

# Construction Skills Certification Scheme

## Candidate Pack for the Programme – CSCS Mobile Crane

Please read this document carefully. Further information and clarification may be obtained from the CSCS Operations Unit, phone 01 533 2500

### Guidance Notes for Candidates

The following documents are also attached:

- Part 1 – Skills Self-Analysis
- Part 2 – Applicant Details
- Part 3 – Endorsement of Operating Competence
- Part 4 – Practical Test Criteria

### Aim of Programme

The CSCS crane training and assessment programme enables trained construction crane operators to gain recognition for their achievements by the way of certification, and provide an opportunity for participants to demonstrate their skills, knowledge and attitudes associated with plant operations, which provides suitable certification.

### Candidate Profile

Candidates for this programme must:

- Have at least six months full time experience operating as a trainee Mobile Crane operator in construction in accordance with the 5<sup>th</sup> Schedule – of the Safety, Health and Welfare at Work (Construction) Regulations 2013 – S.I. No. 291 of 2013. The six months experience must be within the last two years.
- Possess a valid 'Safe Pass' registration card
- Be in possession of a valid CSCS Slinger/Signaller card
- Be at least 18 years of age

Note: The above items must be verified by the current or previous employer (Part 3 of this pack)

### Application Requirements

- Approved Training organisations must send the Candidate Pack and Course Notes to the Candidate in good time prior to the course date.
- Sections A B and C of Part 2 need to be completed by the applicant with Part 3 completed by the employer.
- Section C of part 2 must list at least six months full time experience operating as a trainee Mobile Crane operator.
- Part 1 - Skills Self-analysis, Part 2 Applicant Details and Part 3 - Endorsement of Operating Competence must be completed and submitted to the chosen Approved Training Organisation at least one-day prior to attending the one-day training and assessment programme. Failure to do so will result in the candidate being unable to complete the programme.

**Candidates must bring with them on the day:- a passport sized photograph, their Safe Pass card, CSCS Slinger Signaller card plus safety helmet, safety boots, reflective 'hi-viz' jacket and gloves.**

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## Candidate Pack for the Programme – CSCS Mobile Crane

### One Day Programme Content

#### Induction

Registration and induction will be undertaken at the start of the day. Candidates **must** present their Safe Pass and Slinger Signaller cards and photograph to the assessor. Parts 1, 2 and 3 must be already submitted.

#### Skills Validation Session

Candidates will undertake a minimum of a 3 hour Skills Validation Session with the course instructor. The Skills Validation Session cannot give skills and knowledge not held, but allows trained operators to eliminate 'bad habits' gained on site.

Please note that the instructor has the right to refuse the candidate access to the test if they have demonstrated dangerous operating skills that contravene any part of the Safety, Health and Welfare Regulations.

#### Theory Test

On completion of the Skills Validation Session, candidates are allowed 45 minutes to undertake a multi-choice question paper. Questions will be based on the following:

- Legislation and regulations
- Employer and employee responsibilities
- Safe working practices
- Crane components and functions
- Correct operating techniques
- Pre-use checks and basic maintenance
- Types and characteristics of materials and loads
- Site safety
- Shut down and securing procedures

Subjects that the questions will be based on will be covered during the Skills Validation Session.

To be successful on the theory test, candidates must achieve a minimum of 70% of the total available marks. Candidates who achieve a minimum of 85% will be awarded a credit.

#### Practical Test

On the test the candidate will demonstrate tasks with the Crane. The tasks to be undertaken, equipment required and a sample grading sheet is contained in Part 4 of this pack – Practical Test criteria. Part 4 of this pack details the equipment and resources needed for the test and the tasks the candidate will be expected to carry out with a Mobile Crane.

The grading sheet is divided into essential items and scored marks. Scored marks allow a limited number of minor errors to be made. To succeed, the candidate must achieve all essential items and not exceed the maximum score. Candidates who score no penalty marks as well as all the essential marks will be awarded a credit. The practical test has a maximum time of 1 hour and 15 minutes in which all tasks must be completed.

## Construction Skills Certification Scheme

### Candidate Pack for the Programme – CSCS Mobile Crane

#### Feedback and Certification

If a candidate meets the required standard, the approved training organisation will send the relevant assessment documentation to SOLAS for certification and registration. The CSCS card is printed and posted to the training provider for distribution. A QQI certificate will also be awarded as a result of a pass on the one-day programme.

Candidates who achieve a credit in the theory test **and** practical test will be awarded an overall credit.

Candidates who are referred will receive written feedback from the assessor, and may be advised to undertake further training and/or site experience.

If a candidate is successful in the theory but not the practical part of the test, then they may re-attempt just the practical part. If the candidate has not been successful in the theory test, then they may not attempt the practical test.

This concession may only occur if the candidate returns to the same approved trainer and training organisation within 9 months. If they choose to go to a different organisation, they will have to do both the practical and theory parts again.

For learners who do not reach the required standard, a period of 5 days must elapse before they can retake the test.

#### Registration Card Duration

CSCS registration cards are valid for five years and can be renewed up to six months before the expiry date

#### Cancellation of Certificates and Cards

Where it is discovered that the information provided by the Candidate was incorrect or the programme was not delivered in accordance with SOLAS specifications the Certification and registration card may be withdrawn and the relevant authorities notified.

