - Safety Steering Committee
 - Lock/Out Tagout Committee

34



Building a Safety Committee



- Tips For An Effective Safety and Health Committee
 - Larry Z. Sherman, CSP, CPCU, ALCM
 - Sherman Safety Management
 - <http://www.shermansafety.com/tips.html>

35



Tips For An Effective Safety and Health Committee



- Establish a Strong Management Commitment
- Establish a Clear Purpose and Set Goals
- Focus on Significant Hazards and Loss Sources
- Choose Members Who Are Interested in Safety
- Make Attendance Mandatory
- Require Active Participation by Each Member
- Encourage Input From All Employees
- Have an Agenda and Follow it
- Hold Meeting At The Same Time On The Same Day
- Take Actions On Committee Recommendations
- Assign Action Items And Require Follow-up
- Prohibit Non-safety Related Items
- Take Good Minutes And Keep Good Records
- Train Members In Safety And Health Issues
- Give Members Time For Their Duties And Responsibilities
- Have a Competent Safety Professional as a Resource

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Safety Committees



Advantages

- Open Communication
- Forum for Concerns
- Education & Training
- Brainstorming Ideas
- Problem Solving
- Synergy

Disadvantages

- Gripe Session
- Groupthink
- Inter Org Politics
- Can grow stale
- Membership
- Attendance
- No Action

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Job Hazard Analyses



Advantages

- Encourages safe work practices
- Empowers employees
- Facilitates communication
- Provides training
- Feedback
- Problem solving
- Continuous improvement

Disadvantages

- Without training, can be done incorrectly
- Paperwork burden for updating
- Parallel/conflicting Analysis
- Lack of action
- Lack of long term solutions
- Too often, PPE is the solution

38



Job Hazards Analysis



Strategies for Success

- Management Commitment
- Train employees on JHA process
- Set Up Document control system for review, updates
- Ensure follow-up on Corrective actions
- Start small, gain momentum with success
- Communicate Results

39



Toolbox Talks



- Very Informal
- 3-10 min. gathering of a work crew at the beginning of a shift
- Specific topic, usually the task of the day
- Review procedures, SDS, JHA etc.
- Led by 1st line supervisor or crew leader
- Could be assigned a different crew member each time
- Advantages and disadvantages

40



Tool Box Talks



- Strategies for Success
- Relevant Information
- Have a different person lead the talk each day
- Encourage open communication
- Provide Follow-up on issues
- Stay focused
- Keep it short.

41



Audit/Inspection Teams



- Assist in Mandatory physical Inspections of the workplace
- Using checklists
- Provides informal training on requirements and standards
- Empowers employees to know what rules are
- Take Action

42



Incident Investigation Teams



- Be part of a team to determine root causes
- Utilizes employees expertise of job
- Problem solving/continuous improvement
- Employees know the ins/outs of tasks
- Can provide valuable inputs
- Formal and Informal communication

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Safety Suggestions



- Employees contribute
- Early hazard detection = prevention
- Feedback required
- Follow-up necessary

44



Perception Surveys



- Employees opinions can be heard
- Anonymously – get a truer picture
- Focus on true issue
- Find out what's important to employees

45



Sustaining Engagement



- Pitfall to the process
 - Avoid the “Flavor of the Month” safety program
 - Make the improvements, don’t talk about them
 - Thoughts without action are just dreams
 - Celebrate at the end, not the beginning

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Watch Video: The X Model of Employee Engagement

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Barriers and Challenges

- Lack of Trust
- Climate of Fear
- Amount of time/effort involved
- Uncertainty of change
- Not involving key stakeholders
- Not involving unions
- Lack of Management Commitment
- Lack of responsibility
- Not allowing enough time for change results
- Resistance from stakeholders
- Inadequate training
- Failure to educate

- Blame and accusations
- Leaders who won't let go
- Failure to define roles of participants
- Processes not designed to support change
- Too little or too much structure
- No transition plan
- Failure to communicate
- Program instead of process
- Overwhelming tasks
- Inadequate training
- Org history of poor employee engagement or lack of action

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**INDIVIDUAL DIFFERENCES
AFFECT EMPLOYEE
ENGAGEMENT**



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Safety Management

Safety and Health Management – Part 4

1

INDIVIDUAL DIFFERENCES AFFECT EMPLOYEE ENGAGEMENT

2

What makes a Great Place to Work?

- Challenging and meaningful work
- Hire and keep great people
- Provide competitive compensation
- Value and reward employee contributions
- Training and development
- Guidance, and support
- Work life balance
- Health and wellness

3



Individual Differences



- What is “safe”?
 - Differences in what is “safe”
 - Behaviors are driven by feeling
- Whether or not an employee works safely depends upon
 - Present situations
 - Past experiences
 - Workplace methods and design
- Remove discretion
 - Safeguarding and safe design minimize effect of individual differences on accident severity

4

Talking a different language					
Formative experiences	Matriots (pre-1945) Warrior culture Nuclear families Defined gender roles - particularly for women	Baby boomers (1945-1960) Cold War Space race Moon landings Youth culture Woodstock Family-oriented	Generation X (1961-1980) Fall of Berlin Wall Reunification Thatcherism Live Aid Early mobile technology Divorce rate rises	Generation Y (1981-1995) 9/11 terrorist attacks Social media Invasion of Iraq Reality TV Google Earth	Generation Z (Born after 1995) Economic downturn Global warming Mobile devices Cloud computing Wikisites
Attitude toward career	Jobs for life	Organisational - careers are defined by employees	“Portfolio” careers - loyal to profession, not to employer	Digital entrepreneurs - work “with” organisations	Multitaskers - will move seamlessly between organisations and “pop-up” businesses
Signature product	Automobile	Television	Personal computer	Tablet/intelligent phone	Google glass, 3D printing
Communication media	Formal letter	Telephone	E-mail and text message	Text or social media	Hand-held communication devices
Preference when making financial decisions	Face-to-face meetings	Face-to-face ideally but increasingly will go online	Online - would prefer face-to-face if time permitting	Face-to-face	Solutions will be digitally crowd-sourced

5

	I don't know what's wrong with these Kids today!	
<p>“The children now love luxury; they have bad manners, contempt for authority; they show disrespect of elders and love chatter in place of exercise. Children are now tyrants, not the servants of their households. They no longer rise when elders enter the room. They contradict their parents, chatter before company, gobble up dainties at the table, cross their legs and tyrannize their teachers”</p>		
<p>Socrates (469-399 B.C.)</p>		

6



It has to be meaningful and have perceived value

WHAT ARE YOU TWO DOING?

LAVING BLOCK.
WHAT ARE YOU TWO DOING?
I'M ON A TEAM TO BUILD A COMMUNITY CENTER.

7

So how do you we avoid committing unsafe behaviors?

- Stated earlier..
 - Proper equipment and procedures
 - Education on equipment and procedures
- These are on Leadership
- What about the employee?
 - Applying education
- How do we get them to want to do this?

8

BEHAVIORAL MANAGEMENT

9



BEHAVIORAL MANAGEMENT

10

BEHAVIORAL IMPROVEMENT

11

Behavioral Improvement

- In order to improve behavior, Leadership must understand the “why” of behavior
 - Two reasons for doing something unsafe
 - Always approach the situation first seeking to identify which one...then the why
- Strategies for improving behaviors
 - Identification, evaluation and control of safety-critical behaviors
 - Structural Change

12



Learning



- Reinforcement vs. discipline
 - Discipline is less effective than reinforcement because it shows only what should not be done
- Training
 - Only about 20% of information is retained

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EMPLOYEE MOTIVATION

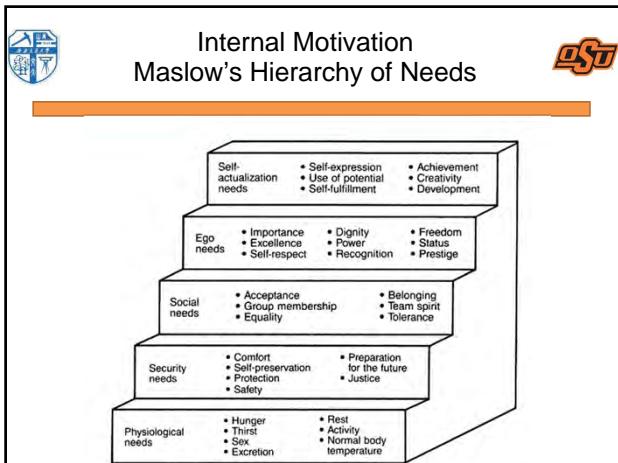
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Motivation

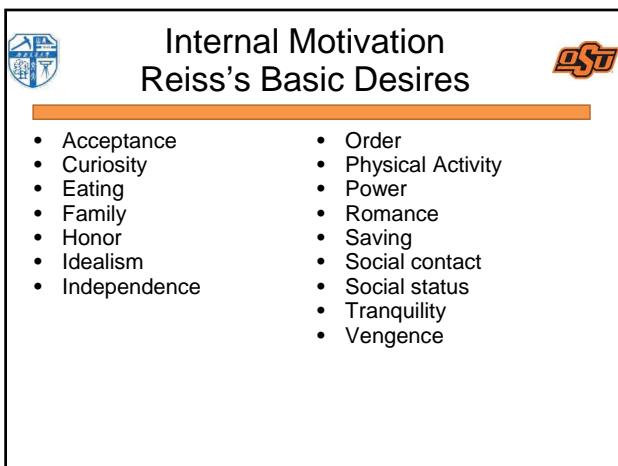
- Moving people to action that supports or achieves desired goals



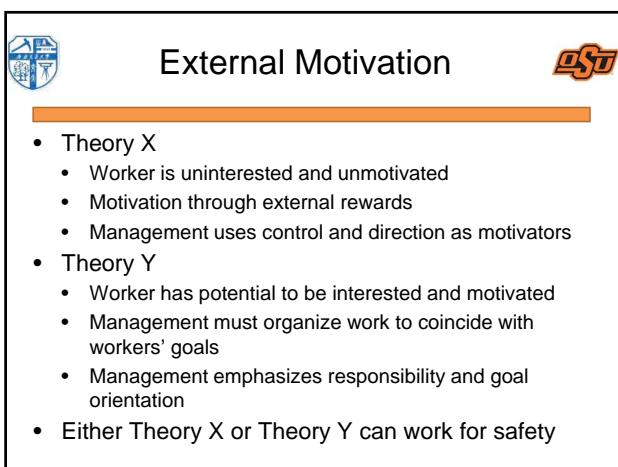
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Principles of Motivation



- Emphasize how workers will be affected
- Point out the risks of improper work habits
- Show how improper work habits affect the product or service provided
- Show the long-term impact of improper work habits
- Seek worker's aid in addressing problems
- What's common in these items?
 - Motivation is simple...make it about them

19



**DO WE HAVE TO GIVE THEM
SOMETHING IN RETURN?**

20



WHAT'S IN IT FOR ME?

21



Awards and Incentives



- Incentives are controversial
- People expect to be rewarded
- Violations might go unrecognized
- Awards and incentives must be action based and in the control of the workers
 - Lagging indicators
 - Leading indicators

22



Incentive Programs



- Gifts, awards tied to some from of Safety Program
 - Drawings for high value items
 - T-shirts, hats
 - Gift cards
 - Lunches, parties
- Tied to lagging or leading indicators???

