

SAFETY:
It isn't Rocket Science
...or is it?

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Presented By:

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SAFETY: It isn't Rocket Science ...or is it?

- Safety vs. P-Q-P
- Safety First?
- 1986 Space Shuttle Disaster
- Accident Investigation Weaknesses
- Loss Analysis Shortcomings

Responsibility for Safety?

- Who has the responsibility for safety?
- Who has had that responsibility thrust upon them?



Safety First

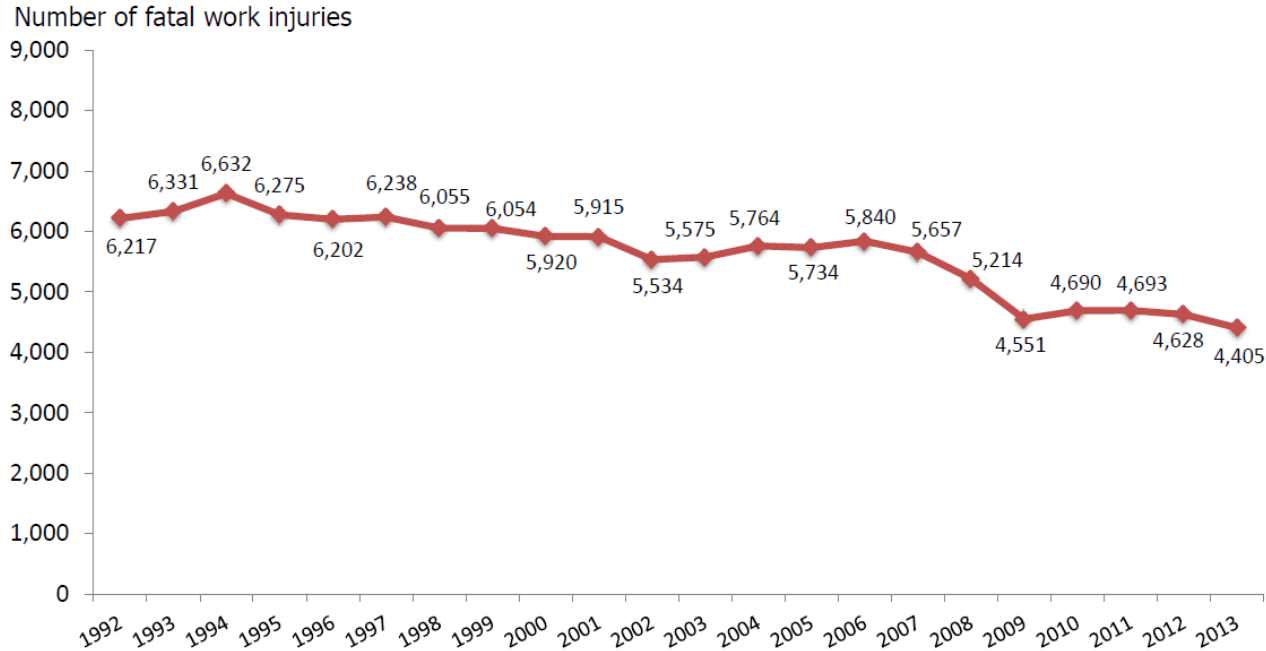
- Safety First

Safety First

- Safety (is never) First
- What really is first?
- P-Q-P
- Profits – Quality - Production