## PARTICIPANT DATA PROTECTION NOTICE

### 1. PERSONAL DATA COLLECTED AND OBTAINED

This Data Protection Notice ("**Notice**") sets out the basis on which SOLAS ("**SOLAS**", "**we**", "**our**" or "**us**") of Block 1, Castleforbes House, Castleforbes Road, Dublin 1 will use the personal details ("**Personal Data**") you will provide when completing the participant application form (the "**Form**") to be registered as a CSCS/QSCS cardholder. This Notice also details how SOLAS will process your Personal Data for the purpose of assessing your Form and, if successful, issuing your CSCS/QSCS card to you ("**Card**"). The Personal Data we obtain from you will be held by SOLAS as a controller.

SOLAS will collect and process the Personal Data that you provide in the Form (e.g. name, contact details, PPSN, address, photograph, occupation and employer details.).

**IMPORTANT:** where you provide Personal Data about other individuals (eg your existing/previous employer or endorsers), you agree that you are responsible for ensuring that such individuals know their Personal Data will be used by SOLAS accordance with this Notice.

### 2. HOW AND WHY WE PROCESS YOUR PERSONAL DATA

This section details how ("**legal basis**") and why ("**purposes**") we process your Personal Data:

**Legal basis:** it is necessary to process your Personal Data to enter into and perform our contract with you including for the following purposes: (a) to process your Form; (b) to issue you with a Card; (c) to verify your Card on an ongoing basis; (d) to renew your Card where you ask us to do so; and (e) to respond to you when we receive any correspondence from you. **IMPORTANT:** If you do not provide us with your Personal Data so that we can process it for the above purposes, we will not be able to assess or process your Form, issue you with or renew your Card and/or communicate with you as necessary in relation to your Form and/or your Card.

**Legal basis:** it is also necessary to process your Personal Data for the purpose of complying with legal obligations to which we are subject including to fulfil our statutory functions.

### 3. DISCLOSURE OF YOUR PERSONAL DATA

We may disclose some or all of your Personal Data to the following parties: SOLAS business units, SOLAS agents or service providers including CSCS/QSCS trainers, your existing or potential employers, government and state authorities including in particular the Construction Industry Federation (CIF), Credit Card Systems Ireland Ltd and Quality and Qualifications Ireland. We may also disclose your Personal Data to third parties if we are under a legal duty to disclose or share your Personal Data in order to comply with any legal or regulatory obligation or request or to perform a public function.

### 4. KEEPING YOUR PERSONAL DATA

We will keep your Personal Data for the period for which your Card is valid and/or renewed and for a period of 7.5 years from when your Card expires and/or is not renewed. In some cases, we will need to retain your Personal Data for longer periods for compliance with legal obligations imposed on us or where we are a party to legal proceedings with you, and to ensure you a continued client service. Such Personal Data will be securely retained in line with the SOLAS records retention and disposal Procedure.

### 5. YOUR RIGHTS

This subsection sets out the rights which you have to address any concerns or queries with us about our processing of your Personal Data:

Right	Further Information
Right to be Informed	<ul style="list-style-type: none"> <li>You have the right to know whether your Personal Data are being</li> </ul>

	processed by us, how we use your Personal Data and your rights in relation to your Personal Data. We comply with this by way of this Notice.
<b>Right of Access</b>	<ul style="list-style-type: none"> <li>You have the right to request a copy of the Personal Data held by us about you.</li> <li>We will only charge you for making such an access request where we feel your request is unjustified or excessive.</li> </ul>
<b>Right to Rectification</b>	<ul style="list-style-type: none"> <li>You have the right to request that we amend any inaccurate Personal Data that we have about you.</li> </ul>
<b>Right to Erasure</b>	<ul style="list-style-type: none"> <li>You have the right to ask us to erase your Personal Data where:               <ol style="list-style-type: none"> <li>it is no longer necessary to perform your contract with us;</li> <li>you object to the processing and we have no overriding legitimate grounds;</li> <li>your Personal Data has been unlawfully processed; or</li> <li>it must be erased to comply with a legal obligation.</li> </ol> </li> </ul>
<b>Right to Restriction of Processing</b>	<ul style="list-style-type: none"> <li>You have the right to ask us to restrict processing your Personal Data in the following situations:               <ol style="list-style-type: none"> <li>where you contest the accuracy of your Personal Data;</li> <li>where the processing is unlawful and you do not want us to delete your Personal Data; or</li> <li>where we no longer need your Personal Data for the purposes of processing but you require the data in relation to a legal claim.</li> </ol> </li> <li>When you exercise this right we may only store your Personal Data.</li> <li>We may not further process the data unless you consent or the processing is necessary in relation to a legal claim or to protect the rights of another person or legal person or for reasons of important public interest.</li> <li>We will inform you before the processing restriction is lifted.</li> </ul>
<b>Right to Data Portability</b>	<ul style="list-style-type: none"> <li>You may request us to provide you with your Personal Data which you have given us, in a structured, commonly used and machine-readable format and you may request us to transmit your Personal Data directly to another controller, where this is technically feasible. This right only arises where:               <ol style="list-style-type: none"> <li>we process your Personal Data on the legal basis that it is necessary to perform our contract with you; <b>and</b></li> <li>the processing is carried out by automated means.</li> </ol> </li> </ul>

You can exercise any of these rights by submitting a request to **the Data Protection Officer, SOLAS, Castleforbes House, Dublin 1**. We will provide you with information on any action taken upon your request in relation to any of these rights without undue delay and at the latest within one month of receiving your request. We may extend this by up to 2 months if necessary, however we will inform you if this arises.