23



Incentive Programs



- | | |
|--|--|
| <ul style="list-style-type: none">• Advantages<ul style="list-style-type: none">• Add interest to an established safety program• Increase safe behavior• Improve safety culture• Encourage peer pressure in the right way | <ul style="list-style-type: none">• Disadvantages<ul style="list-style-type: none">• Ripe with controversy• May encourage underreporting• Reward is insufficient so employees lose interest• Reward is not tied to behavior |
|--|--|

24



Incentive Programs



- Strategies for Success
 - Be very careful that the award is designed to encourage the behavior desired and discourage the behavior not wanted.
 - Have a start and end point
 - Communicate
 - Follow-up
 - Celebrate success

25



OSHA Does Not Like Incentive Programs



- 2012 OSHA Memorandum
- 2018 OSHA Memorandum
- 11(C) of OSH Act prohibits discrimination or retaliation
- Employees must feel free to report an injury
 - Post-accident disciplinary action must be consistent
 - Blanket post-accident drug testing
 - Incentive programs must not discourage reporting

26



Reward and Incentive Programs



- Controversy
 - Underreporting
 - Incorrect OSHA recordkeeping information
- What do you reward?
 - No OSHA recordable accidents
 - Lower incident rate
 - Reporting near misses
 - On-time corrective action closure
 - Reward behaviors...not outcomes

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SAFETY AWARENESS PROGRAMS



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FPST 3013 Safety Management

Safety and Health Management – Part 5

1



SAFETY AWARENESS PROGRAMS

2



Safety Awareness



- The workplace has been designed for safety
- Workplace procedures have been made as safe as possible
- Supervisors have thoroughly trained their teams
- Supervisors continue to enforce safe work procedures
- So why is a safety awareness program needed?
- Remember...only two reasons for unsafe behavior

3



Indications of the Need to Improve



- Increased incident rates
- Deteriorating housekeeping
 - This one will typically be seen first
- Incomplete or missing incident reports
- Safety awareness program objectives and benefits...p. 756

4



Selection of Safety Awareness Program Activities



- Six factors to consider when planning safety awareness activities:
 1. Company policy and experience
 2. Budget and facilities
 3. Types of operations
 4. Types of employees
 5. Basic human interest
 6. Humor
 - Pictures, videos on TVs, etc...but keep it professional
 - America's Funniest Home Videos
 - <https://www.youtube.com/watch?v=uZhU2JlxXBw>
 - HomemadeFireworks.wmv

5



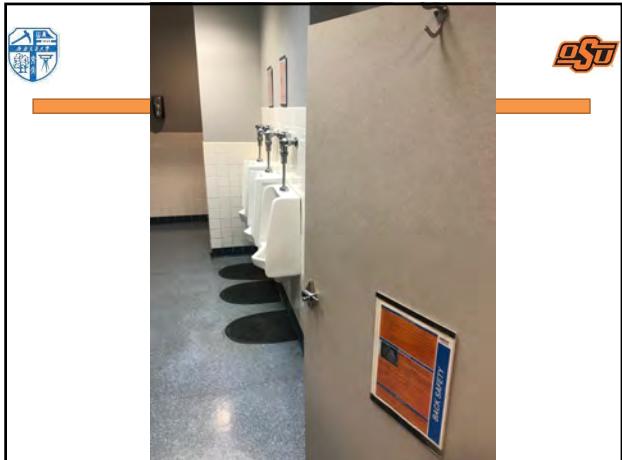
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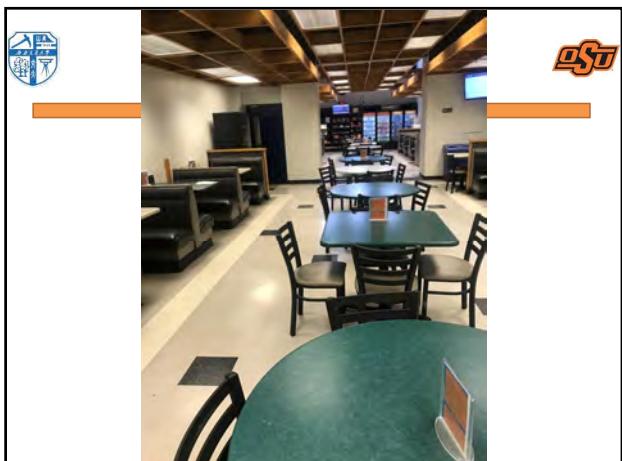
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12



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Safety Trivia Contest Winners!

13

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Who can help you oversee incentive and awareness programs?

SAFETY COMMITTEES!

14

Basic Human Interests and Corresponding Activities pg. 759

BASIC HUMAN INTERESTS AND CORRESPONDING ACTIVITIES

Basic Interest Factors	Ways to Use These Factors
Fear of painful injury, death, loss of income, family hardship, group disapproval or ridicule, superiority interests.	Visual material: emotional or shocker posters, dramatic films, pictures, and reports of serious injuries on bulletin boards, in company papers.
Pride in safe workmanship, in good records, both individual and group.	Recognition for individual and group achievement: trophies, personal awards, letters of appreciation.
Recognition: desire for approval of others in group and family; for praise from superiors.	Publicity, photos and stories in company and community papers, on bulletin boards.
Participation: desire to be "one of the gang," "to get in the act."	Group and individual activities: safety committees, suggestion plans, safety audits, campaigns.
Competition: desire to win over others, such as shown in sports.	Competitions with attractive awards.
Financial gain through increased departmental or company profits.	Monetary awards through suggestion systems, profit-sharing plans, promotions, increased responsibility.

Which one do you think works the best?

15



Contests



- Injury-rate contests
 - No, or decrease in, OSHA Recordable Accidents
 - Interdepartmental
 - Intergroup
- Personalized
 - Safe driver
- Years "OSHA-free"
- Safety Jackpot
- These are bad examples



16



Good Contest Examples



- Non-injury rate contests
 - Number of Near Misses reported
 - Safety inspection scores
 - Behavioral observations conducted
 - "Golden Broom" award
 - Slogans and posters
- Outcome of the contest has to be within the employees' span of control
- Gotta' publicize it
 - Ensure you create a friendly rivalry

17



Contests



- Once implemented, the goal is to keep it fresh and add variety.
- Similar to motivation, make it about them

18



HOW DO YOU KNOW WHEN YOU
HAVE A POSITIVE SAFETY
CULTURE?

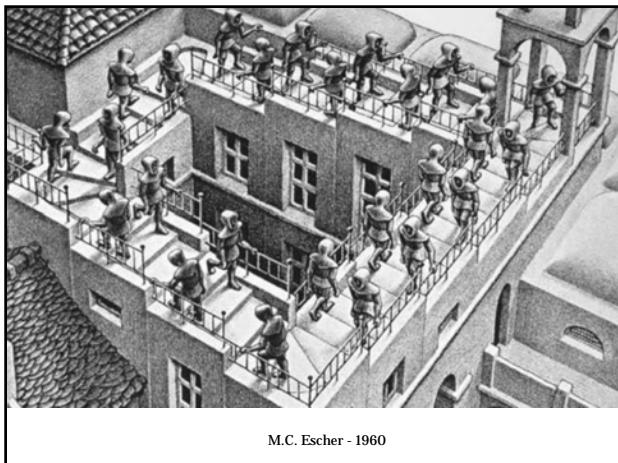
19



20



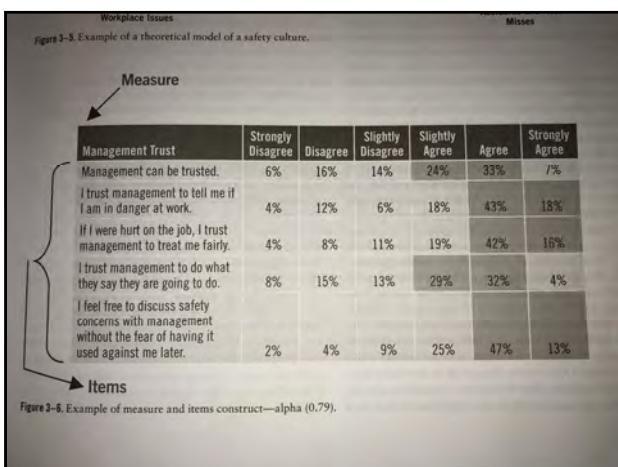
21



22



23



24

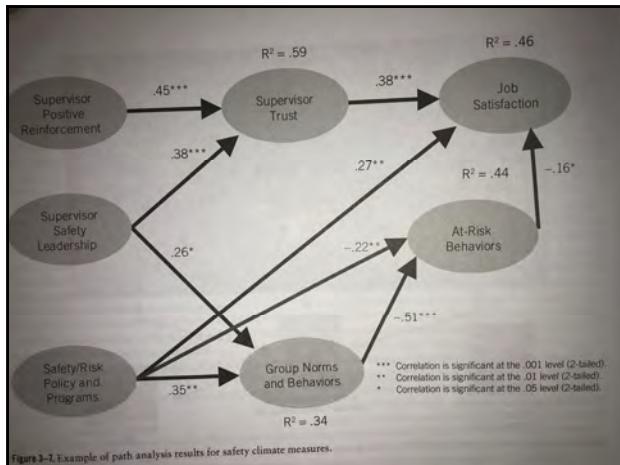


Figure 3-1. Example of path analysis results for safety climate measures.

25

Textbook - pg. 44

It is generally recognized that organizations with effective safety cultures are successful in convincing individuals at every level of the organization that safety is at least as important as other business characteristics such as productivity and quality. One of the most important elements of a culture is shared **values**, and if each individual does not share the organization's belief and vision, the elevation of safety as a top **priority** will not occur, and by definition, a world-class safety culture will not exist.

Any concerns with how it reads?

26

A Positive Safety Culture

- Functioning safety committee
- Equipment improvement and enhancements are continually implemented
- Training meets the needs
- Workplace atmosphere supports the safe choice
- Health promotion and risk reduction are widely accepted terms
- Attention to detail

27



Benchmarking Study Lessons Learned



- Make Safety Fun
- Educate Top Management
- Leaders must have passionate commitment
- Safety Management is an ongoing process
- Employee Engagement is essential
- Must have clearly defined responsibilities

28



Benchmarking Study Lessons Learned



- Need clear Goals and objectives
- Benchmark – learn from others
- Keep up with technology
- Monitor progress
- Make the connection between safety success and business performance
- Balance needs of business and safety

29



It's a Balance



30



Safety is not about
“being safe”...it’s about making
the right decisions...the decision
to get the right equipment, apply
the right knowledge, use the
correct procedure.

31



Influence Improvement

“People don’t care how much you know until they know how much you care.”

President Theodore Roosevelt

32



- How do you do this?
- Do it because it is the rule!
- Do it because I’m the Safety Manager and I’m telling you to do it!
- More importantly, how do you as the Safety Professional teach others how to do this?

33



Don Merrell

I CHOSE TO LOOK THE OTHER WAY

34



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I could have saved a life that day,
But I chose to look the other way.
It wasn't that I didn't care,
I had the time and I was there.

35



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But I didn't want to seem a fool,
Or argue over a safety rule.
I knew he'd done the job before;
If I spoke up he might get sore.

36



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The chances didn't seem that bad;
I'd done the same, he knew I had.
So I shook my head and walked on
by,
He knew the risks as well as I.

37



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He took the chance, I closed an eye;
And with that act I let him die.
I could have saved a life that day,
But I chose to look the other way.

38



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Now every time I see his wife,
I know I should have saved his life.
That guilt is something I must bear;
But it isn't something you need to
share.

39



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If you see a risk that others take
That puts their health or life at stake,
The question asked or thing you say;
Could help them live another day.

40



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If you see a risk and walk away,
Then hope you never have to say,
“I could have saved a life that day,
But I chose to look the other way.”

41



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FPST 3013 Safety Management

Measuring Safety Success

1

How do we measure Safety Performance?



2

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Measuring accidents & OSHA Recordable Incident Rate

Is this the best way to measure safety?

3



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Zero Accidents

Is this a reasonable goal?

4

Lagging vs. Leading indicators

- Lagging
 - Reactive
 - Failure
 - After the fact
 - Factual
 - Historic
- Leading
 - Proactive
 - Look at potential for failure
 - Look at actions
 - Predictive (less certain)

5

Organizational Approach

- Values and Principles
- Vision and Mission
- Objectives and Goals
- Strategies
- Tactics

6



Organizational Approach



- A mission is a broad idea of what you are striving for...what you want to be. Missions for organizations don't typically change once they have been established unless changes in other factors dictate such. "We want to continually improve our safety".
- Objectives are basically milestones. Once you reach a milestone, you set another one. "Reduce OSHA recordable rate by 15%". This is not something you just go and do. There are multiple ways to accomplish this.
- Strategies are plans to accomplish the objective "implement inspection program for facility". This is also something that you do not simply go and do. There are numerous pieces to implementing an inspection program. This is one strategy that can have a positive effect on you accomplishing your objective which pushes you towards fulfilling your mission.
- Tactics are action-based. "Develop written inspection process", "train selected employees in inspection process", "Conduct quarterly inspections"... These are things that you actually go and do.

7

Principles & Values	People are our most important resource. Our company's principal responsibility is the safety and health of our employees. Every Employee is entitled to a safe workplace. No job is so important it can't be done in a safe manner. If its not safe, we will not do it.		
Vision/Mission	We will operate our facilities in a responsible manner that is consistent with regulatory requirements and industry best practices. We will constantly strive to improve our operations and practices to protect our people, our property and the world around us.		
Objectives	Reduce Incidents by 15% each year – ultimately striving for zero injuries		Reduce our direct costs of accidents by 25%
SMART Goals	Complete 100% of OSHA required training for all 360 employees by the end of the 2018	Conduct 52 weekly toolbox talks in individual production crews. Each crew member will be responsible for leading one safety discussion this year.	Conduct Daily Housekeeping inspections at the beginning and end of each shift and correct any hazards noted before continuing work.
Strategies (Mgmt Systems)	Training Policies Funding Training Matrix Learning Objectives	Policy Time and Scheduling Labor Relations	Production Planning Maintenance Systems
Tactics	✓ Develop Materials ✓ Train trainers ✓ Conduct Training ✓ Track in LMS	✓ Develop Topics ✓ Train Trainers ✓ Document forms ✓ Tracking	✓ Schedule Audits ✓ Train Auditors ✓ Develop Checklists ✓ Track Corrective Actions

8

How do we measure individual safety performance?	
<ul style="list-style-type: none"> Top Managers <ul style="list-style-type: none"> Personal Behavior Safety Activities Statistical results of their group (be careful here) Supervisors <ul style="list-style-type: none"> Personal behavior Safety activities within span of control Employees <ul style="list-style-type: none"> Personal behavior Participation in safety activities 	
<hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	

9



Is this a good example?

Performance Objective for a 1st line Supervisor

Safety and Environmental: Takes definitive action to support safety and environmental practices and programs to eliminate hazardous conditions and unsafe associate practices.