Fatal Work Injuries

Number of fatal work injuries, 1992–2013*



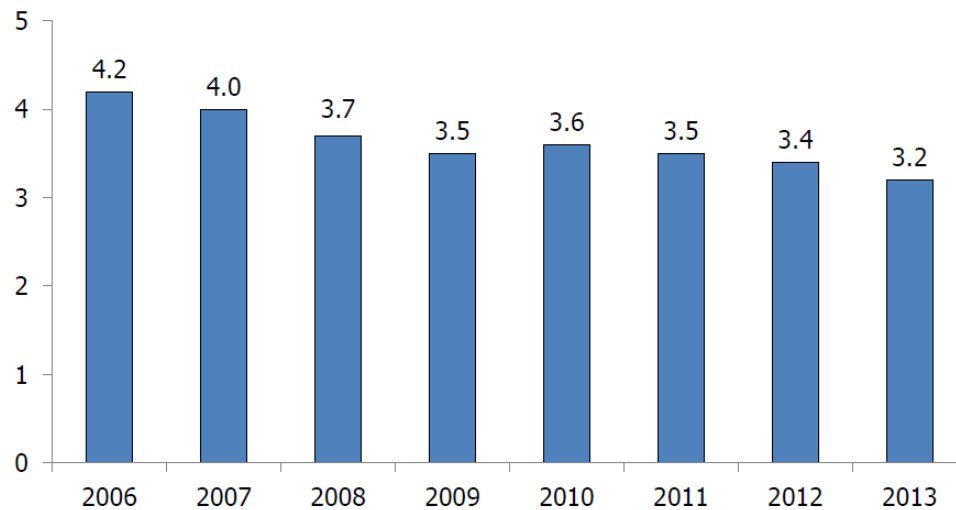
The 2013 preliminary total of 4,405 fatal work injuries is 5 percent below the final count of 4,628 fatal work injuries reported for 2012.

*Data for 2013 are preliminary. Data for prior years are revised and final.
Note: Data from 2001 exclude fatal work injuries resulting from the September 11 terrorist attacks.
Source: U.S. Bureau of Labor Statistics, U.S. Department of Labor, 2014.

Fatal Work Injuries

Rate of fatal work injuries, 2006–2013*

Fatal work injury rate
(per 100,000 full-time equivalent workers)



The preliminary rate of fatal work injuries in 2013 was 3.2 fatal work injuries per 100,000 full-time equivalent workers, below the final 2012 rate of 3.4.

*Data for 2013 are preliminary. Data for prior years are revised and final.

Note: Rate = (Fatal work injuries/Total hours worked by all workers) x 200,000,000 where 200,000,000 = base for 100,000 full-time equivalent workers (FTEs) working 40 hours per week, 50 weeks per year. The total hours worked figures are annual average estimates of total at work multiplied by average hours for civilians, 16 years of age and over, from the Current Population Survey (CPS).

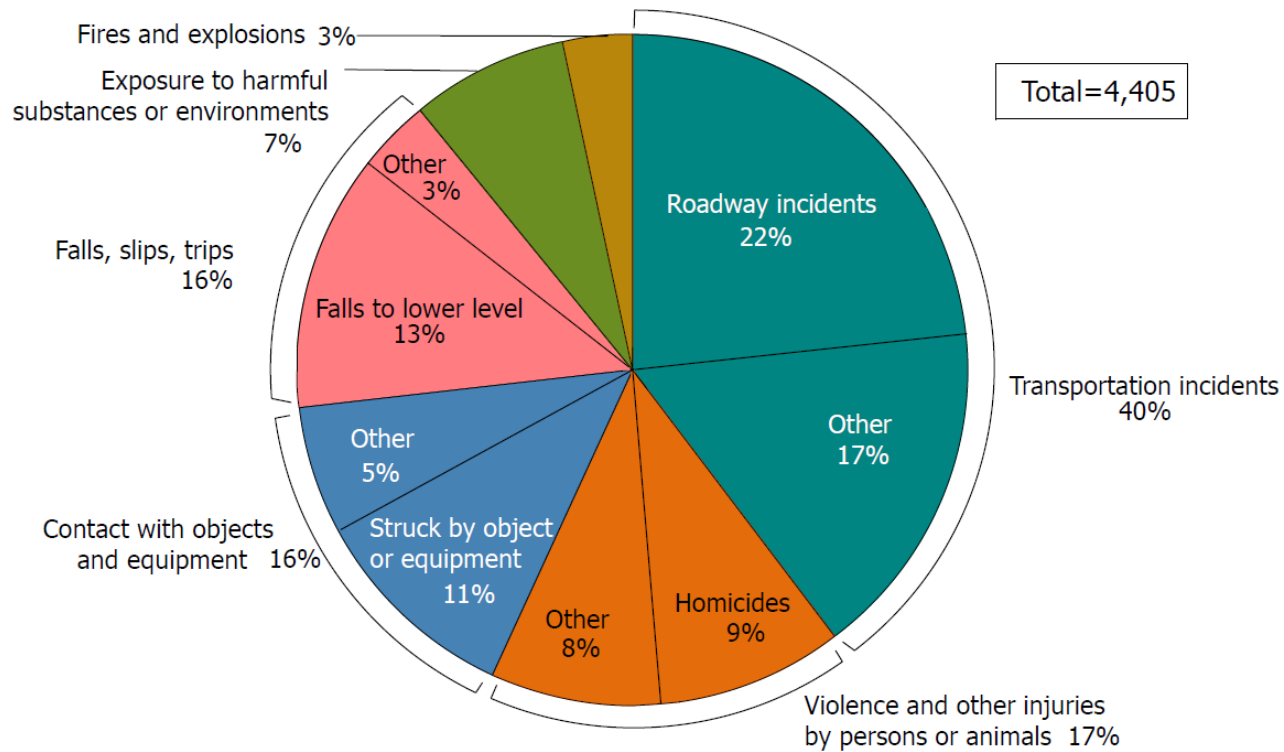
In 2008, CFOI implemented a new methodology, using hours worked for fatal work injury rate calculations rather than employment. For additional information on the fatal work injury rate methodology, please see <http://www.bls.gov/iif/oshnotice10.htm>.

