

# **BASIC ACCIDENT PREVENTION and OCCUPATIONAL SAFETY AND HEALTH**

***MA. SARAH A. I. CONCEPCION, MD, MOH***



**EMPLOYEES' COMPENSATION COMMISSION**

*4<sup>th</sup> & 5<sup>th</sup> Floor, ECC Building, 355 Sen. Gil J. Puyat Avenue, Makati City*

# OBJECTIVES:

At the end of the session, the participants should be able to:

1. Explain the basic principles and practice of accident and disease prevention in the workplace;
2. Express commitment in preventing the occurrence and recurrence of accidents and diseases within their organization.



# OUTLINE:

I. Global and local updates

II. Brief overview on

- Industrial hygiene
- Safety basics
- Accident costs and consequences
- Safety principles in workplaces



# Global Situationer

Do you know that due to work connected ailments or injuries there is an average of **6,000** people who die everyday equivalent to one every 15 seconds.



Source: ILO Data

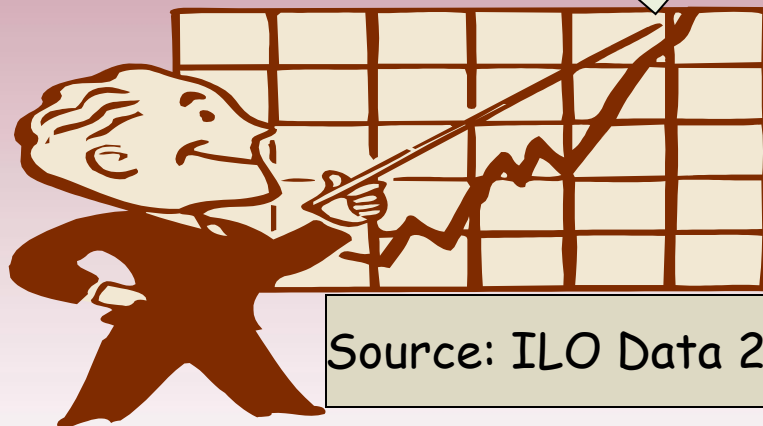


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**2.3 million deaths  
per year including  
651,000 deaths from  
Hazardous substances  
and 160 million work-  
connected diseases  
each year.**

**more  
deadly  
than  
wars.**



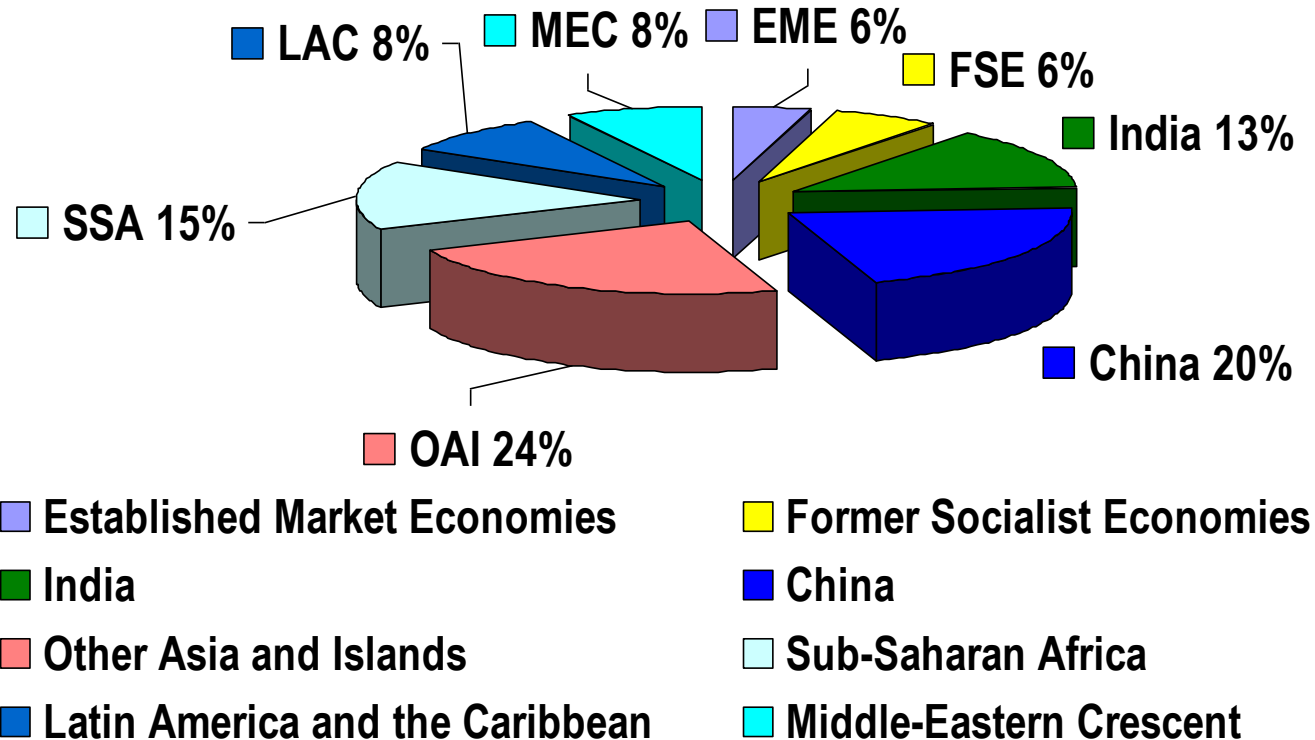
Source: ILO Data 2005



# Global Situationer

Global Estimates  
(2005)

**Fatal occupational injuries- total: 355,000**



Source: *The ILO Programme on Safety and Health at Work and the Environment SafeWork*



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# Local Situationer



## EMPLOYEES' COMPENSATION COMMISSION DATA

**347,310** work-connected sickness, injury, death claims (2000-2010) or an average of **141,099** cases per year, **386** per day



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# Local Situationer

**BUREAU OF LOCAL EMPLOYMENT AND STATISTICS DATA (BLES)**

**39,587** work-connected injuries  
and deaths in 2009:  
**17,713** with workdays lost  
**113** are fatal cases



*Based on 5,126 samples of non-agricultural establishments with 20 or more workers.*

<http://bles.dole.gov.ph/SURVEY%20RESULTS/2010%20Survey%20Result/2009-2010%20BITS%20mainpage.html>