You have the right to lodge a complaint with the Data Protection Commission with regards to our processing of your Personal Data.

## 6. CHANGES TO THIS NOTICE

We may amend this Notice from time to time, in whole or part, at our sole discretion. Any changes to this Notice will be posted on the SOLAS CSCS/QSCS website at <http://www.solas.ie/Pages/CSCS.aspx>

If at any time we decide to use your Personal Data in a manner significantly different from that stated in this Notice, or otherwise disclosed to you at the time it was collected, we will notify you by e-mail, and you will have a choice as to whether or not we use your information in the new manner.

## 7. CONTACT US

If you have questions or concerns about this Notice, please contact the SOLAS Data Protection Officer at SOLAS Data Protection Officer, SOLAS, Castleforbes House, Dublin 1.

# Construction Skills Certification Scheme

## Skills Self-Analysis CSCS Mobile Crane - Part 1

### Introduction

The aim of this form is to allow applicants to measure their knowledge and experience on the safe use of a Mobile Crane against the questions below. This is to ensure that all those attending the One-day Trained Operator Programme have sufficient skills and knowledge to comfortably meet the required standards. This section **must** be completed and returned to the chosen Approved Training Organisation prior to attending the one-day training and assessment programme.

### Instructions to the Applicant

Please take your time and answer all questions honestly, as dishonest answers mean that you may be un-successful on the course programme. On completion, add up the total number of questions you have scored as 'yes' and refer to the Assessment Grading which will analyse your knowledge and experience

Please answer **all** questions as indicated:

	Yes	No
1. Can you identify and use all the controls correctly?	<input type="checkbox"/>	<input type="checkbox"/>
2. Can you extract information from the operators handbook?	<input type="checkbox"/>	<input type="checkbox"/>
3. Do you correctly carry out all pre-use and running checks?	<input type="checkbox"/>	<input type="checkbox"/>
4. Can you correctly configure the crane for site and road travel?	<input type="checkbox"/>	<input type="checkbox"/>
5. Have you travelled over differing types of terrain, rough, undulating ground?	<input type="checkbox"/>	<input type="checkbox"/>
6. Can you set the crane up correctly in order to lift various loads?	<input type="checkbox"/>	<input type="checkbox"/>
7. Do you know the purpose of an anemometer?	<input type="checkbox"/>	<input type="checkbox"/>
8. Do you know how to read and interpret load or duties charts correctly?	<input type="checkbox"/>	<input type="checkbox"/>
9. Can you explain the different methods of determining the weight of a load?	<input type="checkbox"/>	<input type="checkbox"/>
10. Do you know what the recommended minimum distance is when working near power lines?	<input type="checkbox"/>	<input type="checkbox"/>
11. Can you explain the purpose of the outriggers and when they should be used?	<input type="checkbox"/>	<input type="checkbox"/>
12. Can you lift and place various loads very accurately in confined spaces?	<input type="checkbox"/>	<input type="checkbox"/>
13. Do you know how to set up an RCI/ASLI?	<input type="checkbox"/>	<input type="checkbox"/>
14. Have you lifted and placed various loads using the crane's full working height?	<input type="checkbox"/>	<input type="checkbox"/>
15. Do you know what is meant by 'load centre'?	<input type="checkbox"/>	<input type="checkbox"/>
16. Can you recognise the approved hand signals?	<input type="checkbox"/>	<input type="checkbox"/>
17. Can you explain how to control a load swing?	<input type="checkbox"/>	<input type="checkbox"/>
18. Do you know when to use a fly jib or extension and where it is fitted to?	<input type="checkbox"/>	<input type="checkbox"/>
19. Can you shut down and secure the crane correctly after work?	<input type="checkbox"/>	<input type="checkbox"/>

Yes total \_\_\_\_\_

Candidate Name: ..... Date: .....

## Construction Skills Certification Scheme

### Assessment Grading

#### If you have scored 15 – 19

You appear to have a good understanding of Mobile Crane operations to comfortably participate on the trained operator course programme.

#### If you have scored 10 – 14

Your understanding of Mobile Crane operations is limited and we advise that you acquire further knowledge before attending the trained operator course programme. Remedial training and further site experience is advised.

#### Less than 10

Your supposed understanding of Mobile Crane operations is very limited and we strongly advise you not to attend the course until you have undertaken remedial or full training.

### Assessment Requirements

Should a candidate have any particular assessment requirements i.e. need a translator or reader/writer or any other form of special needs, the approved training organisation **must** be informed well in advance of attending the one day programme so that the appropriate help may be sourced.

Information regarding a candidate's particular requirements will be treated with the strictest confidence by the approved training organisation.