Source: U.S. Bureau of Labor Statistics, U.S. Department of Labor, Current Population Survey, Census of Fatal Occupational Injuries, and U.S. Census Bureau, 2014.

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Fatal Work Injuries

Fatal occupational injuries, by major event, 2013*



More fatal work injuries resulted from transportation incidents than from any other event in the 2013 preliminary counts. Roadway incidents alone accounted for nearly one out of every four fatal work injuries.

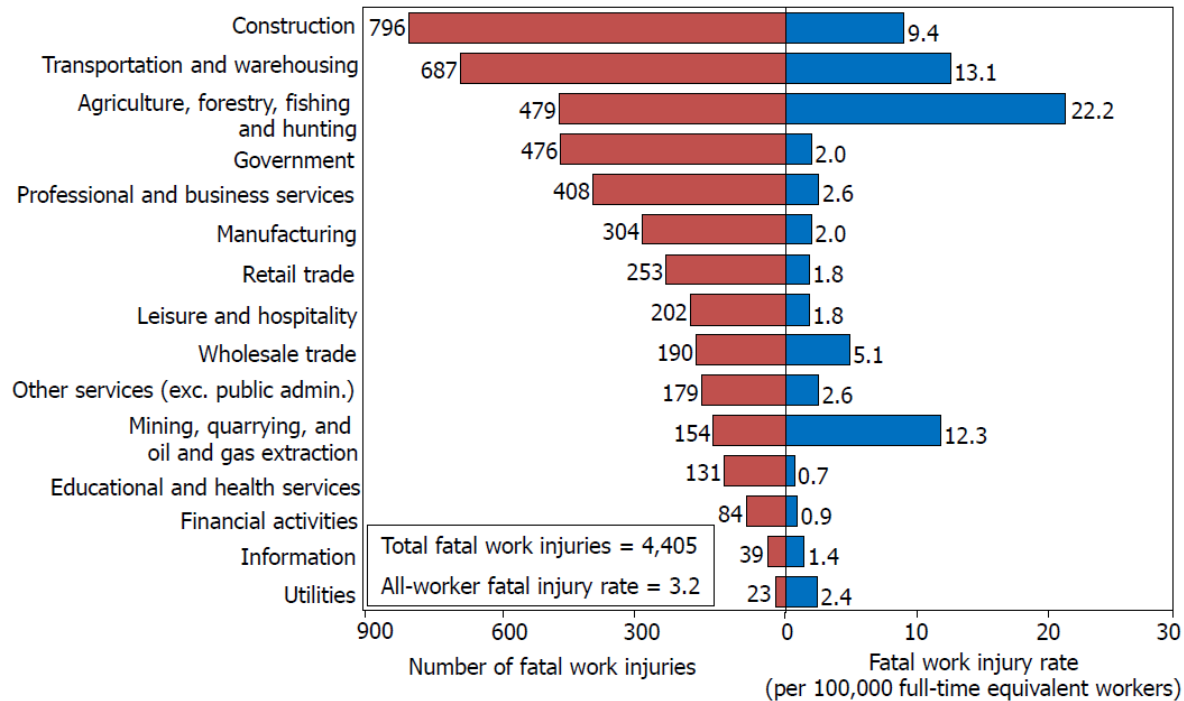
*Data for 2013 are preliminary.