Circle the number that best describes the level of associate performance:

1	2	3	4	5
Well below average	Below average	Average	Above average	Well above average

10

Better Description

- Identifies hazards in the department and takes steps to eliminate the hazards.
- Completes thorough monthly inspections of the department to identify hazards.
- Notes hazards relative to the daily operations of the department in monthly report to management.
- Develops feasible control strategies and implements or ensures their implementation to reduce noted hazards.
- Follows up on and communicates findings to the associates and management via shift meetings, written postings in lunch room, and operations reports.

1	2	3	4	5
Well below average	Below average	Average	Above average	Well above average

11

Measurement Tools

- Two categories of measurement tools
 - Activity
 - # of inspections
 - # of Investigation
 - # of persons trained
 - # Observations
 - Quality of Activity
 - Results
 - Inspection Results/score
 - Sampling Results
 - Cost reductions or avoidance

12



Quantify Levels of Success

Does Not Meet Standards	Meets Standards	Exceeds Standards
1	2	3
<ul style="list-style-type: none">➢ Does not complete or does not turn in without prompting or by the last Friday of the month, monthly departmental inspections.➢ Does not complete accident investigations within the same shift.	<ul style="list-style-type: none">➢ Completes and turns in, without prompting, monthly departmental inspections by the last Friday of the month.➢ Completes accident investigations within the same shift of the accident report.	<ul style="list-style-type: none">➢ Completes additional inspections, turns them in early, or provides suggestions for improving inspection scores within his/her own department.➢ Completes investigations, provides feedback to other shifts what happened, and follows up on recommendations.

13

How do you measure Quality?

0	No effort at implementation
1	Implementation efforts started but incomplete
2	Implementation efforts underway but major improvement is needed
3	Implementation nearing completion, improvements needed
4	Implementation completed, minor improvements needed
5	Fully Implemented, fully effective, no improvements needed

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Organizational Approach

Values and Principles
Vision and Mission
Objectives and Goals
Strategies
Tactics

15



SMART Goals

Action-oriented

Specific	Measurable	Achievable	Realistic	Timely
S G O	M O	A A	R L	T S
What do you want to do?	How will you know when you've reached it?	Is it in your power to accomplish it?	Can you realistically achieve it?	When exactly do you want to accomplish it?

16

Writing SMART Goals

- Start with an Action Word (Verb)
- Specify a **single** key result that is to be accomplished
- Specify a target date
- Specify what and when
 - Avoid why and how

17

SMART or NOT SMART?

- Develop and implement a program to train and license fork truck drivers
- Improve safety performance next month
- Conduct weekly inspections and ensure hazards are corrected within 24 hours
- Our Goal is ZERO recordable accidents
- Reduce Recordable accidents by 5%
- Complete weekly tool-box talks with 100% attendance.
- Investigate all incidents

18



Communicate

OSU

19

Communicate

OSU

20

Communicate

OSU

21



How do we measure Safety Performance?

Leading Indicators
Under the employees' control
With SMART Goals



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FPST 3013 Safety Management

1



What is the #1 way that people die

- Permit Required Confined Spaces
- Slips and Falls
- Motor Vehicle Accidents
- Over-exposure to Chemicals
- Caught in Machinery
- Electrocution
- Falling From Heights
- Struck by Equipment
- Arc Flashes

2



What is the #1 way that people die

- Permit Required Confined Spaces
- Slips and Falls
- **Motor Vehicle Accidents**
- Over-exposure to Chemicals
- Caught in Machinery
- Electrocution
- Falling From Heights
- Struck by Equipment
- Arc Flashes

3



FPST 3013 Safety Management

Transportation Safety Programs
a.k.a. "Fleet Safety"

4



Fleet Safety



5



Why Address Fleet Accidents



- Frequency of Fleet Accidents (NSC)
 - <https://youtu.be/8btDfpM1jjs>
- NSC estimates 40,000 people died in motor vehicle crashes in 2016.
 - 6% increase over 2015
 - 14% increase over 2014
 - the most dramatic two-year escalation in 53 years.
- Employers absorb costs associated with these crashes, whether they occur on or off the job

6



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NHTSA

7

NHTSA – Direct Costs

PHYSICAL DAMAGE TO VEHICLE MEDICAL CARE SICK TIME

WORKMAN'S COMPENSATION

8

NHTSA – Indirect Costs

lost sales

lost productivity

recruitment and training to replace permanently disabled drivers

9



Driver Distraction



- Driver distraction is a significant contributor to crashes, and cell phone use has played an increasingly larger role.
- According to NHTSA, fatalities from distracted driving grew 8.8% in 2015, outpacing the overall increase in traffic crashes.
- At any moment, about 7% of drivers on the road are using their cell phones (NHTSA). The actual percentage may be higher, because it is difficult to observe hands-free use.

10



Vehicle crash repair costs



	Bumper \$450-\$900
	Paint Scratches \$50-\$1500
	Windshield cracks \$50-300
	Suspension damage \$300-\$5000
	Rear end damage \$10,000
	Source: www.insurance.com

11



DOT



- United States Department of Transportation
- Two DOT agencies are directly related to fleet safety:
 - Federal Highway Administration
 - National Highway Traffic Safety Administration
- DOT Regulations
 - Federal Motor Carrier Regulations from the DOT are included in Volume 49 of the Code of Federal Regulations.
 - 49 CFR

12



Elements of a Fleet Safety Program



- Why have a program?

- An effective loss prevention program within any fleet, regardless of coverage, involves seven basic points.

13

Elements of a Fleet Safety Program



1. Management Support and Direction
 - Top management must be committed to a safe operation
 - A fleet safety policy should:
 - define the purpose and objective of the program,
 - scope of program activities,
 - define responsibilities and establish accountability, and
 - evaluate program effectiveness
 - Top management should play an active role in its participation
 - Set the example

14

Elements of a Fleet Safety Program



2. Driver Selection
 - The safety and/or fleet administrator should provide positive guidelines for the selection of drivers:
 - MVR Check
 - Job descriptions with qualifications
 - DOT requirements

15



What type of vehicles does your company have?

- Commercial Vehicles = anything over 10,000lbs



16



What type of vehicles does your company have?

- Non-Commercial Vehicles



17



Commercial Vehicles

Vehicle Configuration

Bus (9-15 Seats, Including Driver)	Truck/Trailer (Single-Unit Truck Pulling a Trailer)
Bus (16 or More Seats, Including Driver)	Truck Tractor (Bobtail)
Single-Unit (2 Axles, 6 Tires)	Tractor/Semi Trailer (One Trailer)
Single-Unit (3 or More Axles)	Truck Tractor/Double (Two Trailers)
Cement Mixer	Truck Tractor/Triple (Three Trailers)

Federal Motor Carrier Safety Administration

U.S. Department of Transportation www.fhwa.dot.gov

18



Elements of a Fleet Safety Program



3. Medical Program

- A medical program in a fleet should include the following major areas:
 - medical evaluation
 - periodic health examinations
 - first aid/emergency procedures
- DOT safety regulations outlines "Qualifications of Drivers"

19



Elements of a Fleet Safety Program



4. Employee Training and Supervision

How comprehensive and formal the training activities are depends on a number of factors including:

- Size of fleet
- Number of locations
- Amount of turnover
- Experience level of new hires
- Fleet training program should include:
 - Orientation
 - Job instruction
 - Refresher training
 - Corrective training
 - Auditing of results

20



Elements of a Fleet Safety Program



4. Employee Training and Supervision (cont.)

- Driving skills are best accomplished behind the wheel.
- DOT requirements for training:
 - Safe operation regulations
 - Commercial motor vehicle safety control systems
 - Safe vehicle control
 - Relationship of cargo to vehicle control
 - Vehicle inspections
 - Hazardous materials
 - Air brake systems
 - Coupling and uncoupling

21



Elements of a Fleet Safety Program



5. Vehicle Maintenance
6. Vehicle Inspections



- According to the DOT all commercial vehicles must go through a periodic inspection once a year
- Records shall be kept on inspection, repairs, maintenance and lubrication

22



Elements of a Fleet Safety Program



5. Vehicle Maintenance (cont.)
6. Vehicle Inspections (cont.)



- Preventive maintenance preferred
- Pre and Post Trip Inspections
 - Service brakes, Parking brakes, Steering mechanism, Lighting devices and reflectors, Tires, Horn, Windshield wipers, Rear vision mirrors, Coupling devices, Wheels and rims and Emergency equipment
 - More important if you share the vehicle
 - How often do you check these items on your personal vehicle?

23



Elements of a Fleet Safety Program



5. Vehicle Maintenance (cont.)
6. Vehicle Inspections (cont.)

- A program of self-inspection of facilities...to include fleet safety vehicles can assist in identifying and correcting hazards before they result in accidents or injuries
- The federal government regulates the transportation of hazardous materials. There may also be state and local regulations

24



Elements of a Fleet Safety Program



7. Accident Record and Review

- Reporting - Accidents must be reported promptly.
- Recording - Adequate records should be maintained for all accidents.
- Reviewing - Accidents should be reviewed with the employee involved. The purpose should not be to assess blame but to prevent recurrence.

25



Elements of a Fleet Safety Program



7. Accident Record and Review (cont.)

- DOT Requirements for Accident Investigations:
 - The operator must report all accidents to their employer.
 - The employer must keep records of all accidents and have them available to the Federal Highway Commission.
 - The employer must aid in any investigation by the Federal Highway Commission.
 - The employer must keep accident records for at least one year.

26



Drug/Alcohol Testing for Drivers



- DOT regulations exist for commercial vehicles
- Company policy is the only thing governing for non-commercial vehicles
- When to test for Drugs/Alcohol
 - Pre-employment
 - Random
 - Reasonable Suspicion
 - Post Accident
 - Must be a DOT recordable accident as defined by the FMCSA

27



Drug/Alcohol Testing for Drivers

- DOT recordable accident is defined by the FMCSR 390.5:
 - A fatality;
 - Bodily injury to a person who, as a result of the injury, immediately receives medical treatment away from the scene of the accident; or
 - One or more of the vehicles incurring disabling damage as a result of the accident, requiring the motor vehicle(s) to be transported away from the scene by a tow truck or other motor vehicle.
- If the occurrence does not involve one or more of the above then it is not recognized as an accident to the FMCSA.

28

HEARSE

NURSE

TOW

29

Defensive Driving Training

- Defensive Driving Safety Training has proven to be an effective solution to:
 - Control liability costs associated with work-related vehicle crashes
 - Reduce insurance premiums and fleet repair bills
 - Reduce motor vehicle incident rates
 - Decrease workers' compensation claims
 - Improve productivity by keeping employees safe, on and off the job
 - Protect your brand by improving public perception of your driving practices

30



Corporate Safety Belt Policies



- Introduction
 - Safety belt use policies have been adopted in several corporate settings with strong safety programs
- Implications for Employer
 - Studies indicate that every dollar invested in a corporate safety belt program yields a \$105 return on investment.
 - Nationally, each 10% increase in safety belt use results in 30,000 less serious and moderate injuries, and a saving of approximately \$800 million in direct costs to society.

31



Distracted Driving



- <https://youtu.be/H8GM-E2QKZw>
- The Myth of Multi-tasking
<https://youtu.be/BCeGKxz3Q8Q>
- Texting and driving
 - <https://youtu.be/kRrZ1qHJ2jQ>

32



Cell Phone Policy



- Why Every Company Needs a Cell Phone Policy
- <https://youtu.be/5OpO-rGfhZE>

33



Cell Phone Policy



- A corporate cell phone ban might ask employees to:
- Turn off wireless phones or other devices before starting the car
- Inform clients, associates and business partners that calls will be returned when no longer driving
- Pull over to a safe location and put the vehicle in park if a call must be made
- <https://youtu.be/s7WVjHD2ogQ>

34



Sample Company Cell Phone Policy



- At <insert company name>, we deeply value the safety and well-being of all employees. Due to the increasing number of crashes resulting from the use of cell phones while driving, we are instituting a new policy.
- Employees may not use handheld or hands-free mobile electronic devices or voice features in vehicles while operating a motor vehicle under any of the following situations:
 - When employee is operating a vehicle owned, leased or rented by the company.
 - When the employee is operating a personal motor vehicle in connection with company business.
 - When the motor vehicle is on company property.
 - When the cellular telephone or mobile electronic device is company owned or leased.
 - When the employee is using a cellular telephone or mobile electronic device to conduct company business.
- Employees will be given two warnings. The third time an employee is found to be in violation of this policy, it is grounds for immediate dismissal.

35

IMPROVING COMPANY POLICIES

Thousands of employers prohibit employees from using cell phones while driving. Federal and state laws fall short of best practice safety standards. It's up to employers to keep their employees safe with cell phone distracted driving policies.

The best cell phone policies cover:

All employeesAll handheld and hands-free devicesAll company vehiclesAll company mobile phone devicesAll work-related communications, even in personal vehicles or on personal cell phones

COMPANIES WITH TOTAL BANS ARE NO LESS PRODUCTIVE

36



What is the AT&T don't text and drive slogan?