### REMINDER

**Candidates must bring with them on the day:**

- Passport sized photograph ..... ☐
- Safe Pass card ..... ☐
- Safety helmet ..... ☐
- Safety boots ..... ☐
- Reflective 'hi-viz' jacket ..... ☐
- Gloves ..... ☐

Further information and clarification may be obtained from the CSCS Unit Office or phone 01 5332500

**Application Details CSCS Mobile Crane - Part 2**



## Construction Skills Certification Scheme

### Section A Applicant Details

Surname ..... Forenames.....

Address .....

.....

..... Date of Birth: .....

Tel: ..... PPS Number .....

Safe Pass Expiry Date: .....

### Candidate Profile

Candidates for this programme must:

- Have at least six months full time experience operating as a trainee Mobile Crane operator in construction in accordance with the 5<sup>th</sup> Schedule – of the Safety, Health and Welfare at Work (Construction) Regulations 2013 – S.I. No. 291 of 2013. The six months experience must be within the last two years.
- Possess a valid 'Safe Pass' registration card
- Possess a valid CSCS Slinger/Signaller registration card
- Be at least 18 years of age

### Section B Applicant Declaration

I confirm that the information detailed in this application, and any submitted information is valid, genuine and correct.

- I have at least six months full time experience operating as a trainee Mobile Crane operator in construction within the last two years
- I am in possession of a valid 'Safe Pass' registration card
- I am in possession of a valid CSCS Slinger Signaller registration card
- I am at least 18 years of age

Please sign

Date: .....



## Construction Skills Certification Scheme

## Application Details - CSCS Mobile Crane - Part 2

## Section C

## Applicant Experience

**Please briefly list work carried out with a Mobile Crane for at least six months, including dates and location of work.**

Dates from/to	Machine make & model	Location and brief details of work done
<i>Example 9 Jan 14- 22 May 2015</i>	<i>Liebherr 1055 CKE 700</i>	<i>Barron Construction, Kilty Street, Dublin. Lifting and placing steel beams for new warehouse build</i>
		(continue on a separate sheet if needed)

## Endorsement of Operating Competence - Mobile Crane - Part 3

## Construction Skills Certification Scheme

Applicant Name.....

This endorsement of operating competence must be completed by an existing or previous employer. This part can only be completed by a supervisor or line manager of the employer. The endorsing individual should only initial the statements where they can confirm that the applicant can carry out the work. Some endorsements may require the initials of more than one endorser. Copies of this form may be made if there are more than two endorsers signing.

Each statement must be initialled by the endorser. The applicant can only be considered competent providing **all** statements are signed by one or more endorsers in the Endorsers details section.

I consider that the above named applicant is able to competently:	Initials
1. Check, inspect and maintain the mobile crane for efficient and safe use under construction site conditions	
2. Understand and interpret duties/load charts and safe load indicators	
3. Manoeuvre the mobile crane around the site with loads, and with if applicable	
4. Understand and establish safe use of lifting gear	
5. Lift and place a variety of loads accurately and safely using the full radius and working range of the mobile crane	
6. Follow given instructions and signals when working with the mobile crane	
7. Shut down, secure and leave the mobile crane in a safe condition	
8. Follow manufacturers requirements when working with the mobile crane	

### Endorsers Details

Full Name: .....

Company name and address: .....

.....

Position: ..... Contact Tel no: .....

Relationship to Applicant.....

*The named individual signing this section must be in a supervisory or managerial position, nominated by the employer organisation.*

### Declaration

We/I the employer confirm that:

- the applicant has at least six months full time experience operating as a trainee Mobile Crane operator in construction within the last two years
- the applicant is in possession of a valid CSCS Slinger Signaller registration card
- the applicant is in possession of a valid 'Safe Pass' registration card
- the information detailed in this application, and any submitted information is valid, genuine and correct.

Signature

Date:

### Practical Test Specifications - Mobile Crane - Part 4

# Construction Skills Certification Scheme

## Equipment and Resources

- Wheeled mobile crane which meet current legislative requirements
  - not less than 20 tonne lifting capacity,
  - is serviceable and meets current legislation,
  - has a minimum of 4 outriggers and a lattice extension/fly jib,
  - plus the operator's manuals for the crane and carrier vehicle.
- Suitable loads of known weights, being:
  - 1 x load which must be a minimum 50% load at 75% full radius of the crane (excluding the lattice extension/fly jib) - **Load 1**
  - 1 x load which must be within the duties chart for 2 falls of rope - **Load 2**
  - 1 x load which must be within the duties chart for the lattice extension/fly jib - **Load 3**
  - 1 x load being a tube or similar not less than 5 metres in length with two lift points, one at each end. This load must be capable of free-standing on one of its ends. **Load 4**
- A measuring tape of sufficient length, able to measure the maximum radius of the crane.
- Two-way radios
- Assistance from a Slinger and Signaller who is competent and in possession of a relevant CSCS card
- Suitable certificated lifting gear for all loads.
- An area with facilities for:
  - crane travel and parking
  - a structure(s) to place loads at a height of at least 2 metres
  - structure to allow placing of loads out of sight of the operators cab ('blind' lift)
- Equipment to create restrictions for travelling and manoeuvring.