Note: Transportation counts presented in this release are expected to rise when updated 2013 data are released in spring 2015 because key source documentation detailing specific transportation-related incidents has not yet been received. Percentages may not add to 100 due to rounding.

Source: U.S. Bureau of Labor Statistics, U.S. Department of Labor, 2014.

Fatal Work Injuries

Number and rate of fatal occupational injuries, by industry sector, 2013*



Construction had the highest preliminary count of fatal injuries in 2013, but the agriculture, forestry, fishing and hunting sector had the highest fatal work injury rate.

*Data for 2013 are preliminary.

Note: Fatal injury rates exclude workers under the age of 16 years, volunteers, and resident military. The number of fatal work injuries represents total published fatal injuries before the exclusions. For additional information on the fatal work injury rate methodology, please see <http://www.bls.gov/iif/oshnotice10.htm>.

Source: U.S. Bureau of Labor Statistics, U.S. Department of Labor, 2014.

Hazards and Exposures

- Identifying
- Correcting
- Responsibility

Rocket Science

- 1986 Space Shuttle Challenger Disaster
- Circumstances

Normalization Of Deviance

- Natural Human Tendency to Take a Shortcut (especially in pressure situations)
- To Accept a Lower Standard of Performance
 - Nothing Bad Happens
 - Next Time, Tempted to do Again
 - Lose sight of Deviance
 - Bar **IS** Lowered

Normalization of Deviance

- Accepting something never expected, never understood
- When your life is on the line, you want the best team supporting you
- Not one that takes short cuts

Normalization of Deviance

- Predictable surprises
- NO shortcuts
- If you feel you need to take a shortcut,
Take a timeout

Countdown to Teamwork

Astronaut/Professional Speaker/Mountaineer/Author

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Statistics

- Downstream measure
- Measure a failure in the system
- <1% of undesired events result serious injuries
 - measured and used for determining inspections, awards, etc.
- Industry norms?

Safety First?

- Safety statements, slogans, incentives
- Warm and fuzzy vs. reality
- Role of:
 - management
 - employees
 - safety department

When Does Safety Become First?

- Only after someone gets hurt
- For short time afterwards
- Business as usual
- Back to Normal

When Does Safety Become First?

- Only after someone gets hurt
- For short time afterwards
- Business as usual
- Back to Normalization of Deviance

What is a Job Hindrance?

- A situation, condition, or event that interrupts or interferes with the orderly progress of the job.

What is an Accident?

- An undesirable event that results in harm to persons, damage to property, or both, usually occurring suddenly and unexpectedly; sometimes having taken significant time to reach the point of occurrence.
- Accidents can be major job hindrances.

What is an Incident?

- Like an accident, an undesired event, usually occurring suddenly and unexpectedly, but without the resulting harm to persons or damage to property.
- Referred to as a: **Near-Miss**.

Causes Accidents

- Accidents are a breakdown in the system

Poor Management Causes Accidents

- Accidents are a breakdown in the management system
- Management has:
 - Ultimate authority
 - Ultimate responsibility
 - Ultimate accountability

Luck Factors

- **Factor #1**
 - Accident or incident
- **Factor #2**
 - Business interruption
 - Property damage
 - Injury
- **Factor #3**
 - Severity

Accident Investigations

- Purpose?
- When to conduct?
 - Accident
 - Incident
 - Operational

Why Conduct Investigations?

- **Objectives**

- Improve supervisory skills by presenting a method - a formal approach - for conducting effective accident investigations.
- Instill the importance of investigating accidents to identify true *operational inefficiencies*.
- Eliminate a Normalization of Deviance mindset

Accident Investigation Failures

- Poorly completed
- Fault-finding
- Wrong people
- Miss the true operational issue

Responsible Condition

- The condition(s) that, if eliminated, should result in no further repetition of the particular loss, accident, incident, or other operational problem...under the same set of circumstances.

