

## SCOPE AND APPLICABILITY:

The aim and objectives of the of Banksman and Slinger initial training are to establish that the learner has the required underpinning knowledge, understanding and practical skills to fulfill the role of Banksman and Slinger safely and effectively. The target group for Banksman and Slinger Initial Training Standard is personnel wishing to become competent in the Banksman & Slinger role in the energy industry.

## REGULATIONS & STANDARDS

- British Standard Institute - BS 7121-1:2016 - Code of practice for safe use of cranes - BSI;
- British Standard Institute - BS 7121-2-7:2012+A2:2022 - Code of practice for the safe use of cranes - BSI;
- Banksman and Slinger Initial Training – Code 9067;
- ISO 12480-1;
- International Marine Contractors Association - IMCA SEL 019, IMCA M 187;
- American Petroleum Institute Recommended Practice 2D 7th Edition - API;
- NR 37 - Safety and health on oil platforms;
- Offshore Mechanical Handling Equipment Committee - OMHEC;
- Health and Safety at Work etc. Act 1974 - HASAWA 1974;
- Health and Safety Executive – HSE;
- International Association of Oil and Gas Producers - OGP;
- Canadian Centre for Occupational Health and Safety - CCOHS;
- Lifting Operations and Lifting Equipment Regulations 1998 - LOLER 1998;
- Provision and Use of Work Equipment Regulations 1998 - PUWER 1998.

## COURSE CONTENT:

1. Relevant Legislation and Regulations
  - 1.1. Relevant regional legislation and regulations related to lifting and rigging operations, to include:
    - 1.1.1. Employer and employee duties under Health and Safety Regulations;
    - 1.1.2. Regulations for the planning of lifting operations and for the thorough examination and inspection of lifting equipment;
    - 1.1.3. Regulations for the maintenance of lifting equipment so that it is in a safe condition and that information, instruction and training is given for its safe use;
    - 1.1.4. Regulations which require a risk assessment to be undertaken for the lifting operation;
    - 1.1.5. Why it is important to plan lifting activities;
    - 1.1.6. Lifting of personnel by crane for work and transfer purposes.
  2. Hazard Identification and Controls
    - 2.1. Control of work systems, to include: permits, procedures and toolbox talks (TBTs);
    - 2.2. Principles for initial risk assessment, task risk assessments and specific risk assessments to be conducted;
    - 2.3. Typical Hazards associated with lifting and rigging operations, to include:
      - 2.3.1. Dropped loads or striking adjacent equipment, structures or machinery from lifting and rigging operations;
      - 2.3.2. Working at heights;
      - 2.3.3. Restricted access working;
      - 2.3.4. Working near live electrical equipment and machinery;
      - 2.3.5. Working near live process equipment and machinery;
      - 2.3.6. Working near or within multiple worksite areas;
      - 2.3.7. Chemical hazards;
      - 2.3.8. Environmental hazards e.g. strong winds, low visibility etc.;
      - 2.3.9. Dynamic forces affecting lifting and rigging operations e.g. FPSO movement;
      - 2.3.10. Hand and finger injuries;
      - 2.3.11. Misuse of equipment used in lifting operations;
      - 2.3.12. Boom load path hazards;
      - 2.3.13. Correct manual handling techniques;
      - 2.3.14. Complacency through repetition of the lifting operation;
      - 2.3.15. How to check that there is adequate access, working space and lighting within the designated work area;
      - 2.3.16. Personal protective equipment (PPE) relevant to crane operations;