## Tasks

The Candidate needs to:

1. Carry out full pre-start and running checks on the crane and carrier vehicle in accordance with manufacturer's requirements.
2. Prepare the crane for road travel, and drive to the lifting area.
3. Position and set the crane to lift and move **Load 1** which must be located at minimum radius. Keep the load at 1 metre above ground level and place in a position which requires the crane to be at 80% of maximum reach.
4. Position and set the crane to lift and move **Load 2** from ground level, and land in a designated position at least 2 metres above ground level. There must be a change in radius. On completion land the load at the original start point completing 360 degrees of rotation.
5. Set the crane to lift and move **Load 3** from a designated position, rotate for at least 240 degrees, and land at a designated point.

## Practical Test Specifications - Mobile Crane - Part 4

## Construction Skills Certification Scheme

6. Position and set the crane to lift **Load 4** using the hitch point(s) at the end. Lift **Load 4** to stand vertically on one of its ends. When vertical to the satisfaction of the examiner, replace back to ground level and detach the load.
7. Position and set the crane to lift and move a load from a designated position, and land in a position out of sight of the candidate.
8. Retrieve a 2 metre swing that has been induced, for a minimum of 1 x swing in a left to right plane and a minimum of 1 x swing in a forward to reverse plane.
9. On completion of all the lifting tasks, configure the crane for travel.
10. Reverse the crane into the confined space, being no wider than the width of the crane plus 900mm
11. Travel the crane to a park position, shut down and secure.

### Time Allowed

The candidate must complete all tasks within 2 hours

### Notes

- Verbal questions may be used for task 1, but **only** on items not able to be checked due to heat of the engine, i.e. coolant, oil level etc.
- Before carrying out each lift, the instructor must ensure that the candidate has programmed the ASLI/RCI correctly for the falls of rope, radius, boom length etc.
- All lifting and landing movements to be under directions of a signaller who must be competent and CSCS certificated.
- Tasks 3 to 8 may be undertaken in any order during the test.
- All loads must be placed within 200 mm of a given position. The instructor shall determine each position.
- Tasks 7 and 8 may be incorporated with tasks 3, 4, or 5.
- Care must be taken to ensure that the lifting gear for Load 4 is secure from horizontal to upright.
- At least one lift must be under the direction of hand signals and one lift using radios.

### candidates will be assessed under the following headings

1. Carry out pre-start and running checks (verbal questions answered if engine hot)
2. Mount and dismount the cab(s) correctly
3. Carry out full observation before moving and reversing the vehicle
4. Maintain full observation when travelling the vehicle
5. Place all loads at the given points within the given tolerance
6. Keep the hoist rope vertical
7. Conform correctly to given hand signals and verbal communications
8. Correctly carry out shut down and securing procedures
9. Conform with legislation and manufacturer's instructions
10. Complete the test in the given time

# Construction Skills Certification Scheme

## Safe Lifting Operations



### Mobile Crane

# **Construction Skills Certification Scheme**

## **Safe Lifting Operations**

### **Mobile Crane**

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## Receipt

I have received a copy of the CSCS Safe Lifting Operations – Mobile Crane notes and agree to read it carefully and comply with all the guidance and advice on safety and good working practices which it contains.

Signature	
Full Name	
Date	

Name of Company or Organisation	
Address	

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## Acknowledgements

Extracts from BS 7121: Part 1 are reproduced with the kind permission of the British Standards Institution. Complete copies can be obtained by post from B.S.I. Sales, 389 Chiswick High Road, London W4 4AL.

Extracts and illustrations by kind permission of:

- CITB-Construction Skills
- [Construction Plant Hire Association](#)

## INTRODUCTION

This guide for safe Mobile Crane operations has been produced for plant operators. It sets out to provide guidance in an easy to read form, paying particular attention to the Mobile Crane operator. It covers a wide range of operating conditions and activities, and aims to promote safe working practices which comply with current legislation and the precautions to be taken if accidents are to be avoided.

Specific sections on the preparation and operation of Mobile Cranes contain readily accessible information in a checklist format with a simple **Do's** and **Don'ts** message.

This guide complements manufacturers' instructions and recommendations with regard to:

General safety legislation and safe working procedures for Mobile Crane operators

- safe and efficient use of Mobile Cranes
- Basic operator maintenance.

Manufacturer's operating manuals must always be used for the relevant machine and referred to as and when require. The manufacturer of the machine has no direct control over the operation of the machine – *it is the responsibility of the operator to work safely at all times.*

This guide does not attempt to try to cover every aspect of working conditions when using Mobile Cranes and does not cover every make and model of Mobile Crane available

## 1. Safety, the law and you

This section provides guidance for employers, employees and the self-employed who use mobile plant equipment. Minimum legal requirements are outlined which relate to the safe use of mobile plant. Various Acts of the Oireachtas and statutory requirements, examples of which are listed below, provide the definitive legislation to be followed.