- It can wait
- https://www.att.com/Common/about_us/txtng_driving/att_twd_fact_sheet0512.pdf

37



Distracted Driving



- http://txdrivingconcern.org/wp-content/uploads/2015/10/Employer_Liability_Cell_Phones_NSC_2015.pdf
- <https://kfor.com/2019/04/01/organization-urging-lawmakers-to-approve-bill-to-crack-down-on-distracted-drivers/>
- Only two reasons for unsafe behavior...

38



Distracted Driving



39



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Are policies enough?

40

New tech.

- https://www.samsara.com/page/fleet-safety?utm_source=google&utm_campaign=fleet_safety_&utm_medium=search&utm_content=b&utm_term=%2Bfleet%20%2Bsafety&utm_ext_ad_id=kwd-305583078455&utm_ext_adset_id=58878179015&utm_ext_campaign_id=1543677300&qclid=EAIaQobChMl5MyR1cfi5QIVBtRkCh0tIQxCEAYAYAAEgJWipD_BwE
- https://trucesoftware.com/blog/fleet-everything-to-know-about-distracted-driving-apps/?creative=381601805998&keyword=&matchtype=b&network=g&device=c&qclid=EAIaQobChMln4XH8Mri5QIVBFYMCh0SxAQ6EAAYASAAEgJovfD_BwE
 - Click - how it works

41



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FPST 3013 Safety Management

Contractor Safety & Multi-Employer Worksites

1

WHAT TYPES OF JOBS WOULD YOU CONTRACT OUT?

2

Why So Many Contractors?

- 70% of organizations contract more than 5% of the workforce
- 45% of organizations struggle to attract qualified craft labor
- 15.5 million in U.S are self-employed
 - 60 million by 2020 (BLS)

3



Temp vs Contractor



- Temp
 - Hired by a 3rd party to perform a task or fill a role
 - Supervised by Company
 - Responsible for training
 - If injured, goes on OSHA log
 - WC paid by 3rd party
- Contractor
 - Hired as a company
 - To do a job or a project
 - Self-supervised
 - Provide own training, PPE
 - Has own OSHA log, WC policy
- Sub-contractor

4



Problems with Contractors



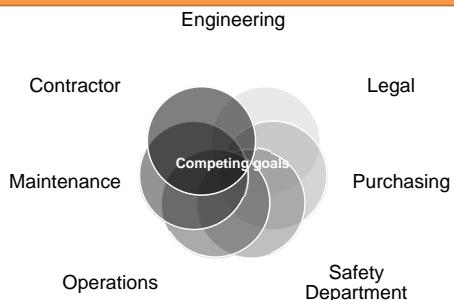
- Financial and production pressures
 - Shortcuts and unsafe behavior
- Lax training and supervision
- Broken information
- Unclear work responsibilities
- Insufficient safety standards
- Relaxed enforcement
- Which contractor is typically awarded the bid?
 - Low bid = low quality (unsafe)



5



Who Influences Contractor Safety?



6



What Data Should Be Used To Pre-qualify Contractors?



- OSHA Recordkeeping?
 - TRIR, DART
- WC EMR?

7



Contractor Pre-Qualification



- TRIR, DART vs NAICS code benchmark
- Inclusion of records, 300 logs
 - Provide copies. Any issues with this?
 - No way to prove accuracy
- EMR
 - Rating of less than 1.0 has better loss record than similar companies doing the same type of work
 - Can't hide the money
- Insurance Verification
- Continuous improvement plans
- Internal Scale (ABCDF, 1-10, STARS)
- Use of 3rd party verification
 - ISNET, PEC Premier, ComplyWorks, etc.

8



T's and C's



- "All Work shall be done in accordance with, all laws, ordinances, building codes, rules and regulations applying to the Work, including, but not limited to, the Americans with Disabilities Act, environmental regulations and the Occupational Safety and Health Act of 1970."

9



Selection Criteria



- Three sources
 - Policies, procedures and practices
 - Have them provided for your review
 - Tangible
 - Review only what is applicable to the job scope
 - Incident Rates
 - Cautiously

10



Contractor Selection



- Best practice is to influence the safety performance of outside contractors by having:
 - Strong management
 - Tight control over contractors schedules, responsibilities, etc.
 - Effective task coordination
 - Foster teamwork and cooperation among all employees
 - Strong emphasis on safety
 - Daily top-down communications
 - Strong supervisors
 - Show all workers respect
 - A safety work environment
 - Set the example

11



Best Practices in Contractor Safety



12



Helpful Tips



- Do your reviews prior to them coming on site and ideally before the bid is awarded.
- Once onsite, treat them the same as your employees. Hold them accountable to do, what they say they are going to do.

13



14



Pre-Job Task and Risk Assessment



- Risk Rating of work to be performed
 - Using a risk matrix
 - Higher risk – further action

15



Contractor Training and Orientation

The flowchart illustrates the training process:

- Onsite safety orientation** includes:
 - Emergency plan
 - Basic safety rules
 - HazCom
- Specialized Training** includes:
 - LOTO
 - Confined Space
 - Hot Work
 - Fall Protection
- Certifications** include:
 - HAZWOPR
 - Heavy Equipment
 - Cranes
 - Forklifts

16

Monitoring the Job

The monitoring process involves several key activities:

- PRE-TASK SAFETY PLAN
- SAFETY OBSERVATIONS
- PERFORMANCE REVIEWS
- FIELD VERIFICATIONS
- PASS/FAIL GRADE
- MOBILE CONTRACTOR AUDIT APP FOR SMART PHONE

17

Post Job Evaluation

The evaluation process consists of the following steps:

- Safety performance assessment
- Complaint logs
- Reviews workers' compensation claims
- Measures if work was performed effectively

18



The Campbell Institute



- Backed by the NSC
- Campbell Institute helps organizations of all sizes and industries achieve and sustain well-integrated EHS management systems.

19

Best Practices

➤ Use of third-party prequalifying companies	
➤ Assessment of contractor safety statistics (EMR, TRIR, DART, fatality rate, etc.)	
➤ Internal scale or checklist to assign grades to contractors during prequalification	
➤ Risk rating for work to be performed by contractor	
➤ Placing general contractors in charge of subcontractor safety and holding them to owner standards	
➤ Verification of contractor certifications and permits; on-site safety orientations	
➤ Periodic, scheduled assessments during contract term	

20

The Future of Contractor Safety

➤ Pre-qualification rigor	Leading vs lagging indicators
➤ Risk Assessment	
➤ International implications	
➤ Non-routine activities	
➤ Contractor Safety Culture	
➤ Interdependence with host Company	

21



Brainstorm



- How many contractors typically work on one site?
- Who is liable if someone is hurt?
- Who is cited if a standard is violated?

<https://www.propublica.org/article/osha-struggles-with-tower-climbing-deaths>

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Multiple Employer Worksites

[OSHA Citation Policy CPL 2-0.124](#)

23

Melerine v. Avondale Shipyards Inc., 659 F.2d 706 (5th Cir. 1981),

- Since this 1981 ruling it has been law that protection under the OSH Act extends only to an employer's own employees.
- Under this interpretation of the OSH Act, an employer who does not expose its own employees to hazard may not be cited for the safety violation.
- This view, of course, is squarely at odds with the secretary of labor's "controlling employer" doctrine and OSHA's multiemployer citation policy" (1999), which seemingly allows OSHA to cite a controlling employer regardless of who the exposed employees work for.

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Secretary of Labor v. Hensel Phelps Construction Co., Docket No. 15-1638 OSU (June 1, 2017)

- Occupation Safety and Health Review Commission held that OSHA was barred from citing a general construction contractor under the Occupational Safety and Health Act of 1970 for an alleged safety violations to which the general contractor's own employees were not exposed.
- The alleged violation took place on a construction site in Austin, Texas. The employees who were exposed to the alleged safety hazard worked for a subcontractor.
- OSHA believed, however, that it should cite the general construction contractor because of its arguably controlling employer status.
- The general construction contractor contested the safety citation by pointing out, among other things, that it did not employ the exposed workers and thus, could not be found liable for the cited violation under Avondale Shipyards.
- The court found in favor of the Construction Contractor, the OSHRC refused to overturn the case.

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Multi-Employer Worksite Policy OSU

 Employers have a **statutory duty** to comply with OSHA standards and to exercise reasonable diligence to determine whether violations of those standards exist.

 On multi-employer worksites (in all industry sectors) **more than one employer may be citable** for a hazardous condition that violates an OSHA standard.

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OSHA Multi-Employer Citation Policy (CPL 2-0.124) OSU

- Two-step process to determine
 - STEP ONE – Determine whether the employer is a **Creating, Exposing, Correcting, or Controlling** employer.
 - STEP TWO – Determine whether the **employer's actions were sufficient** to meet the obligations based on which category that applies

27



Two-Step Process

What category of employer?

- Creating
- Exposing
- Correcting
- Controlling
- (Multiple roles possible)

Did employer meet obligations for that category?

28

Creating Employer

- The employer that caused a hazardous condition that violates an OSHA standard
- An employer **must not create a violative conditions** and is citable even if only employees exposed are of other employers



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Example 1

 XYZ Mfg operates a factory and contracts with Company S to service machinery.

 XYZ Mfg fails to cover drums of chemicals despite Co. S's repeated requests to do so.

 This results in airborne levels of a chemical that exceed the Permissible Exposure Limit.

30



Example 1

Step 1 – XYZ Mfg is a creating employer because it caused employees of CoS to be exposed to air contaminants above the PEL.

Step 2 – XYZ Mfg failed to implement measures to prevent accumulation of the air contaminant. It could have implemented the simple engineering control of covering the drums. Having failed to implement a feasible control the Host is citable.

31

Example 2

ABC Construction Co hoists materials onto upper level floor damaging perimeter guardrail.

Neither ABC employees or other employees of other employers are exposed to the hazard.

ABC takes effective steps to keep all employees away from the unprotected edge and informs the controlling employer of the problem.

ABC lacks the authority to fix the guardrails.

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Example 2

Step 1 – ABC is a creating employer because it caused a hazardous condition by damaging the guardrail.

Step 2 – While ABC lacked authority to fix the guardrails it took immediate and effective steps to keep all employees away from the hazard and notified controlling employer.

ABC is not citable since it took effective measures to prevent exposure to the fall.

33



Exposing Employer

An employer whose own employees are exposed to a hazard.

If not the creating employer, citable if:

Even if they did not create the hazard.
Knew hazard, or would have with reasonable diligence and Failed to take steps to protect employees.

34

Exposing Employer

If the exposing employer has the authority to correct the hazard it must do so.

If exposing employer does not have authority to correct hazard, must:

Ask creating or controlling employer to correct
Inform employees of hazard
Take reasonable alternative protective measures

Imminent danger? Remove employees!

35

Example 3

Example – SubContractor S is responsible for inspecting and cleaning a work area in Plant P around a large permanent hole each day.

There are no guardrails and fall protection used even though it is feasible to do so.

Sub S has no authority to install guardrails.

They asked Plant P to do so but were refused.

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Example 3

Step 1 – Sub S is an exposing employer

Step 2 – While Sub S has no authority to install guardrails, it is required to comply with OSHA rules to the extent feasible; ie. steps to protect employees and ask employer that controls the hazard (Employer P) to correct it.

Although Sub S asked for guardrails to be installed, and it was not corrected, Sub S is responsible to take reasonable alternative measures such as using personal fall protection.

Sub S can be cited

37

Example 4

Unprotected rebar on either side of an access ramp presents an impalement hazard.

Sub E, does not have authority to cover the rebar.

Several times Sub E asked the general contractor, Employer GC, to cover the rebar.

In the mean time, Sub E instructed its employees to use a different access route that avoided the rebar and required them to keep as far away as possible.

38

Example 4

Step 1 – Since Sub E employees were still exposed to some unprotected rebar, Sub E is an exposing employer.

Step 2 – Sub E made a good faith effort to get the general contractor to correct the hazard and took feasible measures within its control to protect its employees.

Sub E is not citable for the rebar.

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Correcting Employer

Employer engaged in a common undertaking, on the same worksite, as the exposing employer and is responsible for correcting a hazard

Usually occurs where an employer is given responsibility of installing and/or maintaining particular safety/health equipment or devices

Must exercise reasonable care in preventing and discovering violations and must meet its obligations of correcting the hazard

40

Example 5

Employer C is hired to erect and maintain guardrails throughout a large 15 story project.

C inspects all areas each day in the morning and afternoon along with the area where material is delivered to the perimeter.

Other subcontractors are required to report damaged/missing guardrails to the C.

Employer C corrects them when found or reported.

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Example 5

On the project, a few instances of damaged guardrails have occurred.

After the afternoon inspection of Floor 6, workers accidentally damage a guardrail in one area.

No one tells C of the damage and C has not seen it.

OSHA shows up the next day prior to the morning inspection of Floor 6.

None of C's own employees are exposed to the hazard but other EEs are exposed.

42



Example 5

Step 1 – C is a correcting employer since it is responsible for erecting and maintaining fall protection equipment

Step 2 – The steps C implemented to discover and correct damaged guardrails were reasonable in light of the amount of activity and size of the project.

It exercised reasonable care in preventing and discovering violations.

