

WORKPLACE HAZARDS

Which Of These Pictures Best Describe Your Work Area?



etc...

SAFETY AND COMMON SENSE



Safety is common sense or calculated risk

etc...

SAFETY AND COMMON SENSE



SAFETY IS COMMON SENSE OR CALCULATED RISK

etc...

RISK REDUCTION USING THE HIERARCHY OF CONTROLS

☐ **Reduce severity:**

- Replace hazardous chemicals by less hazardous substances
- Use PPE - gloves, safety glasses, safety shoes, hard hats, hearing protection, etc.
- Reduce numbers of people at risk

☐ **Reduce probability of injury/illness:**

- Reduce likelihood of contact
- Reduce frequency of exposure
- Reduce hazard level



etc...

The Need to Manage Risk

- The key to preventing and controlling safety and health losses is by identifying, analyzing, reducing, and managing workplace related risk.



etc...

ALTERNATIVE RISK ASSESSMENT METHODOLOGY –

Quantitative Approach

Where complex systems or high hazard processes exist it may be necessary to conduct detailed risk assessments using more sophisticated tools – which normally examine the risks associated with individual components of the process



- Examples of Quantitative Risk Assessment Systems:
- Hazard and Operability Studies (HAZOP)
- Fault Tree Analysis
- Failure Mode and Effect Analysis (FMEA)

etc...

OPERATIONAL SAFETY MANAGEMENT

- Preventing serious injuries and fatalities
- Engaging employees
- Ergonomics
- Working with contractors
- Investigating Incidents

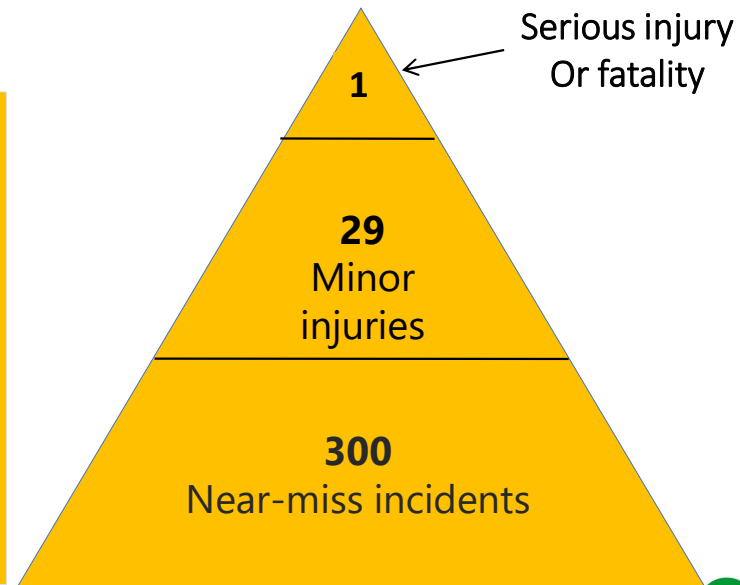


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PREVENTING SERIOUS INJURIES AND FATALITIES

- The resulting **Heinrich's Triangle** implies that reducing incidents on bottom of triangle will result in a proportional amount of reduction in serious injuries at the top

In 1931 using insurance industry data H.W. Heinrich developed a model showing the relationship associated with the severity of accidents.

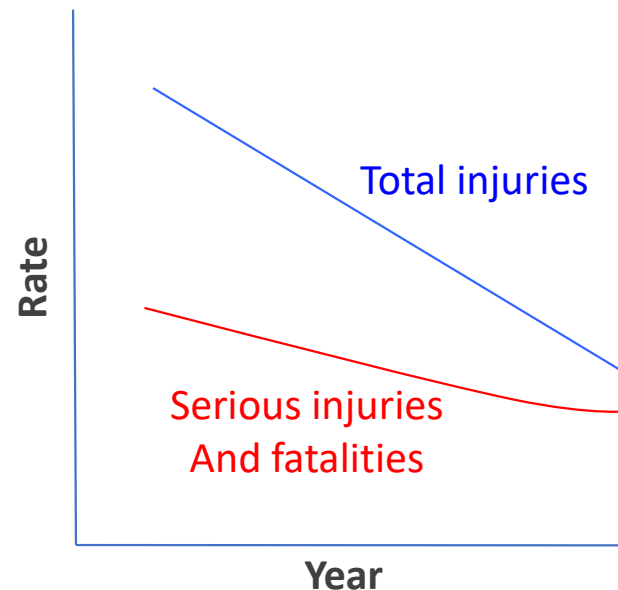


ETC...