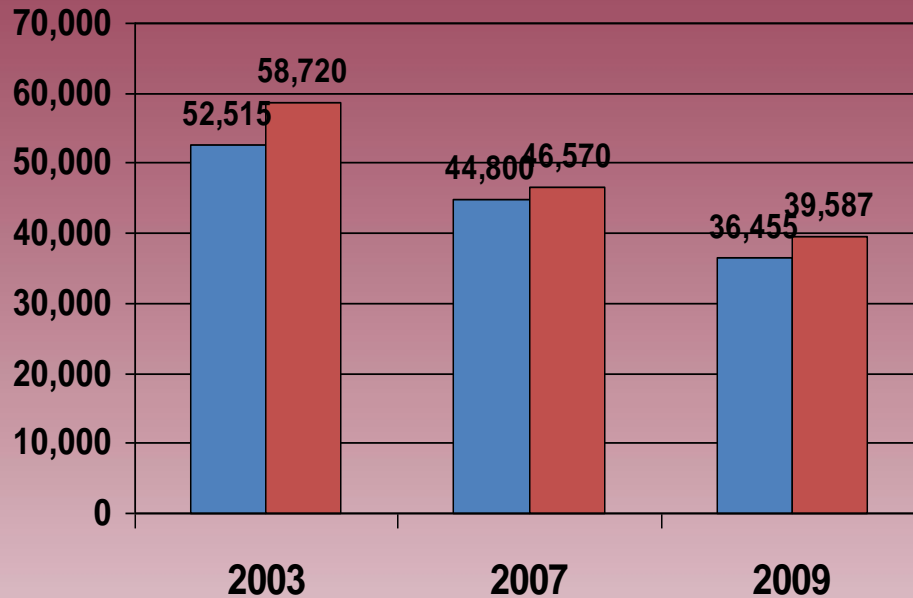
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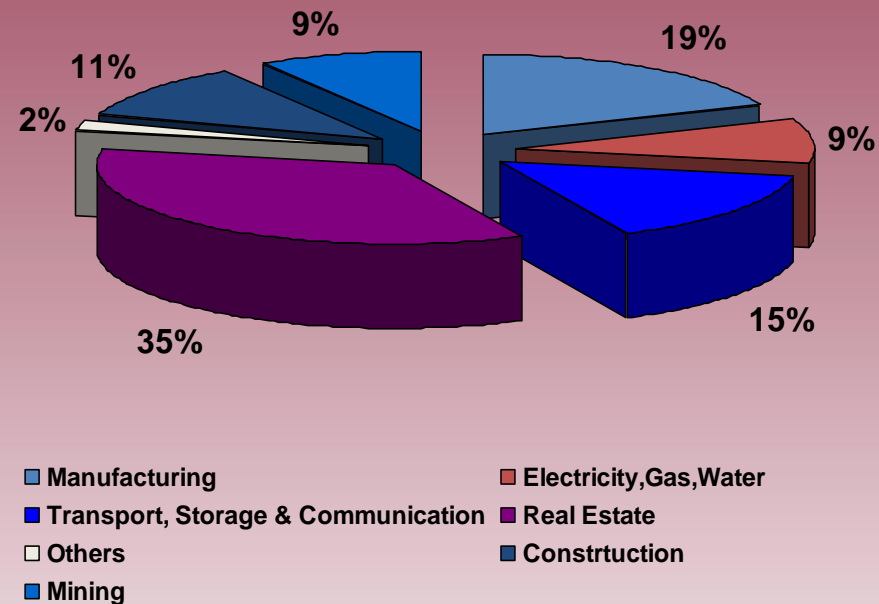


# Local Situationer

## Occupational Accidents and Injuries 2003 - 2009, BLES



### 113 FATAL CASES, 2009



■ Accidents ■ Injuries

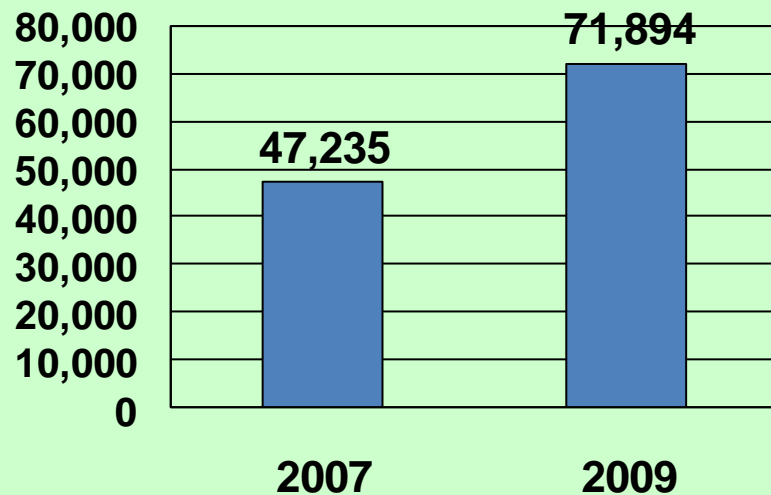
■ Manufacturing  
 ■ Transport, Storage & Communication  
 ■ Others  
 ■ Mining  
 ■ Electricity, Gas, Water  
 ■ Real Estate  
 ■ Construction

<http://bles.dole.gov.ph/SURVEY%20RESULTS/2010%20Survey%20Result/2009-2010%20BITS%20mainpage.html>



# Local Situationer

## Occupational Diseases 2007 - 2009, BLES



Diseases	2007	2009
1. Work-related MSD	13,296	28,574
2. Occupational Asthma	8,759	4,906
3. Tuberculosis		2,921
4. Other Infections	6,517	3,482
5. Essential Hypertension	6,152	9,101
6. Occupational Dermatitis	5,965	5,644
7. Peptic Ulcer	4,135	5,871
8. Cardiovascular Diseases	854	767
9. Heat stroke, Cramps, Exhaustion, Chilblain, Freezing	577	670
10. Cataract	284	140
11. Acute poisonings	189	192
12. Deafness	172	320
13. Others	334	9,306
<b>TOTAL</b>	<b>47,235</b>	<b>71,894</b>