Equipment

Select

Arrange

Use

Maintain

Material

Select

Place

Handle

Process

People

Select

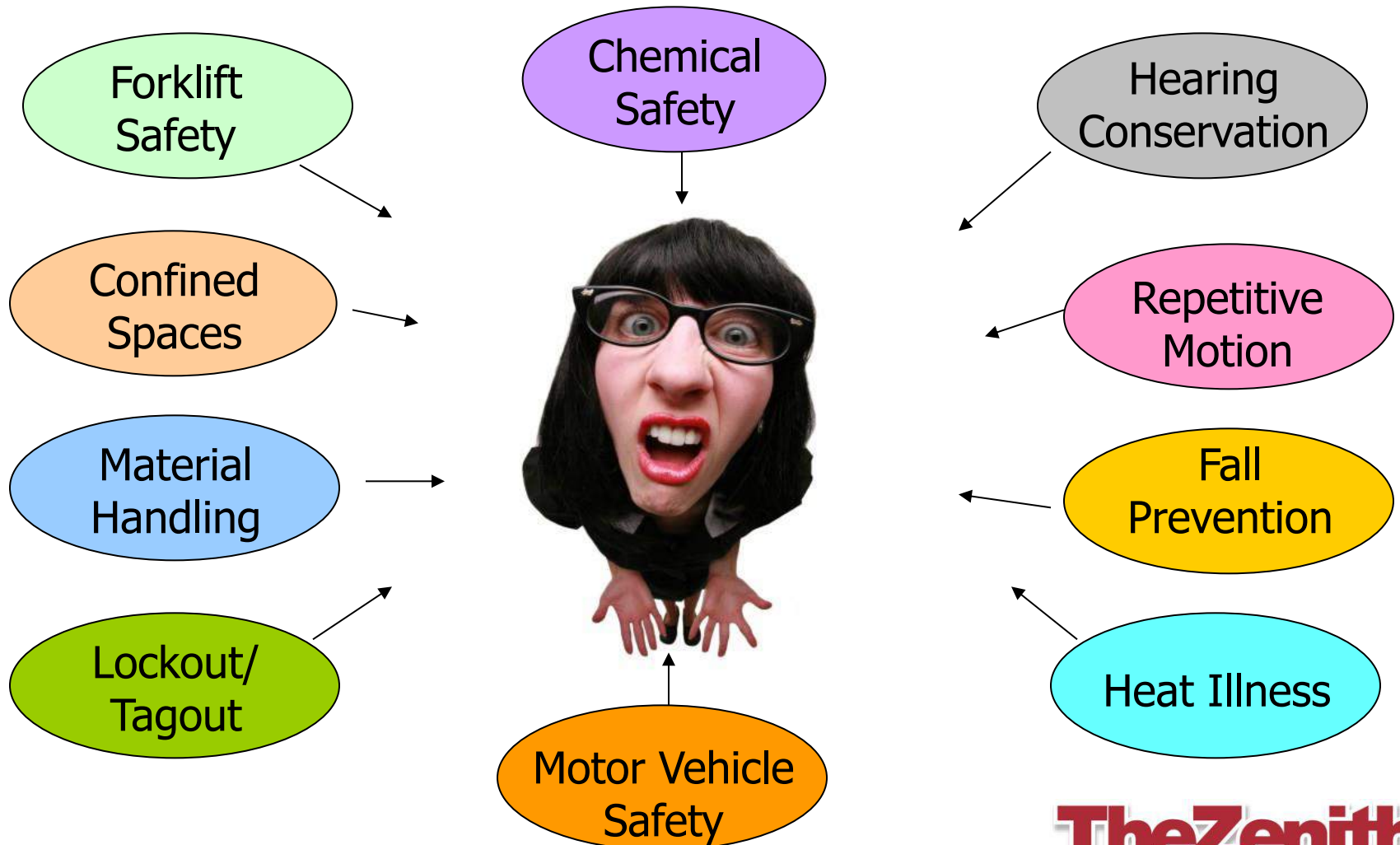
Place

Train