It is not citable for the damaged guardrails since it could not have reasonably known of the violation

43

Controlling Employer

Employer who has general supervisory authority over the worksite but does not have the power to correct safety and health violations itself or require other to correct them.

Typically established by contract

A controlling employer must exercise reasonable care to prevent and detect violations on the site

44

Evaluating Reasonable Care

- In evaluating whether reasonable care was exercised in preventing and discovering violations, consider if they:
 - Conducted periodic inspections of appropriate frequency.
 - Implemented an effective system for promptly correcting hazards
 - Enforced compliance with an effective, graduated system of enforcement and follow-up inspections

45



Multiple Roles

May be an exposing employer in combination with other roles

May be a correcting employer if authorized to correct hazard

46

OSHA Regulations with Rules for Multiple Employers

Specific rules in:

- Hazard communication 1910.1200
- Lockout/tagout 1910.147
- Permit-required confined spaces 1910.146
- Process safety management 1910.119

Multi-employer citation policy applicable to all hazards

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The textbook section on Customer (Third-Party) Incident Prevention is not included

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FPST 3013

Safety Management

Environmental Management

1

Regulations

- Easy...land, water and air
 - Not so easy
 - Page 330

2

Most publicized
<https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.Cleanup&id=0201290#bkground>

CERCLA – LOVE CANAL

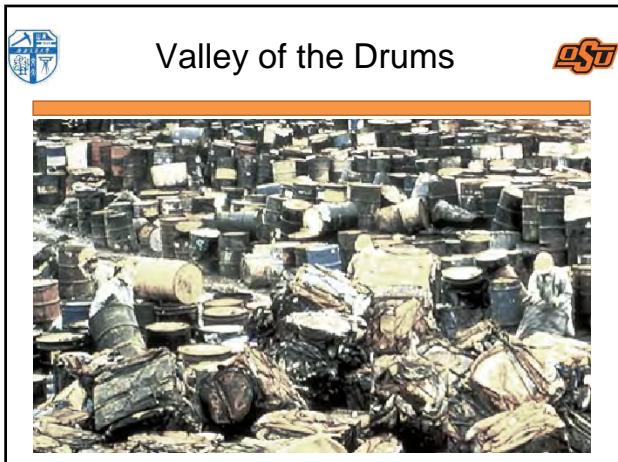
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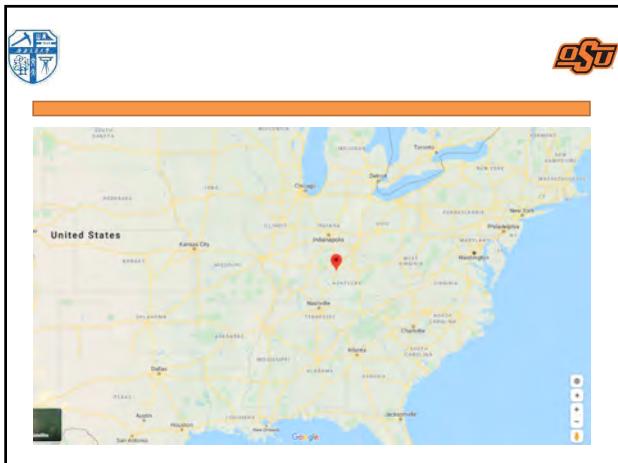
Collaborative Bachelor's Degree Program of Fire Protection and
Safety Engineering Technology between Southwest Jiaotong
University and Oklahoma State University, U.S.A.



4



5



6



7



<https://www.youtube.com/watch?v=sMHmy-95Mrl>
<http://www.nytimes.com/1985/08/12/us/toxic-cloud-leaks-at-carbide-plant-in-west-virginia.html>
<https://www.epa.gov/epcra/what-epcra>

EPCRA – BHOPAL

8



9



EPCRA

- TRI
 - Toxic Release Inventory
 - Requires reporting of the manufacture, processing, or use of toxic chemicals, throughout the course of a calendar year (not just at any one point in time), in excess of the typical reporting threshold of 25,000 pounds for most chemicals manufactured or processed, or 10,000 pounds for "otherwise used". The specific toxic chemicals which need to be reported come from a list the EPA updates each year, which currently contains over 650 toxic chemicals
 - <https://www.epa.gov/toxics-release-inventory-tri-program/tri-program-fact-sheet>
- Tier II
 - Required to provide emergency planning agencies (i.e. fire department, etc.) and your community, in general, information on the hazardous materials you store at your facility
 - Required to report the presence of hazardous materials at any one time in excess of 10,000 pounds for most chemicals (be advised that others have much lower reporting thresholds).

10

EPCRA

- SERC
 - State Emergency Response Commission
 - Responsible for implementing EPCRA provisions within its state
- LEPC
 - Local Emergency Planning Committee
 - Must, among other things, develop an emergency response plan and provide information about chemicals in the community to citizens
 - Plans are developed by LEPCs with stakeholder participation

11

SWDA

-  Solid Waste Disposal Act - 1965
-  Established a framework for states to better control solid waste disposal and set minimum safety requirements for landfills
-  Established economic incentives for states to develop planning, training, research, and demonstration projects for the management of solid waste

12



No specific event occurred resulting in the need for regulation

RCRA

13

RCRA

- The Resource Conservation and Recovery Act (RCRA),
 - 1976 amendment to the SWDA
 - address the huge volumes of municipal and industrial solid waste generated nationwide
 - The goals set by RCRA are:
 - To protect human health and the environment from the potential hazards of waste disposal
 - To conserve energy and natural resources
 - To reduce the amount of waste generated
 - To ensure that wastes are managed in an environmentally sound manner
 - “Cradle to grave”

14

RCRA

- Amended several times since 1976
- Significantly amended in 1984, by the Hazardous and Solid Waste Amendments (HSWA)
Many amendments but the main theme was to reduce the reliance on land disposal facilities
- Main RCRA regulations: 40 CFR 260 - 299

15



Types of Waste



- Home
 - Hazardous
 - Domestic sewage
 - Trash/ordinary recyclables
- Industrial
 - Hazardous
 - Universal
 - Used Oil
 - Special (non-hazardous)
 - Domestic sewage
 - Trash/ordinary recyclables

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Hazardous Waste ID



- Determine if the waste
 - A characteristic hazardous waste
 - Ignitable
 - Corrosive
 - Reactive
 - Toxic
 - A listed hazardous waste
 - Non-specific source
 - Specific source
 - Acutely toxic
 - Toxic

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Generators



- LQG
 - Greater than or equal to 1,000 kilograms (2200 pounds) of non-acute hazardous waste; **OR**
 - Greater than 1 kilogram (2.2 lbs) of acute hazardous waste listed in §261.31 or §261.33(e)
- SQG
 - Greater than 100 kilograms (220 lbs) but less than 1,000 kilograms (2200 lbs) of non-acute hazardous waste; **AND**
 - Less than or equal to 1 kilogram (2.2 lbs) of acute hazardous waste listed in §261.31 or §261.33(e)
- VSQG
 - Less than or equal to 100 kilograms (220 lbs) of non-acute hazardous waste; **AND**
 - Less than or equal to 1 kilogram (2.2 lbs) of acute hazardous waste listed in §261.31 or §261.33(e)

18



CAA



- **Major sources** are defined as a stationary **source** or group of stationary **sources** that emit or have the potential to emit 10 tons per year or more of a hazardous **air** pollutant or 25 tons per year or more of a combination of hazardous **air** pollutants.
 - Title V Permit
- **Minor Source**
 - **NSR** Permit
- **NAAQS**
 - CO, Pb, O₃, PM, NO₂, SO₂
- Violations result in huge penalties including jail time

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CWA



- NPDES
 - National Pollution Discharge Elimination System
 - Permit required for direct discharge to the environment
- POTW
 - Publicly Owned Treatment Works
 - Way less stringent permit when discharging to a city treatment facility
- SWPPP
 - Storm Water Pollution Prevention Plan
 - Permit required to discharge storm water from property and requires plan

20



<https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act>

TSCA

21



OPA

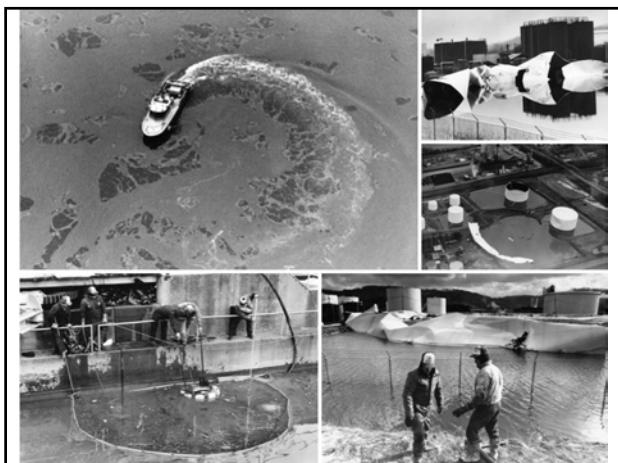
22

Background



- 1972
 - Congress passed the Federal Water Pollution Control Act
 - Amended in 1977 as Clean Water Act
 - Primary Federal statute for protection of water resources in U.S.
- 1973 Initial **SPCC** regulations adopted by U.S. EPA.
- January 1988
 - Ashland Oil Company's four million gallon aboveground storage tank collapsed spilling 3.8 million gallons of diesel fuel into Monongahela and Ohio Rivers.
Drinking water supplies were impacted for one million people in Pennsylvania, Ohio and West Virginia.

23



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Background (cont.)

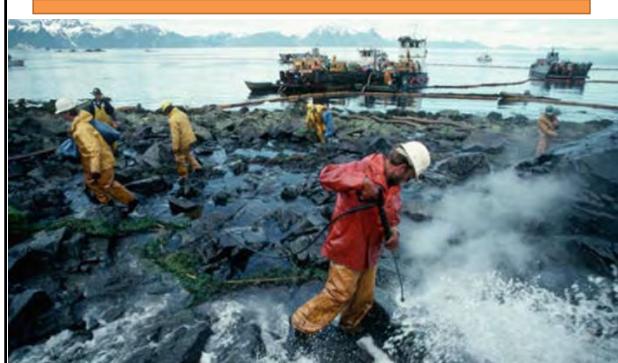


- In response to the '88 Ashland spill, EPA formed an SPCC Task Force:
 - Focus on the prevention of large, catastrophic oil spills
 - Make recommendations on the SPCC program

26



Where is this?



27



Background (cont.)

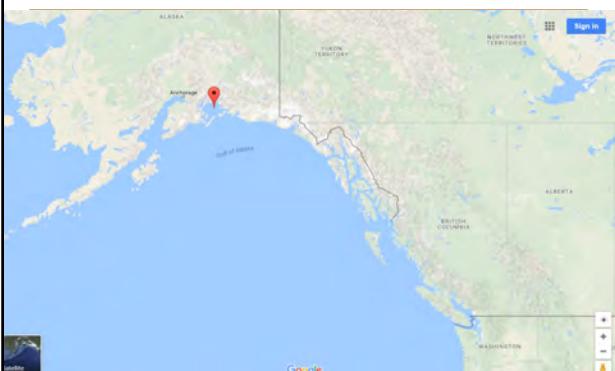


- In response to the '88 Ashland spill, EPA formed an SPCC Task Force:
 - Focus on the prevention of large, catastrophic oil spills
 - Make recommendations on the SPCC program
- March 24, 1989
 - Exxon Valdez
 - How much spilled?
 - 11 million gallons of crude

28



Prince William Sound, Alaska



29

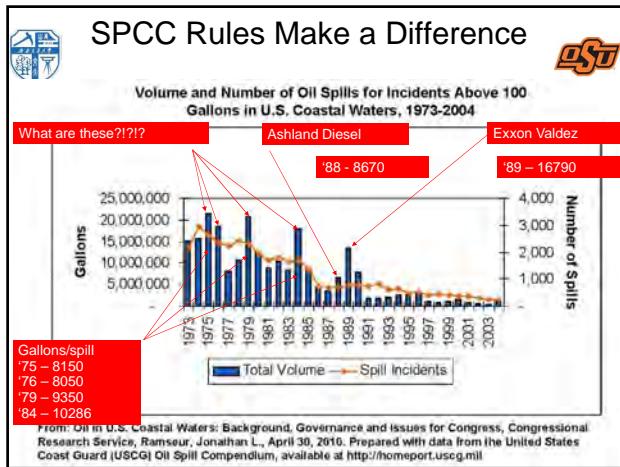


Background (cont.)