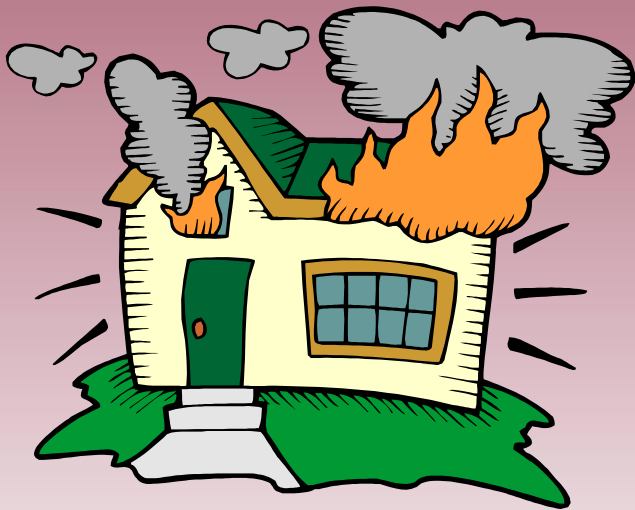
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# Industrial Hygiene



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***INDUSTRIAL HYGIENE*** is the science concerned with the **anticipation, recognition, evaluation and control** of workplace environmental **factors or hazards** that may affect the health, and safety of the worker.



# Workplace Hazards

- Chemical Hazards
- Physical Hazards
- Biological Hazards
- Ergonomic Hazards



# Workplace Hazards

- **Chemical Hazards**

- Gases
- Vapors
- Liquids
- Aerosols (dusts, fibers, fumes, mists, fogs)



- Noxious or toxic
- Corrosive
- Allergens
- Irritants
- Asphyxiants
- Carcinogens
- Mutagenics
- Reproductive Toxicants
- Systemic Poisons





# Workplace Hazards

- **Physical hazards**

- Noise
- Hot or Cold temperature
- Poor illumination
- Radiation
- Vibration



## *Examples of Typical Noise Levels*

Noise Source	dB
<i>Pneumatic chipper at 1 meter</i>	<b>115</b>
<i>Textile room</i>	<b>103</b>
<i>Newspaper press</i>	<b>95</b>
<i>Power lawn mower at 1 meter</i>	<b>92</b>
<i>Diesel truck 50 km/hr at 20 m</i>	<b>85</b>
<i>Passenger car 60 km/hr at 20 m</i>	<b>65</b>
<i>Conversation at 1 m</i>	<b>55</b>
<i>Quiet room</i>	<b>40</b>

# Workplace Hazards

- **Biological Hazards**

**A. Infectious Agents**  
- workers in hospitals  
and laboratories



**B. Non-infectious Agents**  
- viable organisms  
- biogenic toxins  
bacteria, molds and  
toxins that affect  
workers in cotton mill,  
sewage and sludge  
treatment , in silos  
- biogenic allergens  
workers in agriculture





# Workplace Hazards

- **Ergonomic Hazards**

## A. Physical Ergonomics

- working postures, materials handling, repetitive movements, workplace layout
- work related musculoskeletal disorders (WMSD)



## B. Cognitive Ergonomics

- mental workload, decision-making, skilled performance, human-computer interaction



## C. Organizational Ergonomics

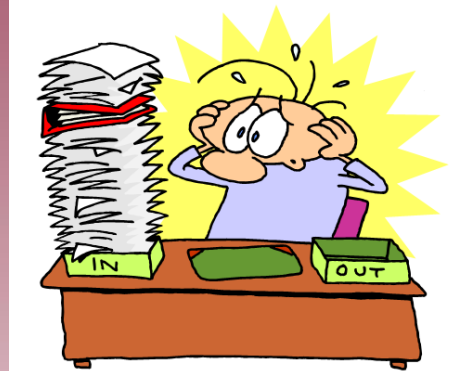
- working time, communication, staff resource management, work design, teamwork, participatory design, community ergonomics, cooperative work, new work paradigms, virtual organizations, and quality management



# Workplace Hazards

- **Psychosocial hazards**

- Work demands
- Inter-personal relationship and leadership
- Work-family conflict
- Job satisfaction
- Job insecurity
- Influence and development
- Role ambiguity

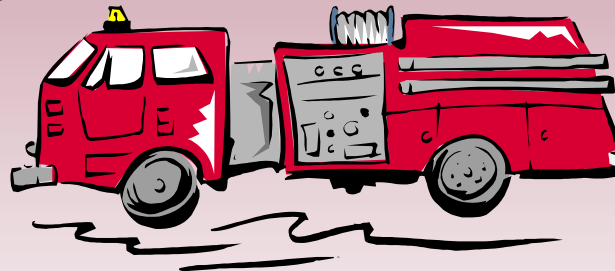


# Control measures

- Engineering Control
- Administrative Control
- Personal Protective Equipment



# SAFETY BASICS



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# What Do We Believe or Perceive ?

- Accidents and road deaths are unavoidable
- We very rarely make mistakes
- We exceed company expectations
- We never break the law



# What is really happening?

- Accidents can be avoided
- We make many mistakes
- Our work performance can be better
- We don't follow the road laws - we break the law



# What do we have to do?

- We must accept that we need to change
- We have to change how and why we do change
- **Mindset change is:**
  - accepting there are better ways of doing things
  - accepting that individuals can make a difference
  - accepting that an individual is important
  - accepting that individuals can make a contribution



*“Safety is not just signs and handrails, it is in people’s minds.”*

*Tony Smith  
National Safety Council  
2006, Turin, Italy*





# ***Vehicular Accidents***



## **US accident statistics:**

- 45% of all accidental deaths are workers
- 4.5% occur in the workplace
- 2.5% occur in non-vehicle work accidents