SERIOUS INJURY AND FATALITY DATA

- Across industry sectors total injury rates are decreasing at a faster rate than lost time injury and fatality rates
- If Heinrich Triangle is correct then all injuries should be declining at the same rate

However recent injury data clearly shows that the reduction of all injuries (frequency) does not necessarily produce equivalent reduction in the number of fatal and serious injuries (severity)



ETC...



CORE SAFETY COMPETENCIES FOR WORKERS

- ☐ How workplace risks can affect them and their families
- ☐ That work related injuries are predictable and preventable
- ☐ How hazards at work are identified
- ☐ Recognize how to prevent injuries and illnesses
- ☐ How to identify and address work emergencies
- ☐ Understand worker rights and responsibilities for safety
- ☐ Know how to access work-related safety resources
- ☐ Understand how to communicate with others about job related safety and how to report problems when they feel threatened by conditions at work.

etc...





Behaviour Based Safety (BBS)

BBS is an approach that seeks to reduce unsafe behaviours through a program of behavioural modification and reinforcement. The fundamental BBS steps include:

- ☐ Identify behaviours that impact safety
- ☐ Precisely define behaviours in order to measure them reliably
- ☐ Develop a process to measure those behaviours in order to establish a baseline and set goals
- ☐ Provide employee feedback on performance
- ☐ Reinforce proper behaviour and opportunities to improve
- ☐ Improve processes that are identified as flawed.



etc...





BEHAVIOUR BASED SAFETY CRITIQUE

- ☐ In workplaces hazard controls should attempt to minimize reliance on human behaviour for safe operations
- ☐ When high level controls not possible, administrative controls such as worker selection, training, and behaviour modification are necessary
- ☐ BBS has been shown to be effective as part of a total safety program and has the support of both management and workers
- ☐ BBS is not a substitute for poorly designed work processes, equipment and procedures
- ☐ BBS is not effective when it is perceived that management is transferring their responsibility for safety to employees



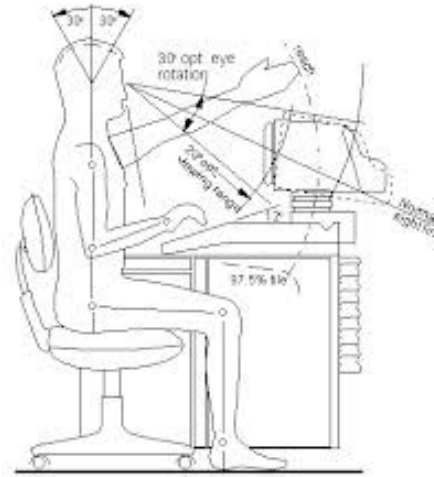
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QUESTIONS AND ANSWERS



etc...

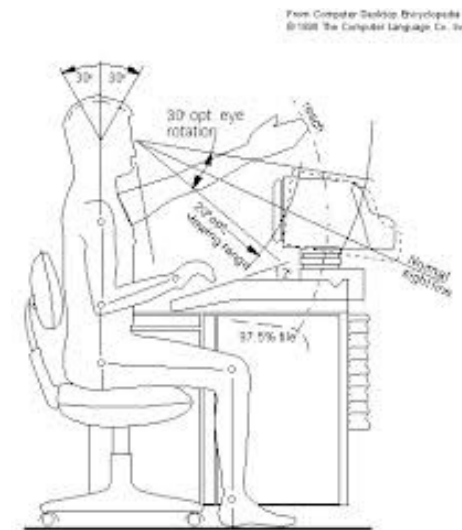
ERGONOMICS



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Ergonomics – The Study of Work

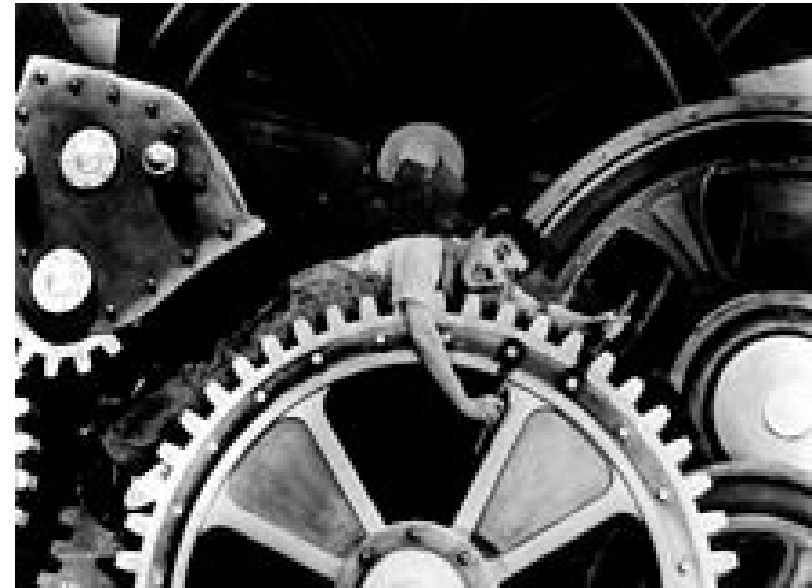
- Benefits from ergonomic improvements:
- Safety and Health
- Productivity and Efficiency
- Reliability and Quality
- Job Satisfaction



etc...