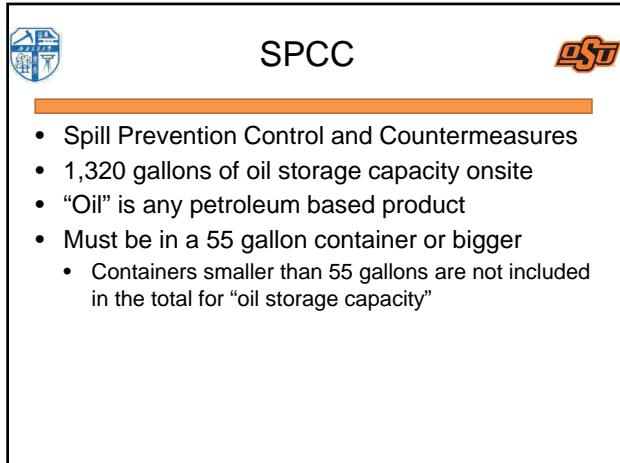


- The new law led to complete overhaul of SPCC rules. Series of new rules proposed 1991, 1993, 1994, 1997, and 1999.
- 2002
 - New SPCC rules adopted by U.S. EPA.
 - EPA sued by the American Petroleum Institute et al.
- EPA adopted revised rules in 2006, 2008 and 2009 but repeatedly delayed compliance dates....
- January 2010
 - All rules became effective.
- November 10, 2010
 - Compliance date for all facilities (except new oil production)
 - New oil production facilities have up to 6 months after completion of facility
- **21+ Years after Exxon Valdez**

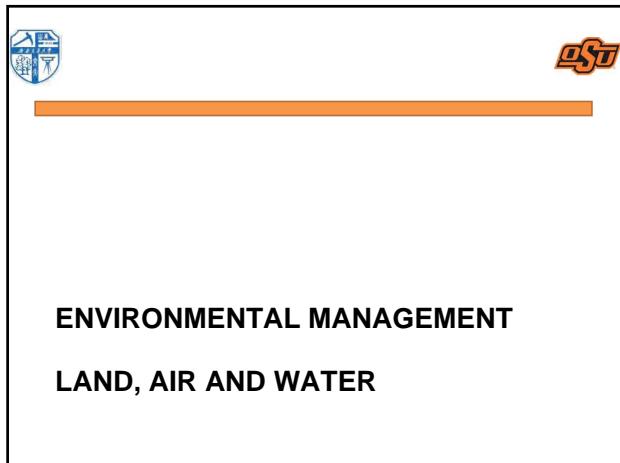
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FPST 3013 Safety Management

Emergency Preparedness
and
Workplace Violence

1



EMERGENCY PREPAREDNESS

2



29 CFR 1910.38 (a)



- An employer must have an emergency action plan whenever an OSHA standard in this part requires one.
- Written and oral emergency action plans.
 - An emergency action plan must be in writing, kept in the workplace, and available to employees for review.
 - However, an employer with 10 or fewer employees may communicate the plan orally to employees.

3



Minimum elements of an emergency action plan.

- Procedures for
 - reporting a fire or other emergency;
 - emergency evacuation,
 - type of evacuation
 - exit route assignments;
 - employees who remain to operate critical plant operations before they evacuate;
 - headcount for all employees after evacuation;
 - rescue or medical duties;
- Emergency Contacts
- Alarm system with a distinctive signal
- Training for each employee covered by the plan:
 - When the plan is developed
 - When employee is assigned initially to a job;
 - When the employee's responsibilities under the plan change; and
 - When the plan is changed.

4

Management Overview

- Concerns
 - 1st concern – employees and public
 - Short-term and long term
- 2nd concern - property and environment
 - Salvage
 - Overhaul
 - Decontamination
- Final concern – Restoring operations
 - Business continuity
- The Safety Professional should ultimately act as a consultant in developing the plan. However, responsibility for emergency plan development is often left to her/him.

5

Emergency Planning Process

```
graph TD; A[Identify Potential Threats] --> B[Assess Risk]; B --> C[Assess Response Capabilities]; C --> D[Develop Emergency Plan]; D --> E[Conduct Training]; E --> F[Conduct Drills]; F --> G[Integrate with Community Emergency Management Plan]; G --> H[Assess available and needed Resources]; H --> I[Develop Emergency Procedures]; I --> J[Assess Effectiveness of plan]; J --> K[Continuous Improvement]; K -- feedback loop --> A
```

6



Evacuations

- External
 - Fire
 - Chemical Release
- Shelter in Place
 - Tornado
 - External threats



7

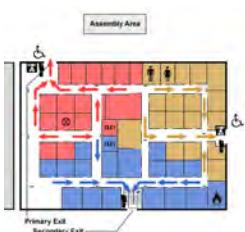
Medical Attention & First Aid

- Procedures:
 - Ensure medical personnel is available for consultation and advice on occupational health matters
 - Provide suitable facilities for quick drenching and flushing of the eye
- Training:
 - In the absence of readily accessible medical services, a person with a valid certificate in first aid training



8

Means of Egress



Procedures:

- Maintain unobstructed egress from every building and structure where employees are working
- Mark all exits with signs and mark access to exits where it is not immediately apparent how to exit
- Mark all non-exit doors that could be mistaken for an exit as "Not an Exit"

9



Fire Prevention & Protection



- Procedures:
 - Develop fire protection program
 - Provide fire extinguishers and other firefighting equipment
- Training:
 - If a fire brigade is necessary, adequately train them Training

10



Before writing a plan...



- Identify the potential hazards that could result in an emergency
- Assess risk of harm to people, property, environment
- Factors that determine plan complexity
 - Type of facility
 - Types of hazards
 - Resources
 - Personnel to write the plan
 - Response
 - In-house capabilities
 - Personnel
 - Equipment
 - Money

11



What kind of plan?



- Types
 - Action guides/checklists
 - Short and simple checklists
 - Used by knowledgeable personnel
 - Response plans
 - Written for each type of hazard
 - Does not cover before and after the disaster
 - Covers keys things to do during the emergency
 - Emergency management plans
 - Before, during and after
 - Implementing procedures to deal with the emergency by yourself as well as the aftermath
 - Mutual aid plans
 - Coordination with other facilities/third parties
 - Useful for small firms

12



Types of Emergencies



- Key is that they are foreseeable
 - The “probability” portion of the risk assessment
- Fire and explosion
 - First five minutes of a fire are most important
 - “incipient” stage
 - Small vs. large structural fires
 - Fire brigade?
 - Extinguisher use only?
 - Leave?

13

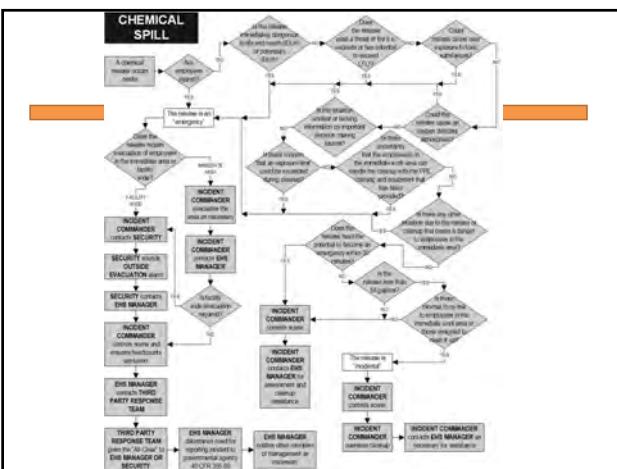


Types of Emergencies



- Chemical
 - Diking
 - Chemical neutralization
 - Chemical absorbents
- Emergency?
 - HazWoper
 - https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=1572#def
 - Releases that are Clearly Incidental

14



15



Types of Emergencies



- Weather
 - Hurricanes and Tornados
 - Floods
 - Is your facility in a flood plain
 - Blizzards
 - Flat roofs
- Earthquakes
 - Biggest concern is non-structural damage

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<https://www.fema.gov/media-library-data/1420417719892-b9b41636569f3c41eea88e70ddfae2e2/FEMA528.pdf>

EARTHQUAKE HOME HAZARD HUNT

21



Types of Emergencies



- Threats of violence
 - Bombs
 - Active shooter

22



"One Plan"



<https://nepis.epa.gov/Exe/ZyNET.exe/100038JY.txt?ZyActionD=ZyDocument&Client=EPA&Index=1995%20Thru%201999&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C95THRU99%5CTXT%5C00000011%5C100038JY.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1>

Note – Minerals Management Service (MMS)
Managed the nation's natural gas, oil and other mineral resources on the outer continental shelf
Renamed Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE)

23



Other Types of Emergencies



- Confined Space Rescue
- Trench Rescue
- External threats
 - Railway
 - Highway



24



Emergency Plan

Emergency Plan

- Typical components
 - Company policy, organization chart
 - Expected disasters
 - Map of facility
 - List of agencies and contacts
 - Facility warning system description
 - Central communications system
 - Facility-wide alarms should not tell you what is happening...they should tell you what to do
 - Shutdown procedures
 - Chain of Command
 - ICS – Incident Command System
 - Command responsibility is passed to the most knowledgeable
 - Keep chain small
 - Appoint personnel based on ability to respond
 - How to handle visitors and customers
 - Equipment and resources

25

Incident Command System

Incident Command System

```
graph TD; IC[INCIDENT COMMANDER] --- SAFETY[SAFETY]; IC --- INFO[INFORMATION]; IC --- LIAISON[LIAISON]; SAFETY --- OPS[OPERATIONS]; SAFETY --- PLANNING[PLANNING]; INFO --- LOGISTICS[LOGISTICS]; LIAISON --- FA[FINANCE/ADMINISTRATION]
```

26

Emergency Training

Emergency Training

- Table-top drills
- Dress rehearsal
 - Include Response personnel
- Requirements
 - Emergency Action Plan
 - 29 CFR 1910.38
 - Fire Extinguisher Training
 - 29 CFR 1910.157
 - HAZWOPER Training
 - 29 CFR 1910.120
 - Fire Brigade Training
 - 29 CFR 1910.156
 - Medical Training
 - 29 CFR 1910.146;
 - 29 CFR 1910.151;
 - 29 CFR 1910.103
 - Rescue Training
 - Confined space rescue
 - Respiratory Protection
 - High angle training

27



- "Golden Rule" of Emergency Preparation and Response:
- It's better to have it and not need it, than to need it and not have it.

28



WORKPLACE VIOLENCE

29



30



What Is Workplace Violence?

- The U.S. DOL defines "workplace violence" as any act or threat of physical violence, harassment, intimidation or threatening and disruptive behavior happening at the jobsite.
- NIOSH defines workplace violence as "violent acts, including physical assault and threats of assault, directed towards persons at work or on duty" (NIOSH 2004, 5).
- Four categories of workplace violence:
 - The person who came to commit the crime
 - Has no relationship to the workplace
 - Is the recipient of a service
 - Has an employment relationship with a current or former employee
 - Has a personal relationship with a current or former employee

• Source: *Workplace Violence: Issues in Response*, U.S. DOJ, FBI

31



- BLS shows 458 of the 5,147 fatal workplace injuries reported in 2017 were intentional injury by another person
 - According to Don Snizaski of EHS Today:
 - Taxi Drivers
 - Lost Work
 - Men
 - Women

32



- It is estimated that nearly 25 percent of all workplace violence goes unreported.

Source: Business Health Services

33



Risk Factors for Workplace Violence



- The Workplace:
 - Is located in area of high crime
 - Operates mostly at night or early in the morning
 - Handles or has access to money
 - Has customers who are either unstable or volatile (health care patients or people who are under arrest/in jail) or are under the influence of alcohol
 - Has mobile workplaces (taxicab or police cruiser)
 - Has employees who work alone or with only one other co-worker

34

Active Shooter

- <https://www.youtube.com/watch?v=p4lJA5Zpzz4>
- https://www.dhs.gov/xlibrary/assets/active_shooter_booklet.pdf



The graphic consists of three panels: 'RUN/ESCAPE IF POSSIBLE' (white figure running), 'HIDE IF ESCAPE IS NOT POSSIBLE' (white figure crouching behind a desk), and 'FIGHT ONLY AS A LAST RESORT' (white figure holding a weapon).

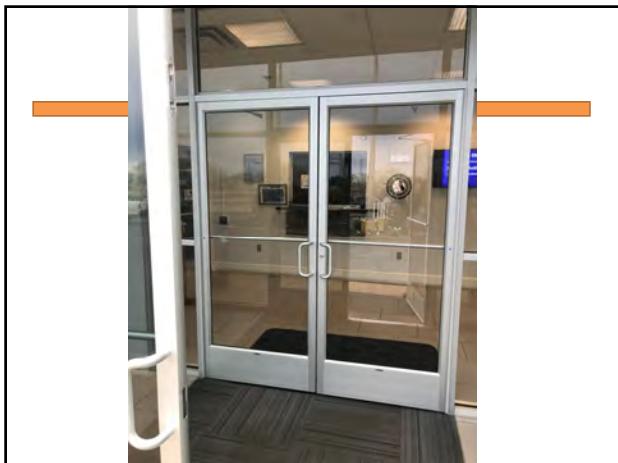
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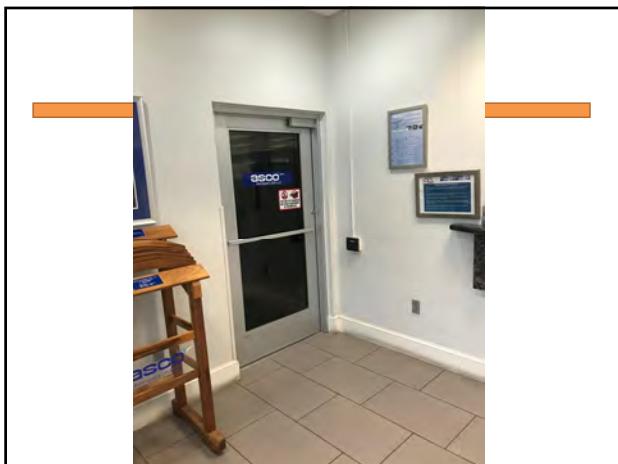
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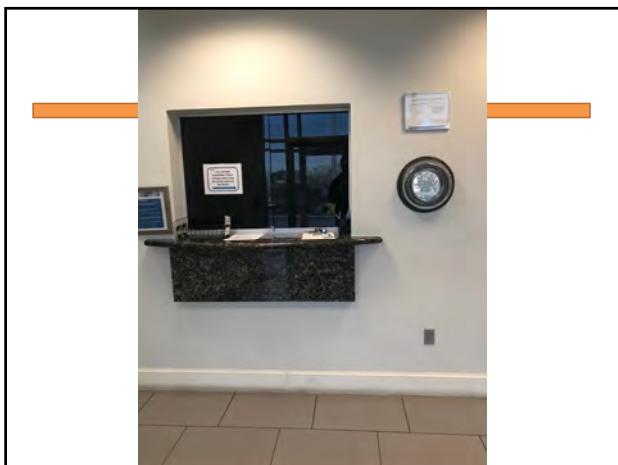
Collaborative Bachelor's Degree Program of Fire Protection and Safety Engineering Technology between Southwest Jiaotong University and Oklahoma State University, U.S.A.