***US: 97.5% are vehicle work accidents***

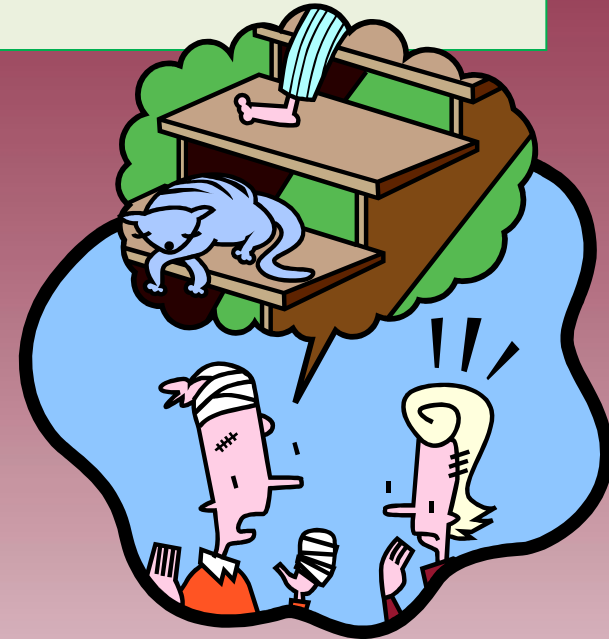


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# Accident

- Is an occurrence or event
  - UNEXPECTED
  - UNFORESEEN
  - UNPLANNED
  - UNWANTED
- that
  - interrupts or disrupts the normal and orderly progress of any activity
  - Physical harm
  - Damage to property
  - Delay in operation



*“If labor standards are costly,  
try an accident”*

*Written comment by an employer*

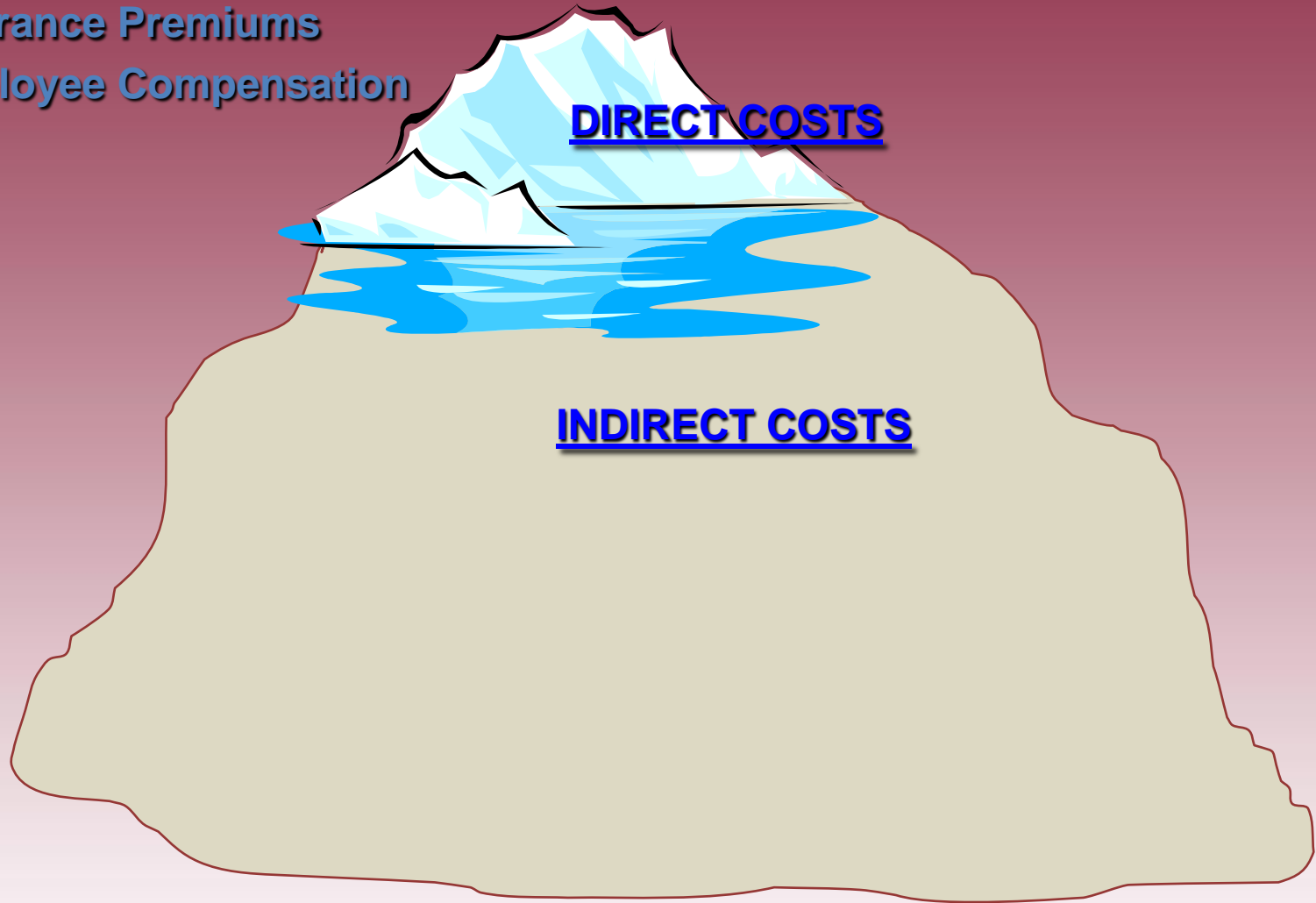


# Accident Costs



# Accident Costs

- Medical Costs
- Insurance Premiums
- Employee Compensation



# Accident Costs

- **Medical Costs**
- **Insurance Premiums**
- **Employee Compensation**

## **DIRECT COSTS**

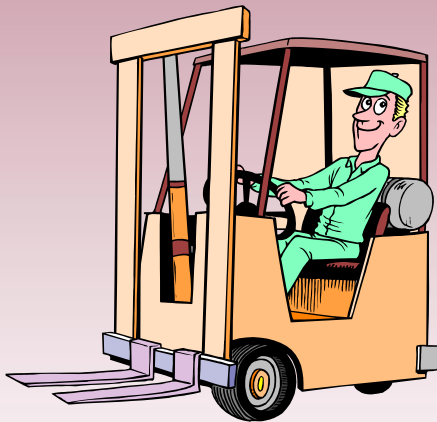
## **INDIRECT COSTS**

- **Inspect/repair/remove/replace damaged or destroyed equipment and materials**
- **Order replacement parts, materials or entire machines**
- **Rent temporary replacement machines/tools**
- **Pay overtime wages**
- **Absorb possible lost sales**
- **Hire and train new employee**
- **Investigate accident**
- **Complete written reports**
- **File workers' compensation or insurance claims**
- **Clean-up area**
- **Repair damaged work areas**

