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# PRACTICAL SAFE LIFTING PRACTICE AND MAINTENANCE



## **THIS WORKSHOP COVERS:**

- Advanced Lifting Equipment Safety
- Slings, inspection and safe use of lifting equipment
- Guides to implementing a total safe lifting program in your plant & operation
- Selection, safe use and maintenance of lifting equipment
- Practical Safe slinging and basic rigging practice
- Types, selection and features of lifting equipment used
- Management of a total safe lifting program
- Your lifting equipment - legal or lethal?

## **WHO SHOULD ATTEND:**

- Maintenance and Project Managers
- Plant Engineers and Technicians
- Artisans and Apprentices
- Rigging Personnel and Contractors
- Inspectors of Lifting Equipment
- Safety Officer and Loss Control Personnel
- Health and Safety Representatives
- Plant Foreman and Supervisors
- Lifting Equipment Operators
- Lifting Equipment Service Providers
- Lifting Equipment Sales Engineers

## The Workshop

This very timely workshop has been put together by an expert in the area of lifting practice and equipment who has observed and studied the problems in working with loads. In two concentrated days you will have the distillation of his experience of over 30 years in this sometimes dangerous and demanding field. Lifting Equipment refers to both the lifting tackle as well as Lifting Machines.

This is a practical participative workshop using sample slings and components; new and old to practically demonstrate features and correct use. Videos and posters in the workshop room are used to reinforce the material covered in the comprehensive 250 page manual which will act as a reference for your work for years to come. Case studies throughout the workshop which emphasise past experience give you a solid practical bias to the workshop. You will also do simple calculations on various lifting and loading situations. It should be emphasised that all loads are dangerous - a 50 kg load will kill or m a i m a s surely as a 5 tonne load if dropped from a 1 metre distance. Safety is not negotiable; therefore this workshop drives home the point that if you use correct lifting equipment correctly and safely, your operators and personnel are well trained and in compliance with the local legislation as well as with a Total Safe Lifting program you will have a productive work force.

This course is not a replacement for that of a full rigger's course but it will teach you in two days what most people will take years to learn and make you a far safer and more productive person on the shopfloor.

### Pre-requisites

A basic working knowledge of mechanical lifting problems. Please bring your calculator along to do simple calculations for some of the practical exercises.

## Workshop Objectives

At the end of this workshop you will be able to:

- Maintain Safe Lifting Practice in your factory and plant
- Describe the do's and don'ts of Lifting
- Demonstrate substantial cost savings in less damage and risk in lifting equipment
- Demonstrate practical compliance with the local Legal requirements
- Demonstrate compliance with the your responsibilities of the LAW
- List the elements of a Total Safe Lifting Program and how to implement this plan
- Demonstrate the load - estimation, balance, centre of gravity, angles, load ratings, mass of various bodies, safe attachment
- Ensure proper safe maintenance of Lifting Equipment
- Design and create your own Code of Practice for Lifting Equipment
- Ensure that your lifting equipment is always in a safe working condition
- Identify and fix Safety Hazards with Lifting Equipment
- Understand the limitations of your Lifting Equipment

## The Program

### INTRODUCTION

- Safe Lifting Statement
- Why training is essential
- Lifting pyramid triangle

### FUNDAMENTAL PRINCIPLES OF SAFE LIFTING PRACTICE

- Common causes of accidents
- Employers responsibilities
- Operators responsibilities
- Suppliers responsibilities
- Suppliers Risk Assessment of product
- The Lift - General Procedure
- A 20 point guide in planning and conducting the lift
- Elements of a Total Safe Lifting Program (TSLP)
- Lifting Equipment Definitions. Pm 20

#### Case Study

### BASIC RIGGING PRACTICE

- Fundamentals

### LEGAL REQUIREMENTS

- Applicable Legislation
- Industry: OHS Act, DMR 18
- Mines: Minerals Act
- Practical implementation of these regulations
- All regulations in the Acts, and how these regulations need to be implemented in practice

#### Case Study

### THE LOAD

- Load estimation
- Centre of gravity
- Balance
- Angles
- Load ratings. Trigonometric and Uniform methods.

#### Calculation Exercise

### CRANE SIGNALS

### LIFTING TACKLE (I.E CHAIN, STEEL WIRE ROPE AND TEXTILE WEBBING)

- Comparisons of types
- Features and benefits of types
- Typical applications
- Sling configurations

#### Calculation Exercise

### LIFTING MACHINES

- Types
- Methods of operation i.e. gear train
- Overload indicators
- Limit switches
- Assessing the operation and safe use of Lifting Machines

#### Case Study

### THEORY OF INSPECTION OF LIFTING EQUIPMENT

### MAINTENANCE AND STORAGE

### CHAIN SLINGS

- Qualities of chain
- Types of chain
- Specifications
- Traceability
- Heat treatment
- Protective coatings
- Configurations of slings
- Certification
- Markings
- Inspection
- Safe and correct use
- Storage and maintenance

#### Calculation Exercise

### STEEL WIRE ROPE SLINGS

- Rope construction
- Types of ropes
- Splices
- Types of slings
- Accessories
- Correct and safe use
- Inspection of ropes
- Storage and maintenance

#### Case Study

### TEXTILE SLINGS

- Types of textile fabric used
- Types of slings i.e. endless roundslings and flat woven webbing slings
- Identification and marking
- Typical Applications
- Specifications, identification and markings
- Stitching
- Colour coding
- Safe and correct use
- Inspection and maintenance

#### Case Study

### SLING COMPONENTS

- Hooks
- Shackles
- Terminal fittings
- Eye bolts
- Plate clamps
- Lifting points
- Correct and safe use, identification, markings and quality

#### Case Study

### LIFTING MACHINES

- Types and use i.e. hand and electric chain hoists, lever hoists, cable winches, pendant controlled overhead cranes
- Correct and safe use
- Inspection procedures for various types
- Records and maintenance

#### Case Study

### SUMMARY AND CONCLUSION