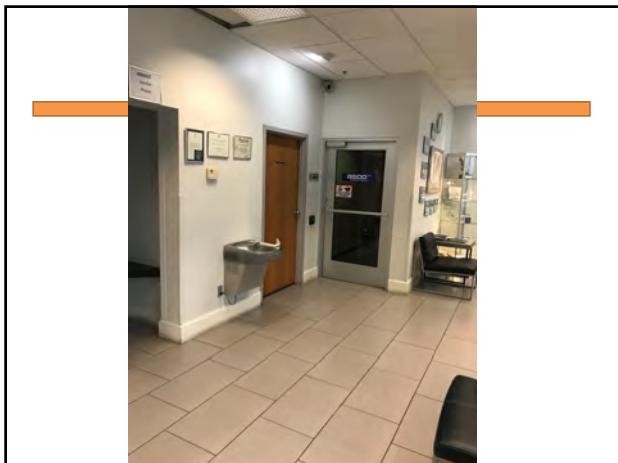
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40

Factors Leading to Workplace Violence

• Employee Disenchantment

- This person may not be happy with his or her supervisor or with the job itself, or may be unhappy because of personal circumstances that have carried over to the workplace.
- A person who is disenchanted in the workplace could show the propensity toward workplace violence.

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Factors Leading to Workplace Violence

• Aggressive Behavior

- Fear
- Intimidation
- Capitulation
- Punishment
- Anxiety
- Alarm
- Emotional Distress
- Anger

42



Examples of Aggressive Behavior

National Crime Prevention Council

- Harassment (telephone, written, face-to-face)
- Stalking
- Threats
- Inappropriate communications
- Trespassing or returning to the workplace after being told to leave
- Occupying or entering victim's dwelling and/or vehicle
- Falsely impersonating with an intent to harass
- Making unwanted purchases in the victim's name

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Signs of Possible Victimization



Frequent or unplanned leave	Change in job performance	National Crime Prevention Council
Unexplained bruises or injuries	Sudden change of address	
Depression	Eating disorders	
Self neglect	Panic attacks	
Anxiety	Drug and alcohol dependence	

44



Prevention



- Physical Security
 - Exterior Access Control
 - Property border
 - Parking lot
 - Entrance doors
 - Gates,
 - Interior Access Control
 - Main entrance
 - Main lobby
 - High security areas
 - Locked doors, enclosed counters, bulletproof glass, CCTV, guards, cash handling procedures, etc. CCTV, alarm system

45



Physical Security

- Emergency plan(s)
- Code word(s)
- Safe rooms
- Electronic door access card
- Key control
- Unmarked parking spaces

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Workplace Violence Prevention Programs

- An effective workplace violence prevention program will have the following elements:
 - Management commitment and employee involvement
 - Policy statement
 - Threat assessment team
 - Workplace analysis
 - Hazard prevention and control
 - Program evaluations
 - Training
 - Incident response
 - Record keeping

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Prevention

- Pre-Employment Screening
- Look for warning signs
- What is negligent hiring?
- What are foreseeable circumstances?
- What are propensities?

48



Employer Reaction and Support

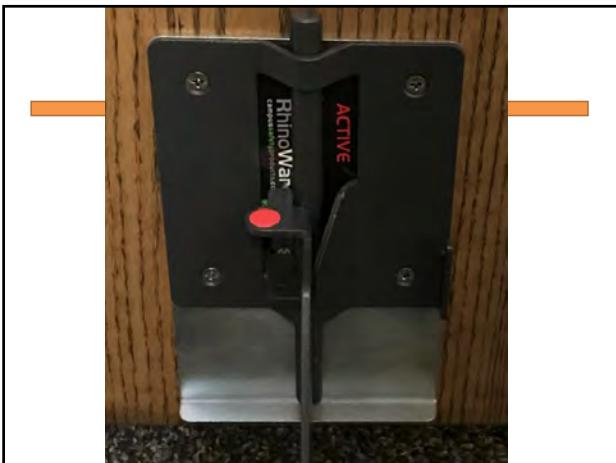
- Evaluate the threat
- Create an intervention plan
- Notify and involve law enforcement
- Keep in close contact with the victim
- Make referrals
- Learn whether court orders have been obtained
- Allow for time off for victim
- Review and modify work spaces
- Be mindful of privacy
- Notify other employees as appropriate

National Crime Prevention Council

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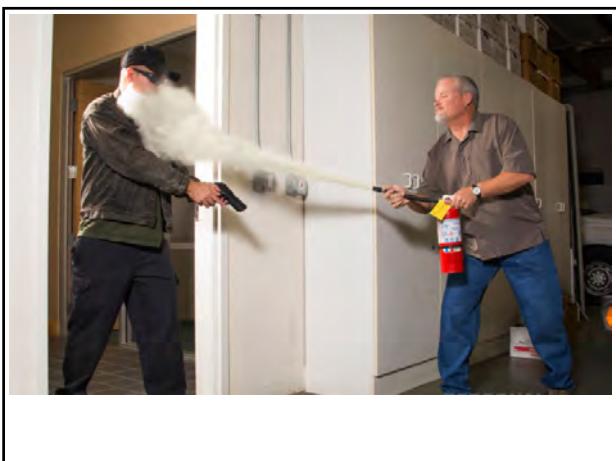
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FPST 3013 Safety Management

Behavior Based Safety

1



How do we motivate people to work safely?



2



Traditional Approach to Safety



Top-down control

Design safest equipment and processes

Educate and train People

Use discipline to enforce compliance

Regulations and Rules

Measuring Accidents

Failure Oriented

Reactive

3



Incentive Programs



- Controversy
 - Underreporting
 - Incorrect OSHA recordkeeping information
- What do you reward? lagging or leading indicators???
 - No OSHA recordable accidents
 - Lower incident rate
 - Reporting near misses
 - On-time corrective action closure
 - Reward behaviors...not outcomes
- Strategies for Success
 - Be very careful that the award is designed to encourage the behavior desired and discourage the behavior not wanted

4



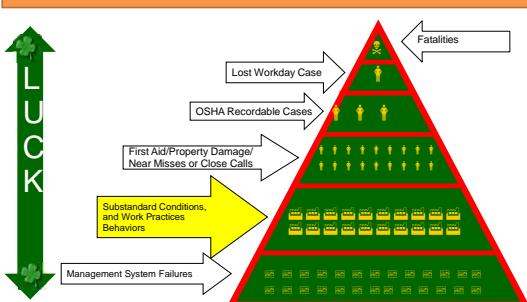
OSHA Does Not Like Incentive Programs



- Advantages
 - Add interest to an established safety program
 - Increase safe behavior
 - Improve safety culture
 - Encourage peer pressure in the right way
- Disadvantages
 - Ripe with controversy
 - May encourage underreporting
 - Reward is insufficient so employees lose interest
 - Reward is not tied to behavior

5

The Incident Pyramid



6



HOW DO WE MOTIVATE PEOPLE TO WORK SAFELY?

7



New Approach



- Safety Culture
- Proactive
- Achievement focused
- Personal Responsibility and Accountability
- Employee Empowerment
- Behavior Based

8



BEHAVIOR



Heinrich

- Up to 98% of all work-related accidents are BEHAVIOR RELATED (**Heinrich 1908**).
 - 88% Unsafe Behaviors
 - 10% Unsafe Conditions
 - 2% uncontrollable factors



9



BEHAVIOR



- The ROOT CAUSE of most UNSAFE CONDITIONS is someone's UNSAFE BEHAVIOR
- UNSAFE BEHAVIOR IS THE MOST COMMON ROOT CAUSE.

10



Attitude



- A STATE OF MIND; our PERCEPTION of something or someone.
- An INTERNAL WAY OF THINKING or,
- A BELIEF that INFLUENCES our BEHAVIOR.
- Can you change someone else's attitude?



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BEHAVIOR

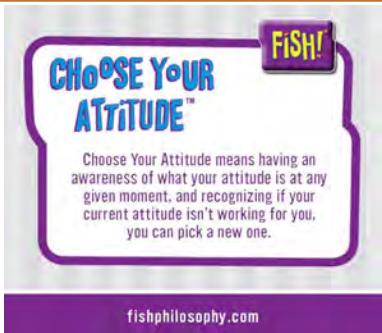


- An OBSERVABLE ACT or ACTIVITY.
- An INSTANTANEOUS EVENT
- BEHAVIOR can also be a series of ACTS over a period of TIME.
- A REFLECTION of our ATTITUDES and BELIEFS.
- ACTIVITY without UNDERTONES or IMPLICATIONS.

12



We Choose Our Attitudes!



13



Why Focus on Behavior?



- Behavior can be observed, therefore it can be changed.
- Is it instantaneous?
- Behavioral changes lead to changes in experiences, & beliefs which affect attitude.

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Focusing on Behavior



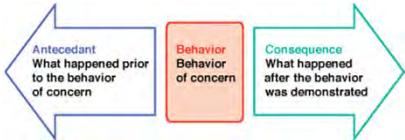
- Provides opportunities
 - to reinforcing safe behavior through recognition
 - To correct at risk behavior through coaching
- Before it even gets to "Near Miss" stage



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In order to address behavior we
need to understand it



ABC's

16



ABC's



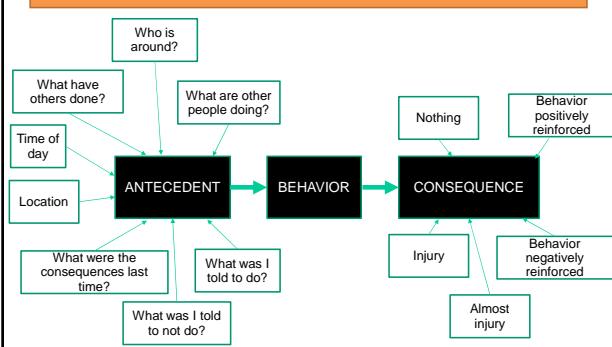
ANTECEDENT

- A person, place, thing or event which comes BEFORE a behavior and ENCOURAGES a person to perform in a certain manner

17



ABC's



18



INFLUENCING BEHAVIOR



ANTECEDENT

- Cell phone beeps
- Ringing doorbell
- Ringing alarm clock
- Red stoplight
- Hot stove
- Dark room

BEHAVIOR

- Look at phone
- Answer the door
- Get out of bed
- Stop the car
- Do not touch
- Turn on light

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COMMON ANTECEDENTS IN THE WORKPLACE



- Danger/Caution/Warning Signs
- SOP's, **JSA's**, Work Instructions
- Bells, whistles, sirens and horns
- Control panel lights/indicators
- Goals and objectives
- Behavior of co-workers
- Supervisor's instructions
- Company policy
- Culture

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Characteristics of Antecedents

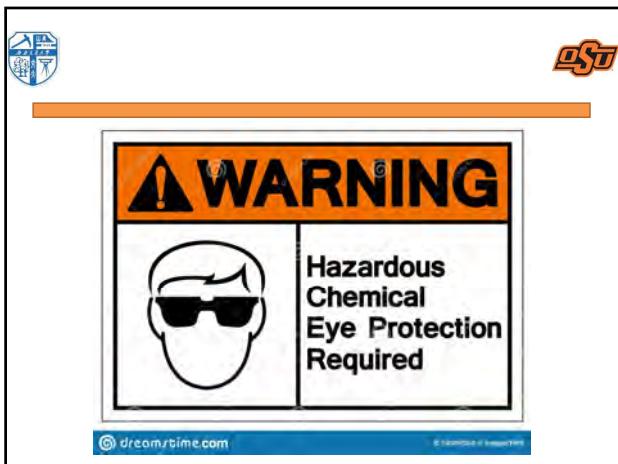


To be effective in triggering the desired behavior, an antecedent must not only identify the specific behavior, it must specify the outcome in advance.