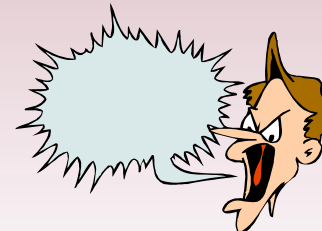




# Accident Consequences



- Near Miss
- Property Damage
- First Aid
- Lost Time
- Fatality

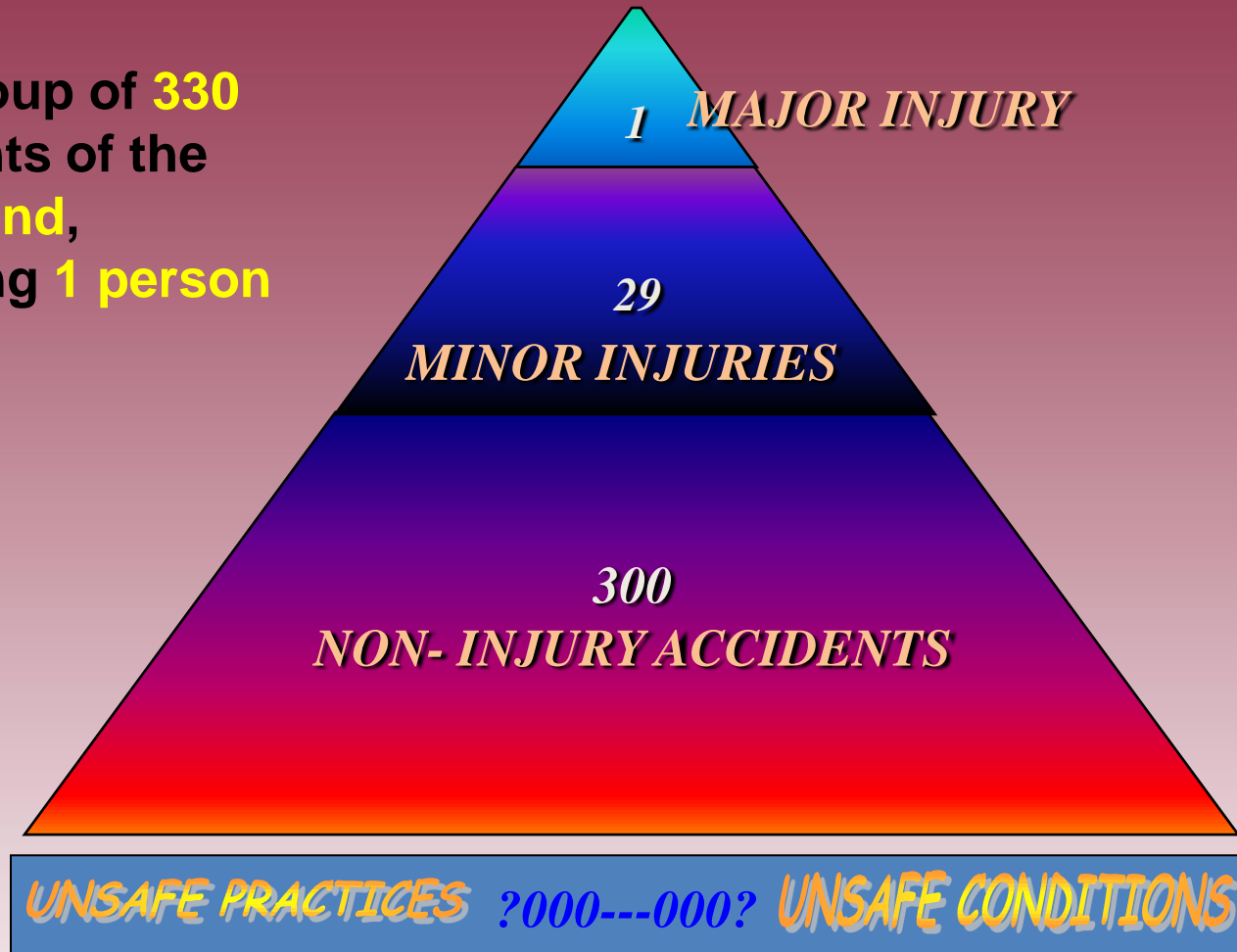


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# Safety Principles

Unit group of **330**  
accidents of the  
**same kind**,  
involving **1 person**



*Foundation of a Major Injury*



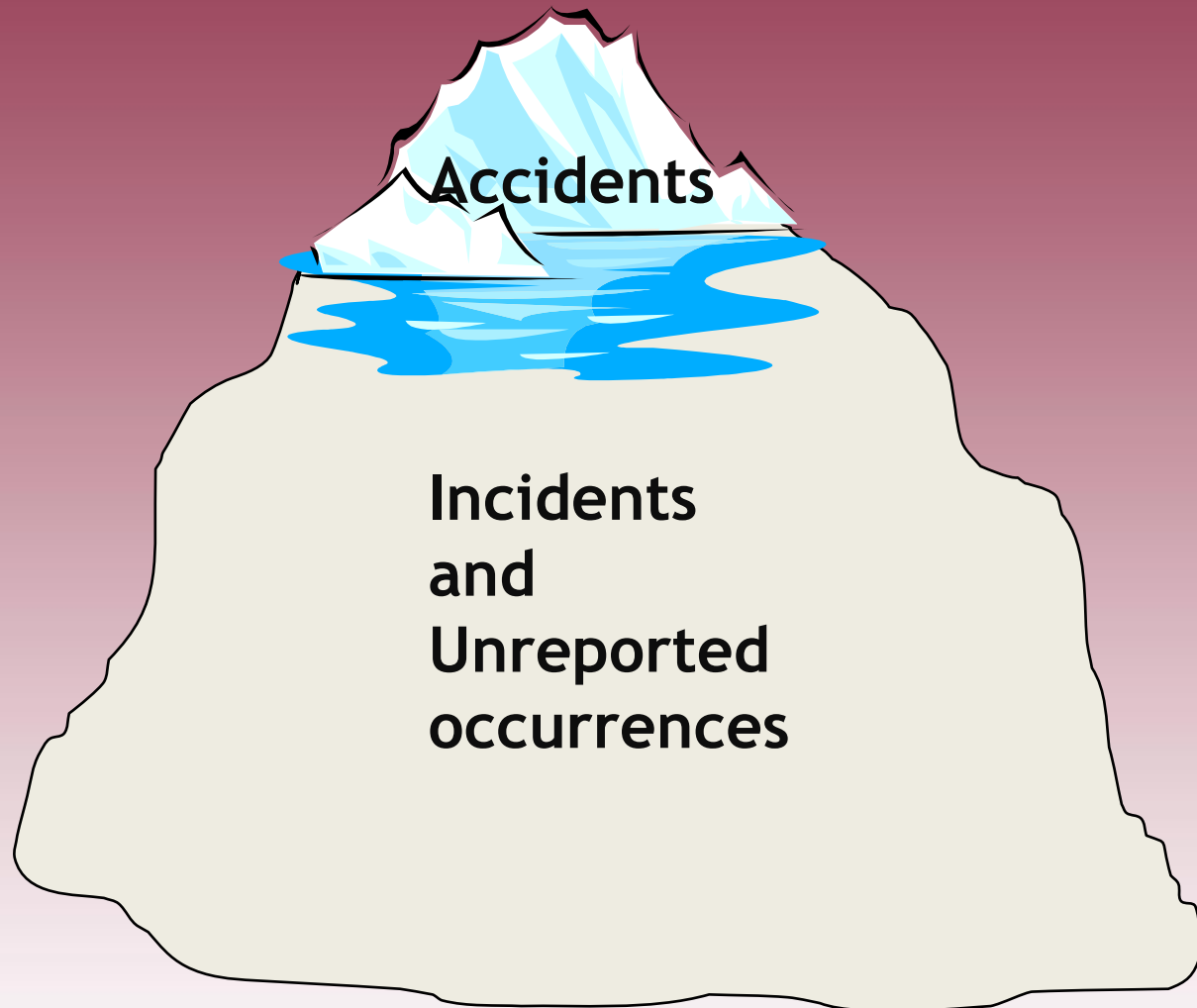
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# Safety Principles