### Legislation

Legislation to be followed includes the Safety, Health and Welfare at Work Act 2005 (SHAWWA). Parts of the Act and other regulations connected with the operation of plant include:

- *General Duties of Employer*
- *General Duties of Employee and Persons in Control of Places of Work*
- Protective and Preventive Measures
- Safety Representatives and Safety Consultation
- The Health and Safety Authority
- Offences and Penalties

*All Health and Safety rules also apply to self-employed persons.*

### Regulations and Codes of Practice

Regulations made under an Act of the Oireachtas are mandatory

**Safety, Health and Welfare at Work (Construction) Regulations 2013 S.I No. 291 of 2013 include**

- Design and Management
- General Duties of Contractors and others
- General Safety Provisions
- Excavations, Shafts, Earthworks, Underground Works and Tunnels
- Cofferdams and Caissons
- Compressed Air
- Explosives
- General Health Hazards
- Construction Work on or Adjacent to Water
- Transport, Earthmoving and Materials-Handling Machinery and Locomotives
- Demolition
- Roads
- SCHEDULE 4 - Safety Awareness Scheme
- SCHEDULE 5 - Construction Skills Certification Scheme
- SCHEDULE 6 - Procedure for Selection of Site Safety Representatives
- SCHEDULE 7 - List of Machinery

- **The Safety, Health and Welfare at Work (General Application) Regulations 2007 S.I. No. 299** include:
  - Workplace and Work Equipment
  - Use of Work Equipment
  - Personal Protective Equipment
  - Manual Handling of Loads
  - Display Screen Equipment
  - Electricity
  - Work at Height
  - Control of Noise at Work
  - Control of Vibration at Work
  - Safety Signs at Places of Work
  - First-aid
  - Explosive Atmosphere at Places of Work

The introduction of the above legislation, which protects people at work and those who may be affected by their actions, has helped to improve our working environment.

The legislation concerns employers, employees and the self-employed, and makes people responsible for their actions, as well as their omissions, including others affected by their actions.

Regulations made under an Act of the Oireachtas are mandatory and may be supplemented by an Approved Code of Practice (ACoP), which advises organisations and their staff on how to comply with the law.

If the advice of the ACoP is followed then generally you are meeting the requirements and complying with the law. If you, or your organisation, are prosecuted for breaking a health and safety law and it is proven you did not follow the advice in the ACoP, you must prove you have complied with the law in another way.

*Penalties can be imposed on persons who are found guilty of a Health and Safety Offence (on summary conviction), which may include:*

- a fine
- a term of imprisonment.

*Penalties may be imposed for:*

- disobeying a Prohibition notice
- unauthorised disclosure of information
- a breach of the conditions of a licence.

## Duties of personnel

It is in the interest of every employer and employee involved in the use of plant and equipment to promote safety within their workplace.

### Legal duties of employers

*'Every employer shall ensure, so far as is reasonably practicable, the safety, health and welfare at work of his or her employees.'* \*

Employers have a duty to:

- provide a safe working environment that is without risk to health
- provide and maintain safe plant and equipment and ensure it has been designed, constructed, tested and examined to be safe
- carry out risk assessments and provide their employees with clear and appropriate information on any risks that exist in the workplace and how they intend to reduce those risks
- prepare a safety statement based on the risk assessment
- provide suitable protective clothing and equipment (PPE) to ensure the health and safety at work of their employees. *'Every employer shall ensure that any measure taken by him or her relating to safety, health and welfare at work do not involve financial cost to his or her employees'* \*
- provide employees with any necessary information, including legal requirements, adequate instruction, training and supervision *'in a form, and manner and, as appropriate, language that is reasonably likely to be understood by the employee concerned'* \*
- obtain the services of a competent person for Health and Safety purposes
- provide adequate welfare facilities

**\*Source:** Safety, Health and Welfare at Work Act 2005

## **Legal duties of employees**

In general terms, the law says that you must:

- be responsible and as safe and careful as possible in your work, so as not to put the health and safety of yourself or others at risk, including members of the public
- co-operate with and assist your employer or any other person, as far as necessary, to enable them to carry out their legal duties in health and safety
- not interfere with or misuse any safety devices or equipment
- not intentionally or recklessly interfere with anything provided in the interest of health, safety and welfare
- follow your employer's procedures and the manufacturer's instructions which apply to the care and safe operation of the machine you are responsible for
- inform your employer, without unreasonable delay, of any work situation that you are aware of which presents a risk to the health and safety of yourself and others
- report (without delay) any defects in plant and equipment which might endanger safety.

All Health and Safety rules also apply to self-employed persons.



## 2. Accident prevention and control

Accidents are unplanned, unwanted events which can injure or kill people. Industry also pays a price with loss of working hours, loss of production and damage to plant and equipment and extra costs.

Remember that **you** as a Mobile Crane operator **are the key to safety**: good safety practices not only protect you but also protect others around you.

Accidents can be caused by unsafe working practices and attitudes of people in the workplace. By following a safety programme and adopting safe working practices, unsafe conditions can be avoided. This contributes to improving safety in the workplace.