- 2.3.17. Different load handling methods including: tag lines, handsfree tools and winch;
- 2.3.18. How to protect lifting accessories and the loads to be lifted;
- 2.3.19. Loss of communications and visibility;
- 2.3.20. Contributing to a TBT to discuss the lifting plan, risk assessment and the allocation of responsibilities.
3. The Role of the Banksman and Slinger:
  - 3.1. Typical roles, responsibilities and reporting structure involved in lifting operations and their main duties including:
    - 3.1.1. Banksman;
    - 3.1.2. Slinger;
    - 3.1.3. Crane operator;
    - 3.1.4. Deck supervisor;
    - 3.1.5. Competent person for planning lifting operations.
  - 3.2. Organization and planning of lifting operations;
  - 3.3. Identifying and controlling hazards;
  - 3.4. Deciding the best methods of communicating signals and information clearly to the relevant personnel to move the load safely (slingers (load handlers), banks man, crane operator(s) and supply boat;
  - 3.5. Understanding of the limitations and best practices when using lifting accessories and equipment;
  - 3.6. Checking the cargo manifest and reviewing the load;
  - 3.7. Using more than one banksman and the transfer of responsibility for the lift
  - 3.8. How to hand over effectively during lifting operations;
  - 3.9. Safe positioning of personnel who could be affected by the lifting operation and installing controls i.e. barriers/PA/tannoy;
  - 3.10. Identifying escape routes should a problem develop during the lifting operation;
  - 3.11. The purpose of pre-post use inspection of lifting equipment, lifting accessories and loads to be lifted;
  - 3.12. Maintaining an overview of the lifting operations area and the crane boom area;
  - 3.13. Ensuring that the load is moved at the minimum height necessary to avoid obstacles and locate the load in its final position;
  - 3.14. Giving Instructions to lower the load at its final location in the correct orientation.
4. Communications and Visibility:
  - 4.1. The purpose of high visibility vests and personnel identification;
  - 4.2. How and when to use different communication methods including:
    - 4.2.1. Hand signals;
    - 4.2.2. Two-way handheld radios.
  - 4.3. Industry best practice protocols for the different communication methods;
  - 4.4. Lines of communication from slinger to banksman and onto crane operator;
  - 4.5. Definitions of:
    - 4.5.1. Line of sight;
    - 4.5.2. Blind lift.
5. The principles of lifting operations by crane:
  - 5.1. Common terminology and what each term means, to include:
    - 5.1.1. SWL;
    - 5.1.2. WLL;
    - 5.1.3. Lifting equipment;
    - 5.1.4. Lifting appliances;
    - 5.1.5. Lifting accessories;
    - 5.1.6. Factors of safety;
    - 5.1.7. Centre of gravity and balance of the load;
    - 5.1.8. Load security.
  - 5.2. Load characteristics which effect complexity: size, uneven weight distribution, a fragile load, difficult to access lifting points and dynamic loading;
  - 5.3. The effects of resultant tension on lifting equipment when used at various angles and configurations;
  - 5.4. How the included angle affects the tension in the sling legs;
  - 5.5. How to assist the crane operator control a swing on a load when lifting blind;
  - 5.6. Difficulties that might occur during the lifting and moving operations;
  - 5.7. The commonly used types of cranes and their applications;
  - 5.8. The basic principles of crane operations;
  - 5.9. The basic principles of crane operations;
6. Introduction to Lifting Equipment and Accessories:
  - 6.1. Pre and post use inspection of lifting equipment and accessories;
  - 6.2. The types of faults that are common in lifting accessories;
  - 6.3. Identifying that equipment and accessories are certified for use by color coding and ID numbers;
  - 6.4. The SWL and WLL of lifting equipment and where to find these;
  - 6.5. The importance of accounting for adverse environmental factors e.g. wind strength, poor visibility, icy surfaces and how it can affect the lifting operation;

- 6.6. The purpose and safe use of different types of equipment used in lifting operations:
  - 6.6.1. Wire rope slings;
  - 6.6.2. Fiber slings;
  - 6.6.3. Eye bolts and Eye nuts;
  - 6.6.4. Swivel hoist rings;
  - 6.6.5. Master links;
  - 6.6.6. Shackles;
  - 6.6.7. Chain Slings;
  - 6.6.8. Bridles sets;
  - 6.6.9. Tag lines, winches;
  - 6.6.10. Handsfree tools (types and their specific uses);
  - 6.6.11. The correct method of securing cargo using ratchet straps, to include checking WLL and breaking strain of ratchet straps before fitting.
7. Planning for Lifting Operations by Crane:
  - 7.1. Classification of lifts i.e. routine and non-routine (simple, complicated, complex);
  - 7.2. The key steps in plan lifting operations including:
    - 7.2.1. Assess the weight and cargo;
    - 7.2.2. Walk the route (hazard identification and equipment limitations);
    - 7.2.3. Prepare the landing area;
    - 7.2.4. Select the correct equipment;
    - 7.2.5. Prepare the load;
    - 7.2.6. Trail lift check balance and security. Carry out lift;
    - 7.2.7. Land the load check load stability and release the slings;
    - 7.2.8. Restore the work area and equipment.
  - 7.3. Erecting signs and barriers or posting sentries;
  - 7.4. Possible ricochet or deflection of dropped objects from barriers;
  - 7.5. The purpose of a lifting plan and the key information it contains;
  - 7.6. The importance of establishing escape routes from the work area;
  - 7.7. Various methods and sources of determining the weight of a load – e.g. sourcing data from the manufacturer’s manual;
  - 7.8. How to position and install the lifting equipment for the lifting operation;
  - 7.9. Safe positioning of personnel involved in lifting operations when load handling;
  - 7.10. When there is a change to the planned lifting operation the management of change process that must be followed;
  - 7.11. The lifting plan and risk assessment prepared by the competent person prior to the work commencing;
  - 7.12. Identifying the Banksmen & Slingers for the lift;
  - 7.13. Weight identification and estimation of the load using records and other sources of information such as company/manufacturer’s manuals;
  - 7.14. Ensuring the load to be lifted is within the safe working limit (SWL) of the crane and associated lifting equipment;
  - 7.15. Deciding when tag lines need to be used and their safe use;
  - 7.16. Where to find the load bearing capacity of a lay down area;
  - 7.17. Principles of sling angles and tensions.