Ergonomic Injury Risk Factors

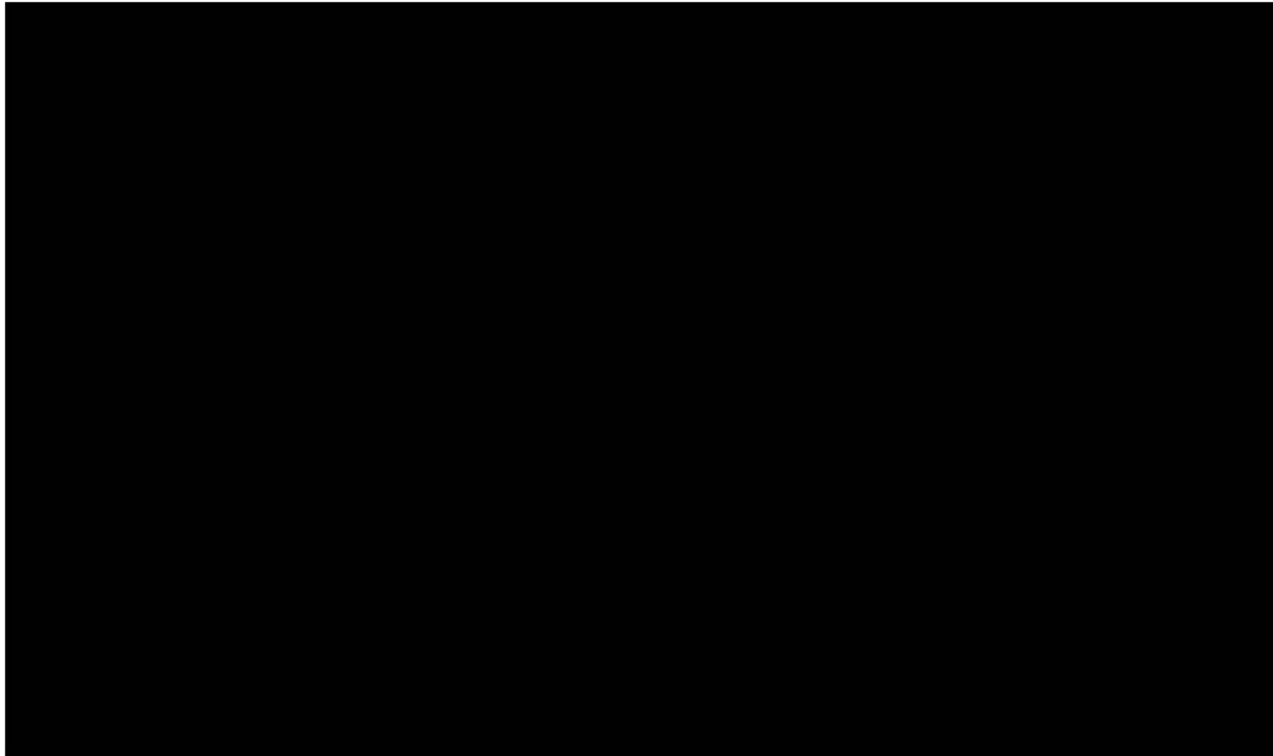
- ☐ Exerting excessive force
- ☐ Repetition
- ☐ Quick motions
- ☐ Awkward and static postures
- ☐ Overhead work
- ☐ Twisting and carrying loads
- ☐ Wrist deviations
- ☐ Contact stress from sharp edges
- ☐ Poor shoulder or wrist position
- ☐ Lifting bulky loads
- ☐ Hand arm whole body vibration
- ☐ Excessive hours at work tasks/Inadequate recovery time



etc...



Ergonomic Injury Risk Factors



etc...



Ergonomic Injury Risk Factors

- ☐ Workplace design
- ☐ Anthropometric design
- ☐ Cognitive design
- ☐ Performance requirements
- ☐ Work practices
- ☐ Rest periods
- ☐ Job Rotation
- ☐ Training
- ☐ The Work Station
- ☐ Adjustable work tools
- ☐ Changes in design



etc...