**You only  
see the  
tip of the  
pyramid.**



# Accidents are due to:

1. Unsafe Conditions
2. Unsafe Practices



# Unsafe Conditions

- Inadequate guards or protection
- Defective tools/equipment
- Congestion
- Substandard housekeeping
- Excessive noise
- Inadequate illumination or ventilation

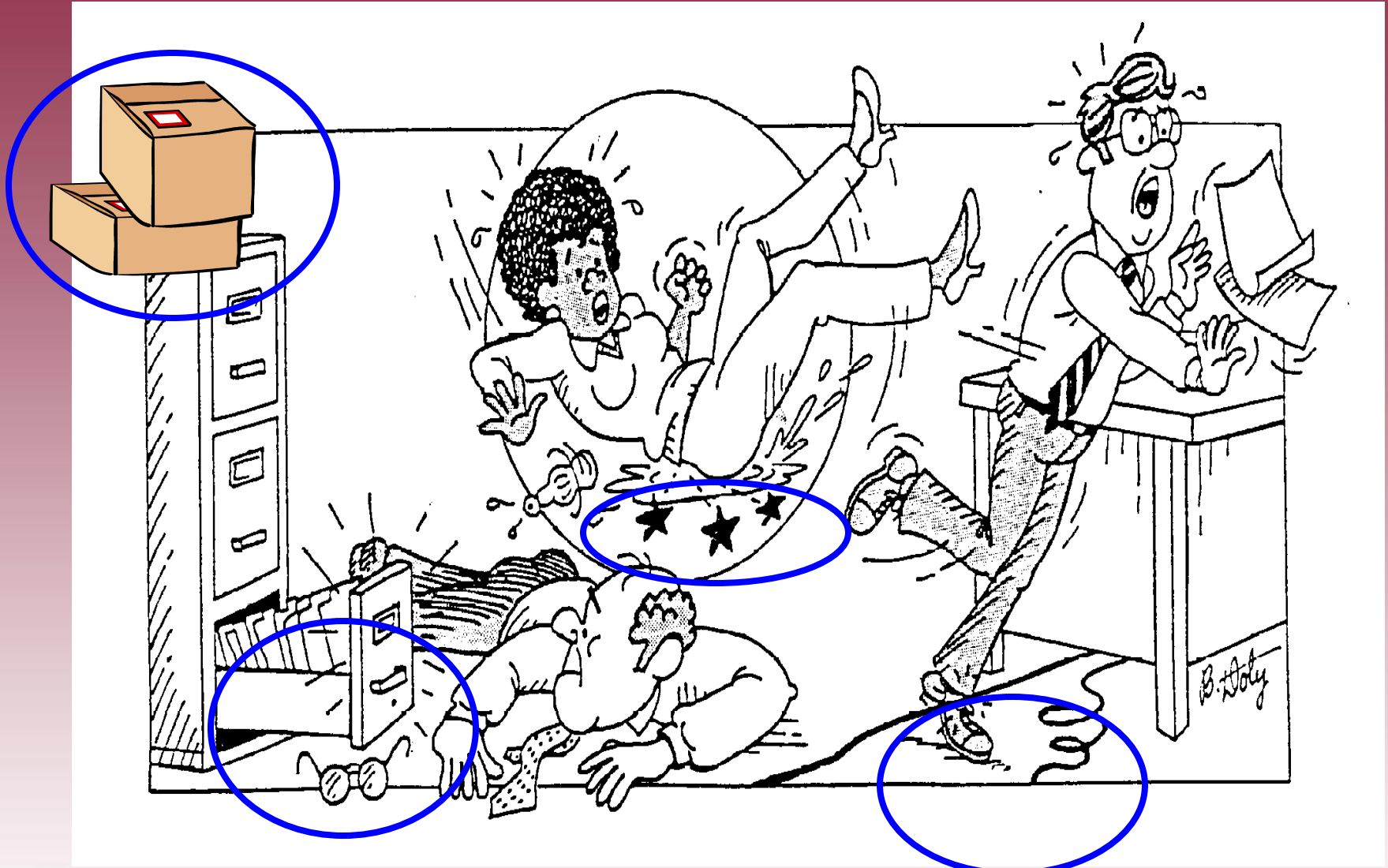


# Unsafe Practices

- Operating without authority or permit
- Failure to warn or secure
- Operating at improper speed
- Making safety devices inoperable
- Using defective equipment
- Using equipment improperly
- Failure to use personal protective equipment
- Improper loading or placement
- Improper lifting
- Taking improper position
- Servicing equipment in motion
- Horseplay
- Drinking or drugs