## COURSE DESIGN:

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Theoretical – 8 hours  
**TOTAL:** 24 hours

Practical – 16 hours

## PREREQUISITE(S):

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- There are no prerequisites for Banksman and Slinger Initial Training.

## MINIMUM/MAXIMUM NUMBER OF DELEGATES

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This course requires a minimum of 3, and a maximum number of 12 trainees.

The following ratios indicate the maximum number of learners to be supervised by one instructor at any one time during each activity:

- Theory 1:12
- Practical 1:6.

## MAIN SAFETY ISSUES:

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- Always check the integrity of the lifting equipment;
- Use appropriate PPE;
- Never stand under or dangerously near a lifting activity;
- Never touch a cargo when lifted;
- Attention to weather changes;
- **All equipment must be maintained, inspected and tested in accordance with current standards/legislation, guidance and manufacturers recommendations.**

## REQUIRED EQUIPMENT:

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- Appropriate lifting equipment and accessories;
- Appropriate PPE (e.g., safety helmets, safety boots, eye protection, gloves, high-visibility vest and gloves);
- Crane - Cranes used for the lifting activities associated with the equipment items listed below should be of the pedestal or mobile type and fitted with a boom which is compatible to the operational requirements in the training environment in which the crane will be operating and representative of lifting activities in the energy industry;
- Handheld radio set for banksman and crane operator;
- Ratchet straps, chain, fiber and wire slings;
- Appropriate lifting appliances and accessories;
- Tag lines;
- Handsfree lifting tools (different types);
- Variety of items to be lifted including:
  - Pre-slung load;
  - Cargo carrying unit;
  - Pipe bundles / single pipes;
  - Scaffolding tubes and boards;
  - Suitable cargo as found offshore for securing within a container OR half height using ratchet straps;
- (Closed door) container OR half height to be used for the ratcheting of cargo.

## PROCEDURE FOR PRACTICAL EXERCISES:

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- The learner must be briefed to ensure they know how the assessment will be conducted and what is expected of them during the assessment;
- The center must provide learner with lifting plans for the lifting operations to be undertaken, that have been approved by a competent person;
- The center must provide learner with risk assessments for the lifting operations to be undertaken, that have been approved by a competent person;
- The assessor must provide feedback to the learner following completion of the practical assessments;
- Practical training areas so designed to accommodate the working area of the crane, the path of the load and to enable each learner to participate fully in the following:

# Banksman and Slinger I

1. The Banksman's role in a simple pre-slung lift;
2. Preparing a standard load which requires a single leg sling;
3. Preparing a standard load which requires more than one sling;
4. Securing the cargo within a container or half height using ratchet straps;
5. Slinger's role during a free access lift, a restricted access lift, a single tubular lift, a bundled tubular lift, a load with an offset center of gravity, a lift with a cargo carrying unit and a blind lift;
6. The Banksman's role during a free access lift, a restricted access lift, a single tubular lift, a bundled tubular lift, a lift with an offset center of gravity, a lift with a cargo carrying unit and a blind lift varying the use of hand signals and radio communications.

**All exercises must:**

- Be designed to ensure each learner will participate in the role of the Banksman and in the role of the Slinger (never simultaneously) in all the lifts listed in 1 to 5 below;
- Ensure that learners are briefed and debriefed by instructional staff;
- Be scenario based;
- Ensure that learners are provided with equipment and facilities appropriate to the scenario;
- Ensure each learner will participate in slinging all the elements from category A;

**Provide exercises to enable each learner to practice and demonstrate:**

1. Free access lift (twice – once as banksman and once as a slinger);
2. Restricted access lift (twice – once as banksman and once as slinger);
3. Blind lift (twice – once as banksman and once as slinger);
4. Lift with a load with an offset center of gravity (twice – once as banksman and once as slinger);
5. Securing cargo for transportation by road or sea.

In addition, it is necessary to mix up elements of each of the following categories for lift types:

In the section above (1 to 5) so that the learners meet each element at least once.

Category	Learning Element
<b>A</b>	Pre-slung load Single sling More than one sling Attach and use tag lines
<b>B</b>	Single tubular Bundled tubulars Cargo Carrying Unit Scaffold tubes Boards
<b>C</b>	Radio Hand signals

**CERTIFICATION:**

Certificate of training.

**CERTIFICATE VALIDITY PERIOD:**

2 years.