Managing Ergonomics

Managing ergonomics to improve, productivity, product quality and worker safety and well being

- ☐ Ergonomic teams
 - Interdisciplinary
- ☐ Workplace inspections
 - Worker input and feedback
- ☐ Time and motion studies
 - Videography
- ☐ Resolving problems
 - Worker complaints
- ☐ Kaizen and other methods



etc...

QUESTIONS AND ANSWERS



etc...

SAFETY SIGNS

CAUTION

**FLAMMABLE
LIQUIDS**

DANGER

**CYLINDERS MUST
BE SECURED**



INTRODUCTION

Safety signs are a type of safety equipment which provide you with important safety information. Just like any safety equipment, safety signs are only effective if you use the information that is provided.

Today we will look at:

- ☐ The types of safety signs;
- ☐ The meaning of the symbols, shapes and colours used for safety signs; and
- ☐ How to use safety signs properly.



eTC...



TYPES OF SAFETY SIGNS

The two main types of safety signs are:

- ☐ Symbolic safety signs; and
- ☐ Text safety signs.

A symbolic safety sign consists of three parts:

- ☐ Shape;
- ☐ Colour; And
- ☐ Symbol.

The shape, colour and symbol that is used on a sign is based upon the type of information that is being conveyed.





TYPES OF SAFETY SIGNS

A circle means a regulation is in force and whatever is displayed on the sign must be obeyed at all times. These are called Regulation signs.

Triangle means a hazard exists. These are called **Caution signs**.

Square Or Rectangle means that emergency related information is being given to you. These are called Emergency Information signs.

Regulation Signs

The three types of Regulation Safety Signs used are:

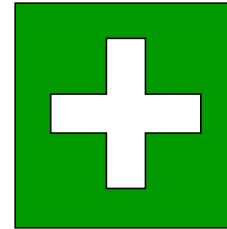
- ☐ Mandatory signs;
- ☐ Prohibition signs; and
- ☐ Danger Warning signs.



TYPES OF SAFETY SIGNS



Blue/White=Must Do



Green/White=Safety Information



Red/White=Must NOT Do



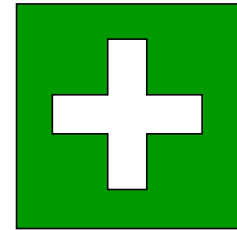
Yellow/Black=H&S Hazard Warning

etc...

EMERGENCY INFORMATION SIGNS

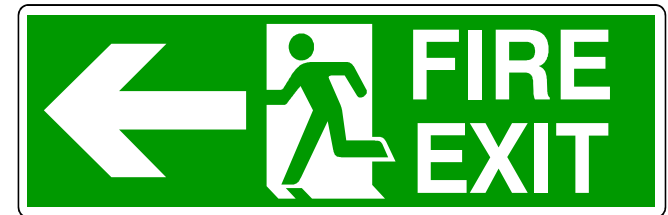
Emergency Equipment signs are used to show the location of:

- Emergency Equipment,
- First Aid Facilities, And
- Emergency Exits.



The colour code for emergency equipment signs is:

- Green background; and
- White symbol.



etc...

PROHIBITION SAFETY SIGNS



Any Red and White sign with a line through means:

“ Not Allowed or Must Not”



NO SMOKING

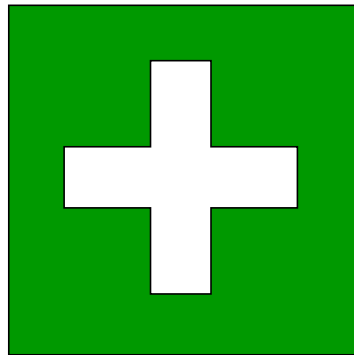
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INFORMATION SAFETY SIGNS

Green + White = SAFETY Information



**Safe Route to
Fire Exit**



First Aid Kit

etc...

INFORMATION SAFETY SIGNS



etc...

INFORMATION SIGNS



etc...

MANDATORY SAFETY SIGNS

Blue + White = Mandatory or Must Do



YOU **MUST WEAR OVERALLS**



YOU **MUST WEAR SAFETY GLOVES**



YOU **MUST WEAR EAR DEFENDERS**

etc...

MANDATORY SAFETY SIGNS

Blue + White = Mandatory or Must Do



YOU **MUST WEAR OVERALLS**



YOU **MUST WEAR SAFETY GLOVES**



YOU **MUST WEAR EAR DEFENDERS**

etc...

MANDATORY SAFETY SIGNS



etc...

MANDATORY SAFETY SIGNS



etc...