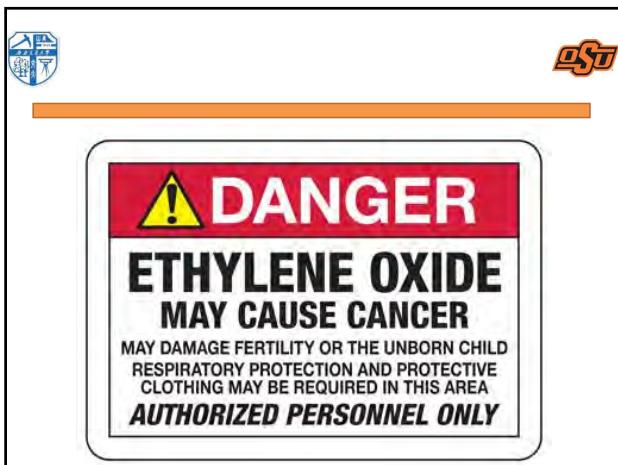
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24



Behaviors



- The **NATURAL RESPONSE** to a antecedent
- Quite **PREDICTABLE** under most circumstances



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CONSEQUENCES

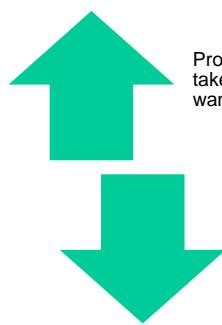


- **Positive** consequences are viewed as a **reward**
- **Negative** consequences are viewed as **punishment**
- **Positive** consequences will **INCREASE** the frequency of a behavior
- **Negative** **DECREASE** the frequency of a behavior
- When **NEGATIVE** consequences are used alone, the undesired behavior **will decrease only to the extent that the negative consequences cease**

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POSITIVE & NEGATIVE CONSEQUENCES



Provide something we want or, take away something we don't want.

Provide something we don't want or take away something we do want

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Which candy machine will be used most often?



MACHINE #1

- Routinely works
- Deposit correct change and candy bar drops out.

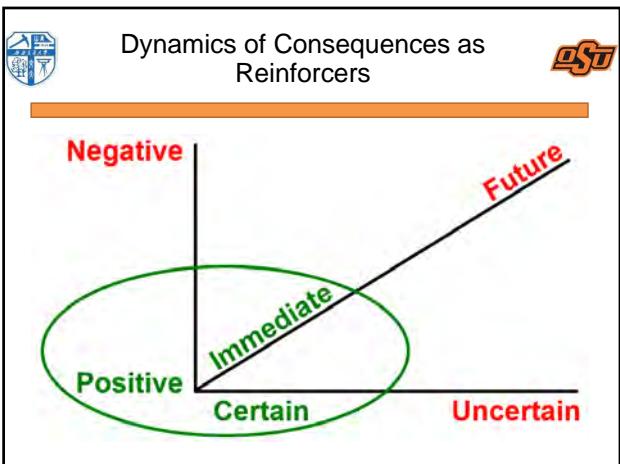
MACHINE #2

- Usually works
- Sometimes malfunctions & returns money with the candy bar
- Will always deliver the candy

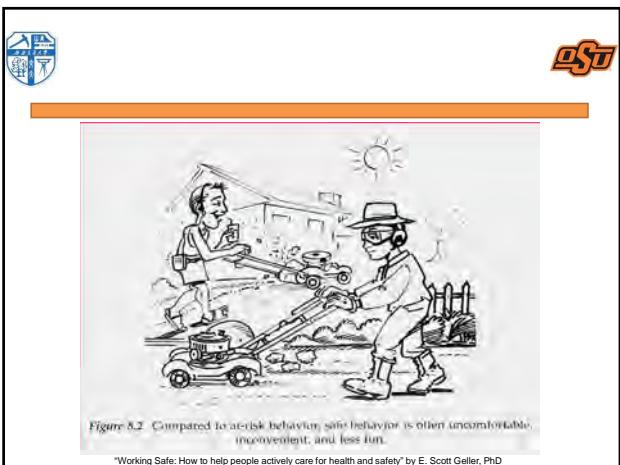
MACHINE #3

- Unpredictable
- More often than not, will take the money but not deliver the candy bar

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29



30



ABC Analysis

Consequences	+/-	I/L	C/U
Saves time	+	I	C
Injury or death	-	I	U
Reprimand	-	I	U
Comfort	+	I	C
Convenience	+	I	C
Peer Approval	+	L	C
Boss Approval	-	L	U
total	4 pos 3 neg	5 I 3 L	4 C 3 U

- Behavior
 - Not Wearing PPE
- Antecedents
 - Availability
 - Peer Pressure
 - Rushing
 - Time of Day
 - Lack of Training
 - Anticipation of mild consequences

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ABC Analysis

Consequences	+/-	I/L	C/U
Takes Time	-	I	C
Injury or death	-	L	U
Uncomfortable	-	L	C
Inconvenient	-	I	C
Peer Approval	+	I	C
Boss Approval	+	L	U
Total	2 pos 4 neg	3 I 3 L	4 C 3 U

- Behavior
 - Wearing PPE
- Antecedents
 - Availability
 - Peer Pressure
 - Rushing
 - Time of Day
 - Lack of Training
 - Anticipation of Mild consequences

32

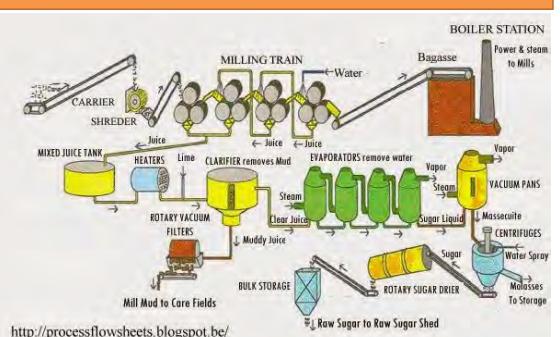
ISSUE	Flip it
Takes too much time to get PPE	Make it readily available at all worksites
Disciplinary actions for failure to wear	Coaching first, consistency always
Uncomfortable	Provide multiple options in styles & sizes
Peer Approval	Culture - Make wearing PPE "Cool"
Boss Approval	Coaching, consistency, and recognition
Fear of injury or death	Tell stories about what happens when you don't wear PPE – Make it personal

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THE SAFE-BEHAVIOR OBSERVATION PROCESS

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Behavioral Management



- In order to improve behavior, management must understand the “why” of behavior
 - Two reasons for doing something unsafe
 - Always approach the situation first seeking to identify which one...then the why
- Identification and control of safety-related behaviors
 - Evaluating critical behaviors

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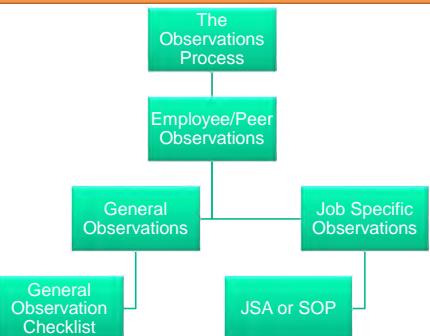
 Behavior Is An Observable Activity 



- Observations are used to collect data on safe and unsafe behaviors
- Provide opportunities for immediate reinforcement or correction of behaviors as they occur

37

 Two Types of Observation Checklists 



```
graph TD; A[The Observations Process] --> B[Employee/Peer Observations]; B --> C[General Observations]; B --> D[Job Specific Observations]; C --> E[General Observation Checklist]; D --> F[JSA or SOP]
```

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 Generic Behavior Observation Checklist 

Critical Behaviors	Safe	At Risk
Body Positioning		
Visual Focusing		
Communicating		
Pacing of Work		
Moving Objects		
Complying with Lock/Tag/Try		
Complying with Permits		
PPE		
Total Safe Behaviors		
Total Behaviors Observed		
% Safe		

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Specific Behavior Observation



Behavior – Planting a Tree	Safe	At-Risk
Select a site. Call local authorities; plan for future growth.		
Collect and inspect tools. Check all equipment for damage and then repair and/or replace		
Dig the hole. Get help; dig hole with small shovels full of dirt; move smoothly & slowly; wear gloves, safety glasses & shoes.		
Transport tree to location. Get help; select & clear route.		
Place and position tree into hole. Get help or kneel; use mechanical devices; wear safety glasses		
Cut binding on root ball. Wear safety glasses; wear gloves; kneel while cutting binding.		
Back fill the hole. Back fill with small shovels full of dirt; wear gloves.		
Stabilize tree. Wear gloves; keep hands off stakes.		
Water and fertilize the tree. Wear non-skid shoes; wear dust filter mask.		
Clean up. Wear gloves & safety glasses.		

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Safety Observers



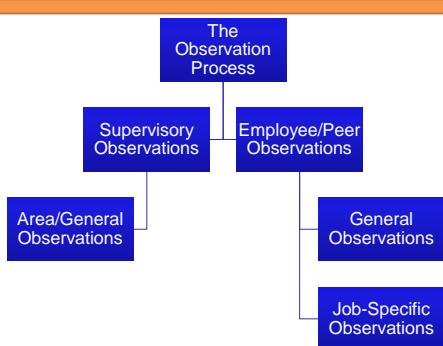
- The observer makes notes on the behaviors he/she observes
- The observer provides immediate feedback to the employee, reviewing the results of the process



41



Supervisors can get involved too



42



How is an Observer Program supposed to work?



- Employees will be asked to help identify the root causes and offer suggestions on how to correct the problem
- **SAFETY OBSERVATION DATA IS NOT TO BE USED TO GENERATE DISCIPLINARY ACTION**

43



How is an Observer Program supposed to work?



- Properly managed observation programs actually reduce the amount of discipline
- Employees work with each other to reinforce safe behavior and correct unsafe behavior

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How to Give Feedback



- SBI+R
 - Situation
 - Behavior
 - Impact
 - Results
- State the Situation
- Describe the Behavior Observed
- Discuss the Impact of the Behavior
- Agree on a positive result for the future

45



How to Receive Feedback

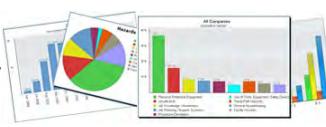


"Thank you for the Feedback"

- Own your own behavior
- Ask clarify questions
- Listen and respond with empathy
- Seek to understand, then to be understood
- Ask for help in solving problems

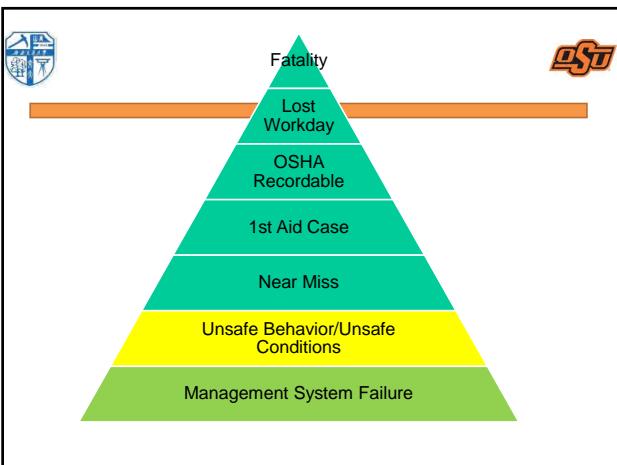
46

What to do with the information?



- Store and organize information
- Develop progress reports
- Monitor the quality of the observations
- Identify the behaviors occurring most frequently
 - TO IDENTIFY TARGET BEHAVIORS
 - To allow a proactive approach
 - To reduce the base of the accident pyramid

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The diagram illustrates the 'Accident Pyramid' with the following layers:

- Fatality
- Lost Workday
- OSHA Recordable
- 1st Aid Case
- Near Miss
- Unsafe Behavior/Unsafe Conditions
- Management System Failure

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Signs of something going wrong!



- Too much focus on "unsafe" behaviors
- "Audit" mentality
- Failure to recognize need for reinforcing safe behaviors
- Lack of Trust
- Use of behavior data for disciplinary actions

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Criticisms of Behavior Based Safety

	Labor unions have not typically favored
	"Blame the worker" mentality
	Poor training on observations and feedback lead to miscommunication and problems.
	Lack of management support
	Takes too much time/doesn't work
	It's not a "magic pill" for safety
	"Human Performance Improvement" is the new buzzword

50



How do you address unsafe behavior?

Work Safe!



**OR I'LL TELL
YOUR MOTHER**

51



It's about influence



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It's about influence



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It's about influence



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Addressing unsafe behavior



- Ask the person if they want to hear what you have to say
- Share your concerns with them
 - Discuss the risk of their action to them
 - Discuss the potential outcomes
- Get them to agree to the risk
 - Must happen in order to proceed
- Have them determine how to mitigate or eliminate the risk and wait until they give you something that you agree with
 - Do not tell them what to do
- Actively listen and reflect what they have said...that they agree to the risk and that they agree to do something different to mitigate or eliminate the risk
- Part ways
- What if they do it again in the future?

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Addressing Unsafe Behavior

I CHOSE TO LOOK THE OTHER WAY

Don Merrell

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