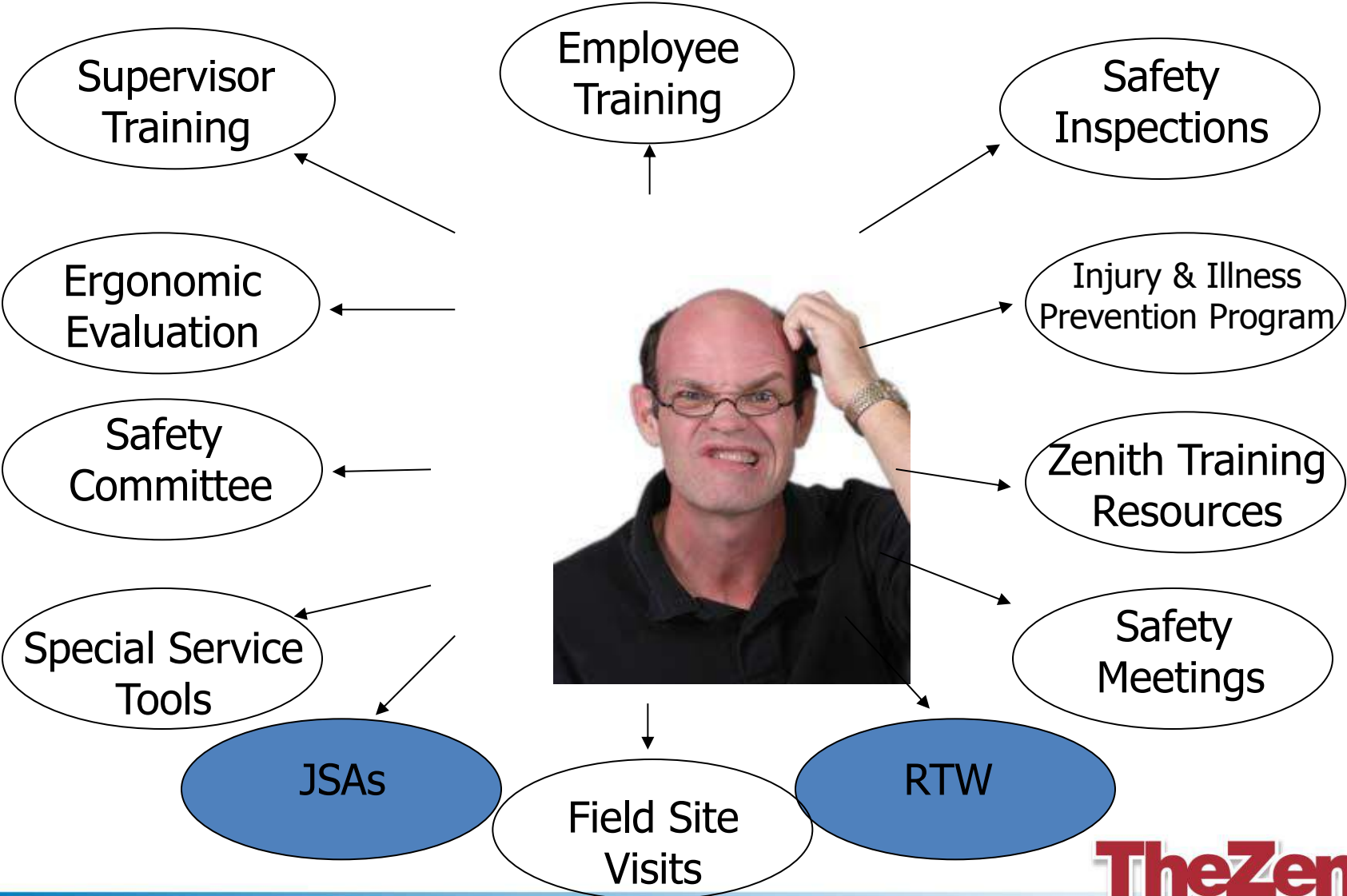
Lead

Loss Analysis

What should I work on?



What should I do?



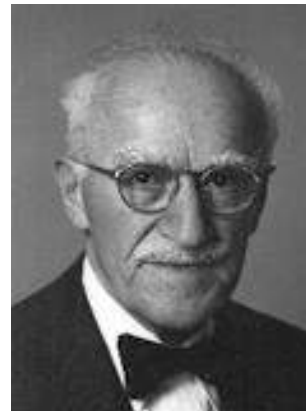
Vilfredo Pareto ?