Prevention can remove or reduce the likelihood of an accident by following some basic rules, for example:

### Do

- Protect yourself – wear all protective clothing and personal safety equipment issued to you or required by your working conditions
- Follow a safety programme – understand and follow safety procedures when working on site and using plant and work equipment
- Assess your ability to do the job – ensure you are fully aware of the job requirements and how they need to be carried out
- Stay alert – know where to get help. Know the first aid and emergency procedures
- Make yourself aware – study the manufacturer's information and your company's operating instructions and procedures for using your plant and equipment. If the information is not provided, ask your supervisor or the suppliers of the plant/equipment to supply it
- Report faulty/unsafe plant or equipment and any dangerous occurrences and incidents
- Use the equipment safely so as not to affect its condition or use
- Be careful – human error is caused by carelessness, fatigue, preoccupation and lack of concentration. Ensure you watch out for others who are affected by your actions
- Ensure all personal injuries, no matter how slight, are reported and entered in the accident book (or equivalent)
- Take advantage of any training programme offered by your employer or contractor. You are never too old to learn new practices or techniques

## **Don't**

- Use plant or work equipment that you have not been trained to use
- Overload any plant or work equipment either by lifting or loading
- Use or treat equipment carelessly or in an unsafe manner
- Throw or drop objects from plant or work equipment
- Attempt to carry out work on moving parts of plant or work equipment with the safety guards removed
- Indulge in horseplay on plant or work equipment
- Attempt to use any type of plant or work equipment if you are under the influence of drugs, alcohol or any other substance which affects your health or judgement
- Ignore warning instructions or safety signs

### **3. Safe use of Mobile Cranes**

If you are an operator of a Mobile Crane you are legally required to be responsible for your own safety and that of others who are working nearby.

Common sense plays a major part in the safe operation and working of a Mobile Crane. All operators should be aware of dangers and hazards, which could injure them or other site workers nearby, or cause damage to the machine.

Operators of Mobile Cranes are responsible at all times for the safety of their machine and its load.

Simple measures taken by yourself, your employer and by following some basic rules can reduce the possibility of risk. For example:

#### **Do**

- Comply fully with instructions given by site managers and supervisors
- Follow the manufacturer's instructions (operator manuals) for the specific Mobile Crane you are operating
- Take safety precautions when using your machine prior to, during and after work
- Operate within the machine's capabilities.

#### **Don't**

- Operate any machine unless you have received appropriate training and are authorised to do so
- Ignore hazards
- Misuse, tamper or interfere with your machine and any associated safety equipment provided to you
- Endanger your own health and safety, or that of anyone else, through being negligent.

#### **Before use**

- Always check that the Mobile Crane is serviceable and safe to use
- Carry out daily checks and maintenance
- Check working areas for hazards and obstacles, which could affect the operation of the Mobile Crane.

## During operation

### Do

- Look out for people working and hazards such as trenches, potholes and cables
- Check for underground hazards and poorly backfilled excavations
- Face the machine and use the steps and handholds when getting on or off. Ensure you maintain three points of contact
- Wear the seat belt
- Ensure the supporting surface under the outrigger pads is level and firm to support the weight of the crane and its load
- When using outriggers, **always** extend the beams to the manufacturer's instructions and lower all the jacks to lift all the wheels clear of the ground
- If packing must be built up under the outriggers to obtain a level machine, ensure it is stable, covers sufficient area and will not topple or sink into the ground
- Establish the weight of the load before attempting to lift it
- Ensure the weight of the hook block, slings, lifting beam, shackles, fly jib etc., are included as part of the load
- Before driving the crane, ensure that no one is standing in the danger zone around the crane (sounding the horn is recommended)
- Keep a safe distance from other plant or vehicles
- Before commencing a lift, allow a suitable amount for jib deflection, particularly when handling near-capacity loads
- Ensure you use the minimum length necessary when using a telescopic jib
- Ensure all cab doors are closed or are locked in the open position
- Check whether the jib has to be in line with the direction of travel
- Ensure you place the jib point directly above the load when lifting
- To assure the ability of the brakes whilst the load is raised, ensure you test the winch brake when a load is first lifted and only a few centimetres above its starting position
- Make sure that your slewing, derricking, lifting and landing areas are clear of people, vehicles and obstructions and are also kept clear during lifting and landing operations
- If the overhead alarm activates, ensure you only use the crane motions that will return the crane to safety i.e. telescoping in or lowering off
- Before leaving the machine unattended: drive clear of the working area; stop and apply brakes; disengage drive and controls; stop engine and remove ignition key
- Keep your boots as clean as possible in wet/muddy conditions. Brakes become less effective in these conditions. Wet/muddy boots can cause your feet to slip off the foot controls at vital moments.

## **Don't**

- Permit anyone to ride on loads, slings, hooks etc.
- Allow anyone to hitch a ride in the cab
- Site the crane if you are concerned about the condition of the ground – consult the appointed person
- Use the crane's indicating system to establish the weight of the load
- Use the overhead alarm to establish the safe limit of any lift. When the overhead alarm activates, the crane has already been overloaded
- Allow anybody to work under any raised loads
- Work or drive too close to banks or trenches where there is danger of collapse
- Indulge in games or horseplay
- Run the engine in an enclosed area for long periods
- Leave the machine unattended with the engine running.