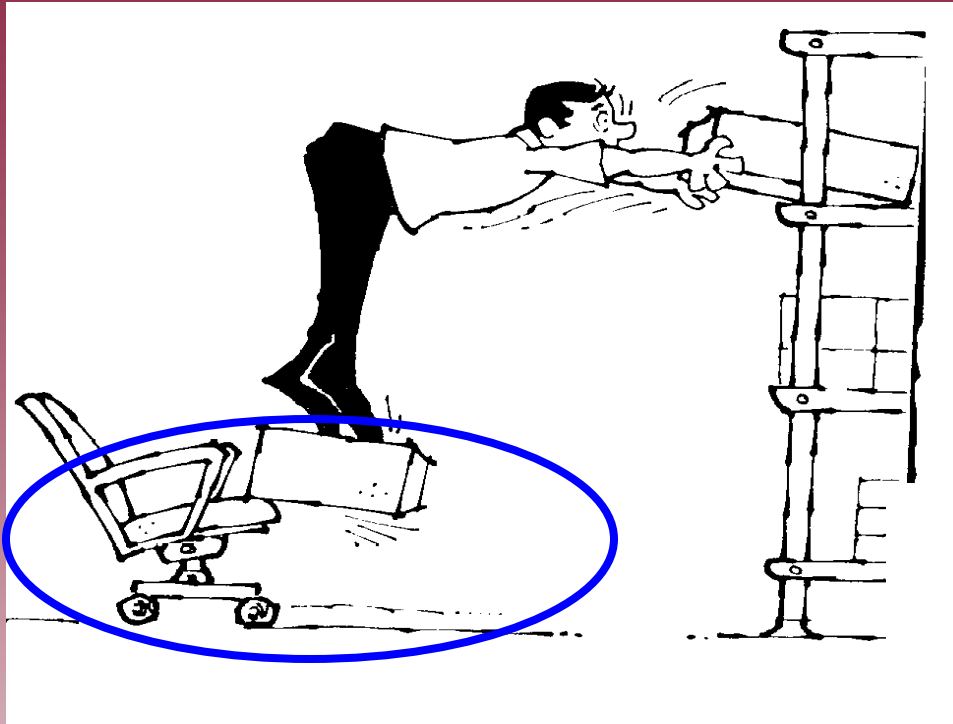
# Office Safety



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# Safe Access And Fall Protection



## Lifting Techniques (Ergonomics)



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# Ergonomics



**Poorly Designed Work Station**

- Awkward reaching creating a possible tipping hazard
- No upper lumbar support on chair could lead to CTD's



**Ergonomically Correct Work Station**



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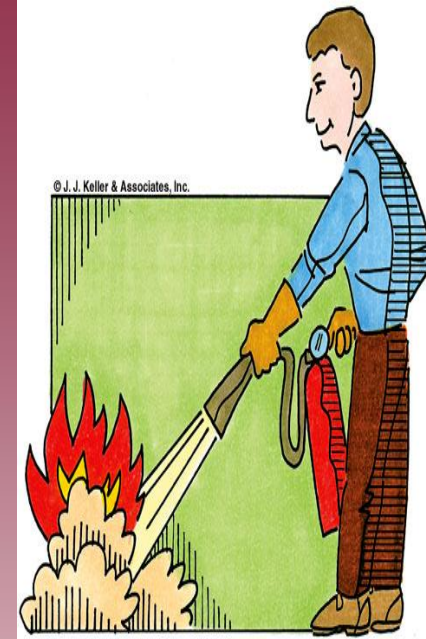


# Safe Access



1. Unsafe lift. Blocked view and not using handrail.
2. Trash on stairs.
3. Foot protection. Employees must wear protective footwear when heavy items may fall on the feet.

# Fire and Electrical Safety



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**More workplace accidents that take place result to  
higher company insurance premium**

**and**

**Higher company premiums means lower profit on  
each product unit sold**

**Accident COSTS MONEY  
Safety SAVES MONEY**



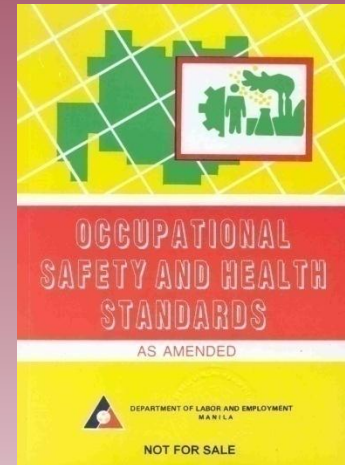
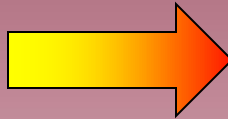
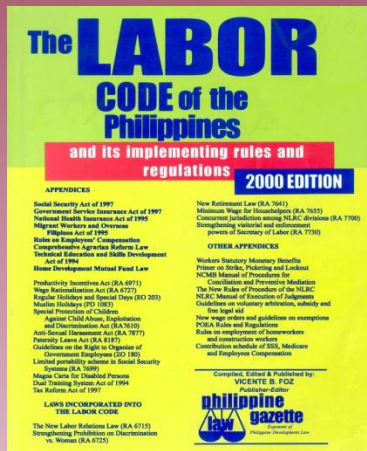
# Philosophy of Accident Prevention

- **Society as a whole has a moral responsibility to prevent needless destruction of life and health, particularly in the workplace**
- **The employer is primarily responsible for ensuring a safe, healthy work environment**
- **Employees are held accountable for following prescribed safety standards and guidelines**



# LEGAL BASIS

- The Philippine Constitution, 1987  
“labor shall be entitled  
to...humane conditions of work...”