1848 – 1923

“Pareto Principle”

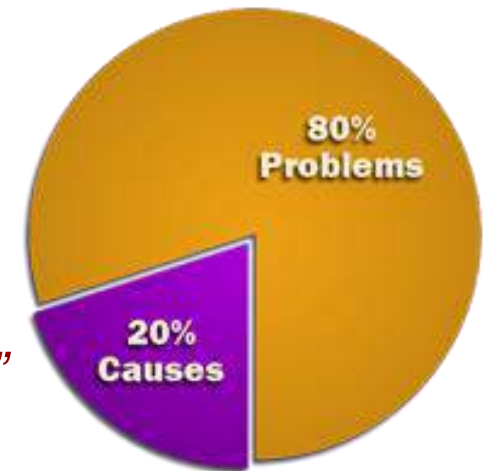
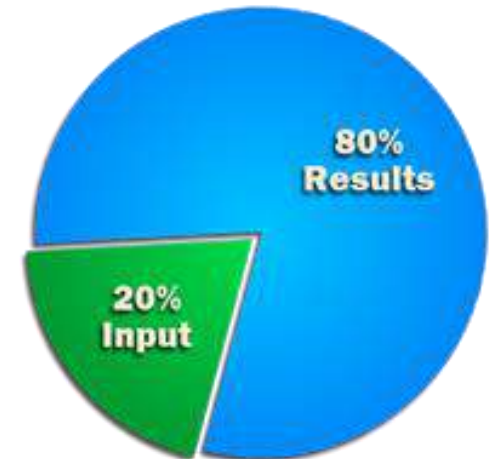
“80 – 20 Rule”



1904-2008

“Juran Principle”

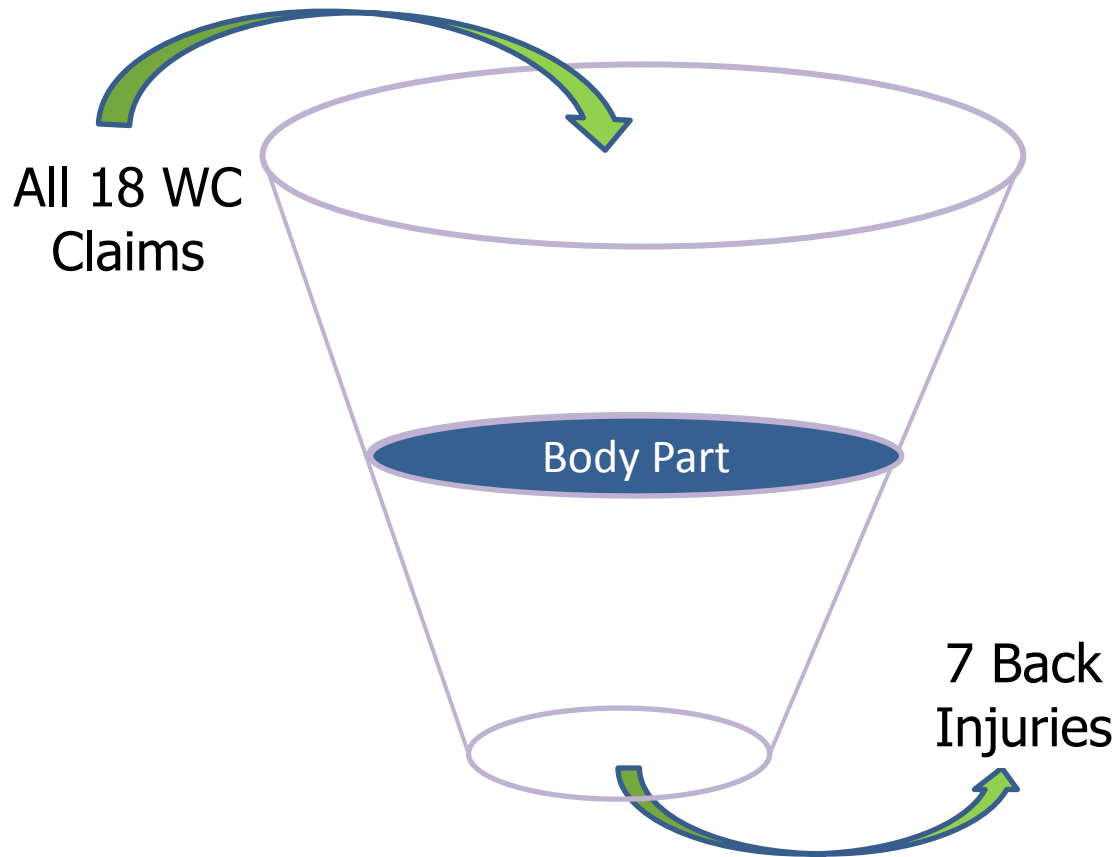
“Vital Few and Trivial Many”