DANGER/ WARNING SAFETY SIGNS

Yellow + Black = HAZARD WARNING



FLAMMABLE SUBSTANCE



WARNING - LASER BEAMS

etc...

DANGER/ WARNING SAFETY SIGNS

Yellow + Black = HAZARD WARNING



FLAMMABLE SUBSTANCE



WARNING - LASER BEAMS

etc...

DANGER/ WARNING SAFETY SIGNS



etc...

DANGER/ WARNING SAFETY SIGNS



etc...

DANGER/ WARNING SAFETY SIGNS



etc...

DANGER/ WARNING SAFETY SIGNS



etc...

DANGER/ WARNING SAFETY SIGNS



etc...

DANGER/ WARNING SAFETY SIGNS



etc...

DANGER/ WARNING SAFETY SIGNS



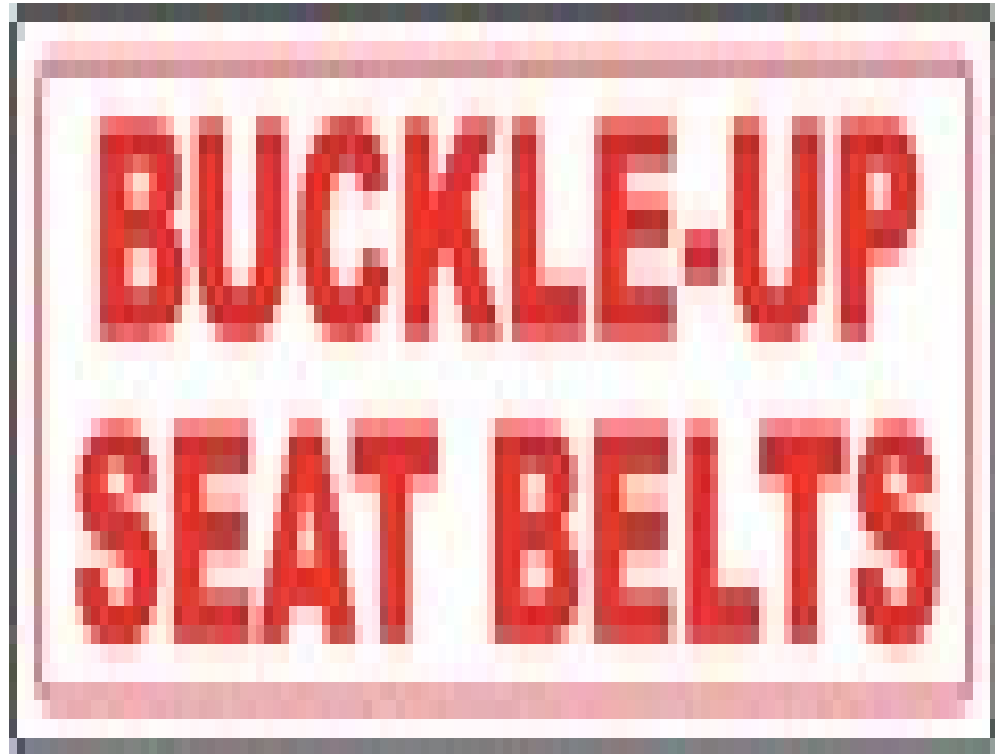
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SAFETY SIGNS



etc...

SAFETY SIGNS



etc...



USE OF SAFETY SIGNS

Safety signs are widely used to provide you with information to protect your Health and safety.

Safety signs must be obeyed in the same way as safety rules and regulations.

Because safety signs are such an important type of safety equipment you should **NEVER**:

- ☐ Remove any safety sign unless you have permission from management;
- ☐ Deface or alter a sign; and
- ☐ Obstruct the visibility of a sign by stacking materials or equipment in front



etc...





SAFETY SIGNS - Summary

Safety signs are provided to help protect your health and safety.

- ☐ Mandatory, Prohibition and Danger Warning signs are regulation signs which means the instructions given on them must be obeyed.
- ☐ Caution signs are designed to make you aware of the presence of certain hazards. Recognise the hazard displayed on the sign and take the appropriate safety measures.
- ☐ Emergency Equipment signs are designed to show you the location of emergency, first aid and firefighting equipment.
- ☐ Maintain the condition of the safety signs in your area so they are clearly visible.



etc...

QUESTIONS AND ANSWERS



etc...



MANAGING HEALTH SAFETY AND ENVIRONMENT AT WORK

DAY TWO

HSE Management System

- Module 3: Preventing and Controlling Work place hazards - Fire Prevention and Electricity Safety
- Module 4: Integration of Safety into the Business
- Module 5: Measuring Performance



etc...

ELECTRICAL SAFETY



etc...