## Philippine Labor Code, 1974

Book IV is devoted to prevention and compensation of work-related injuries and illnesses

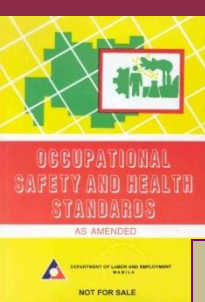
## OCCUPATIONAL SAFETY AND HEALTH STANDARDS

A set of specific rules on OSH

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# Rules of the OCCUPATIONAL SAFETY AND HEALTH STANDARDS

**1000 General Provisions**  
**1010 Other Safety Rules**  
**1020 Registration**  
**1030 Training & Accreditation**  
**1040 Health and Safety Committee**  
**1050 Notification & Keeping of Records of Accidents/Illnesses**  
**1060 Premises of Establishments**  
**1070 Environmental Control**  
**1080 Personal Protective Equipment**  
**1090 Hazardous Materials**  
**1100 Gas & Electric Welding & Cutting Operations**  
**1120 Hazardous Work Processes**  
**1140 Explosives**  
**1150 Materials Handling & Storage**

**1160 Boiler**  
**1170 Unfired Pressure Vessels**  
**1180 Internal Combustion Engine**  
**1200 Machine Guarding**  
**1210 Electrical Safety**  
**1220 Elevators & Related Equipment**  
**1230 Identification of Piping System**  
**1240 Power Piping Lines**  
**1410 Construction Safety**  
**1420 Logging**  
**1940 Fire Protection & Control**  
**1950 Pesticides & Fertilizers**  
**1960 OH Services**  
**1970 Fees**  
**1980 Authority of LGUs**  
**1990 Final Provisions**



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**Accidents are caused by either one or a combination of 3 factors:**

- Unsafe conditions**
- Unsafe acts**
- Management failure**



# HEALTH AND SAFETY MANAGEMENT SYSTEM



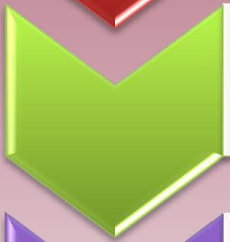
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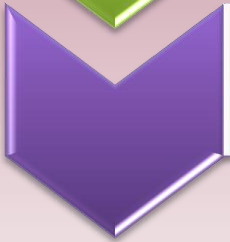
# WHY (MGT.) COMMIT TO SAFETY?



**To fulfill the SOCIAL obligation**



**To fulfill the FISCAL obligation**



**To fulfill the LEGAL obligation**





# TO FULFILL LEGAL OBLIGATION

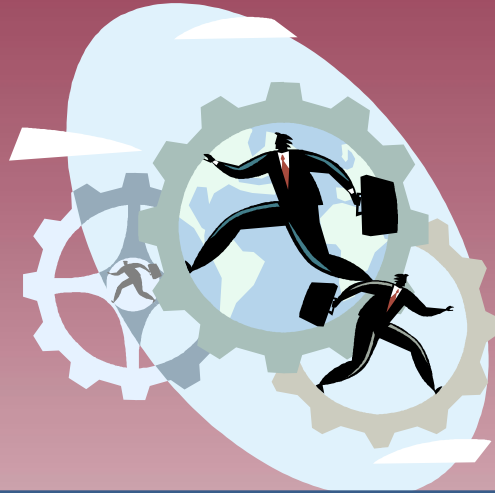


- We must stay out of trouble
- Do only what we have to

**This is the least effective strategy**



# TO FULFILL FISCAL OBLIGATION



- We must save money
- Do what we have to

**This is a better strategy**



# TO FULFILL SOCIAL OBLIGATION

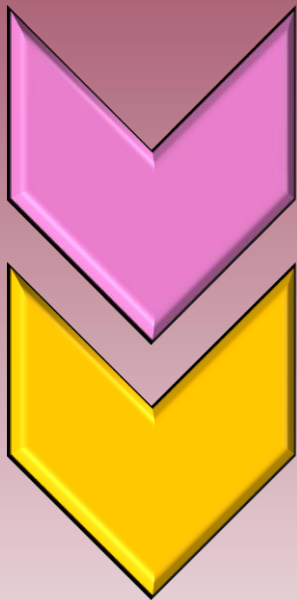


- We MUST save LIVES
- Do whatever it takes

**This is the most effective strategy**



# WHY (MGT.) COMMIT TO SAFETY?



To maintain **GOOD EMPLOYER AND LABOR RELATIONS**

To maintain **GOOD PUBLIC RELATIONS and PUBLICITY**



# TO MAINTAIN GOOD EMPLOYER-LABOR RELATIONS



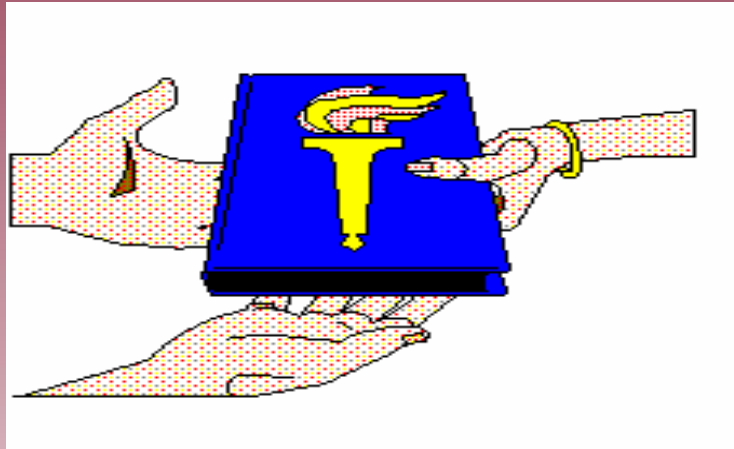
**We must maintain worker  
efficiency and productivity**



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# TO MAINTAIN GOOD PUBLIC RELATIONS AND PUBLICITY



**We must keep our good  
reputation and company brand**



## THE LESSON...

**We need to know **WHO**  
and **WHERE** we are to be  
more effective at  
**WHAT** we do.**





*“If things are done right the first time and every time, we have a safe operation but also an efficient, productive, cost-effective operation.”*

*W. Edward Deming  
author of Total Quality Management*



## In Summary:

- Millions of work-connected illness, injuries and deaths worldwide each year
- Common health hazards are chemical, physical, biologic and ergonomic
- Hazards are controlled thru engineering, administrative and use of PPE
- Accidents can be avoided, mindset change is needed
- Direct and indirect costs of accidents
- Accidents are due to unsafe conditions and unsafe practices
- Management commit to safety in order to fulfil its legal, fiscal and social obligation



A scenic landscape at sunset. The sky is filled with vibrant orange and yellow clouds, with the sun low on the horizon. In the background, a range of jagged mountains is silhouetted against the bright sky. A river winds through a lush green forest in the middle ground, reflecting the warm light. The foreground is filled with dark, dense evergreen trees.

**Maraming Salamat!**

Have a safe day!