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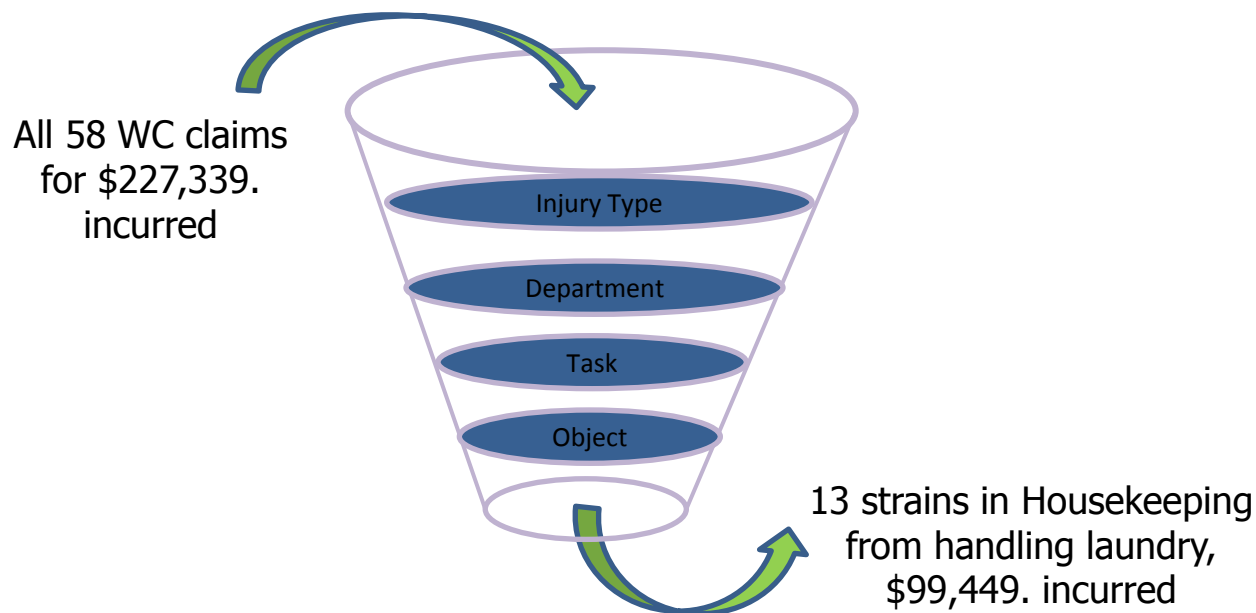
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Single-level Loss Data Analysis



Focus:

*22% of claims (frequency) resulted in
44% of claim costs (severity)*



Your Loss Information Resources

- Paper Loss Runs
- Fancy Charts & Graphs
 - Single level...Thanks a lot!...for nothing
- Ask for a database
- Develop basic Excel skills

Loss Data Analysis Pattern Search



Accident Location
Accident Time
Attorney Involvement
Claim Cost
Employee Dept.
Employee Position
Injury Type
Lost Work Days
Report Date
Shift
Tool/Equipment Involved
Work Tasks

Accident Date & Day
Accident Type
Body Part
Employee Age & Gender
Employee Name
Full/Part Time
Length of Employment
Medical Provider
Return to Work Date
Supervisor
Litigated
Location Code

Location Codes

- Not just for multiple locations
- Departments
- Shifts

Is Your Safety Incentive Program Discriminatory?

- Rate-based programs
- Behavior-based programs

Conclusions

- Profits keep you in business
- Management must be involved safety

Conclusions

- Recognize Normalization of Deviance
 - Natural Human Tendency to Take a Shortcut (especially in pressure situations)
 - To Accept a Lower Standard of Performance

Conclusions

- **Accident Investigations**
 - Not a fault-finding mission
 - Identify responsible conditions
 - Correct operational inefficiencies
- **Loss Analysis**
 - Get good data
 - Multi level approach
 - Remember:

Countdown to Teamwork DVD

Astronaut/Professional Speaker/Mountaineer/Author

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