## **After use**

- Park on firm, level ground; apply parking brake; ensure drive and controls are disengaged
- Stop engine and shut down in accordance with the manufacturer's recommendations
- [Top up the fuel tank](#)

## **Additional precautions to be followed for Mobile Cranes**

### **Do**

- Communicate regularly with your work colleagues and others, and keep them informed of what you will be doing
- Ensure that if hand signals are to be used to communicate they are approved and understood by everybody involved (see appendix A for illustration). Ensure that radio equipment to be used is fully charged at the start of every shift
- Ensure the area where you will be working has been checked for the presence of any buried live services before commencing any lifting operations
- Ensure you work within the minimum clearance required for working near or beneath overhead power cables. Check with site management and the local electricity supplier
- Ensure you check that the selected crane configuration is correct for the load you are lifting
- Keep at least two turns of wire rope on the hoist drum(s) when operating
- Position your machine so that people cannot be trapped between the counterweight and other obstructions
- Ensure space is kept between the hook block and the jib point. Lower the hook when lowering the jib

- Ensure that loads are free before lifting: trying to lift a load which is stuck, frozen or attached to something else could result in tipping the crane, jib collapse or other damage
- Ensure you start and stop movements smoothly and slew at speeds that will keep the load under control
- Take care when slewing with a suspended load. Carry out the operation as gently as possible so that the load remains vertically below the jib head and does not swing out of control when slewing motion is brought to rest
- Use the services of a slinger/signaller to assist you if visibility is restricted, or there are obstructions in the vicinity
- Take care to avoid side loading
- Stay within the rated lifting capacity of your Mobile Crane. You as an operator must reduce the load in adverse weather/site conditions until, in your own judgement, your machine can safely handle the lift.

**NB:** Road travel: before taking your Mobile Crane on public roads, ensure the machine is prepared for road travel, complies with all traffic regulations and obey all driving laws.

## Don't

- Tow or submit lifting equipment to shock loads
- Drag a load
- Use uncertified or unmarked lifting equipment
- Attempt to operate the crane at conditions exceeding those shown on the rating chart. Any such operation could cause the crane to tip over, cause structural damage that could cause injury or death
- Rely on spoken commands – sites can be very noisy. Follow approved signals
- Rely solely on audible alarms and warning devices and indicator aids. They are no substitute for following the rated lifting capacity charts, operating instructions and safe operating practices
- Operate too close to banks or excavations
- Allow a suspended load to be pushed
- Ever let the load or any other object make contact with the jib
- Allow the load to hit or catch anything
- Leave a load suspended on the hook of your Mobile Crane.

**Note 1:** As an operator of a Mobile Crane you should be aware that there are regulations concerning certification of cranes and lifting gear. The regulations are quite clear on what machines and items require certification. You or your company may be requested by your client to produce this certification before you commence work or during work activities on site. You should always comply with this request. If you are unsure what to do in this situation consult your supervisor for further guidance (see Appendix C for statutory certification requirements).

**Note 2:** If you as a Mobile Crane operator think that the operation you are being asked to carry out is unsafe, you should initially speak to the crane supervisor. In the event that there is a disagreement between you and the crane supervisor, you should notify your employer.

## 4. Operator servicing and maintenance duties

The Operator's contribution to maintenance of the machine is of prime importance.

It is essential that adequate time and facilities are provided to carry out maintenance of your machine. Supplies of materials and substances (oils, greases, coolants etc.) should always be to hand, with suitable provision for storing them.

All maintenance should be carried out in accordance with the manufacturer's recommendations and your company's procedures.

Whatever system of maintenance and servicing is used, all operators have the responsibility to ensure the machine is in a safe condition for work.

**Pre-use checks:** It is estimated that the recommended pre-use checks of many manufacturers would include the checking and adjustments of the following:

- fluids – engine oil, coolant, transmission, brake, hydraulic
- tyres – rims, wheel nuts, wall and tread, pressures
- hydraulic pipe/hose condition, security leakages
- hydraulic rams condition, security, leakages
- lights, warning and safety appliances, such as reversing devices, horn protective guards
- ROPS/FOPS, seat and seat belts, driving position, mirrors
- controls, gauges, warning lights and other types of safety devices.

### Running checks

- Hot/Cold starting methods
- Function of steering/brakes/hydraulic/electrical and mechanical systems
- During cold weather and extremely hot conditions always be aware of the operating temperature of the machine.

### Maintenance and servicing schedules

Apart from daily pre-start checks, servicing schedules are usually based on machine running hours, therefore regular checks need to be kept on the machine's hour-meter reading.

Operators are likely to carry out only basic servicing on their machine in accordance with the manufacturer's recommendations and company procedures. In addition to pre-start and running checks, operators would usually be responsible for:

- cleaning air filter dust bowls
- draining water and sediment/fuel/water separators
- replenishing coolants, lubricants and fluids
- greasing/lubricating pins, pivot points, linkages, wire ropes, sheaves and pulleys
- checking battery levels and condition of their terminals and cables
- carrying out minor adjustments.

You should only carry out the servicing on your machine if you have been trained and have been authorised to do so.



***Do not attempt to carry out any major maintenance, repairs or adjustments to your machine which you are not authorised to carry out. This must be done by a suitably qualified and competent person!***

## **Do**

- Ensure the machine is on firm and level ground before attempting to carry out any operator maintenance
- Where practically possible, place signs on the machine to prevent accidental start up before carrying out your operator maintenance duties
- Carry out regular visual checks for any defects, damage, leaks
- Keep footplates and steps clean and free from mud, dirt, oil, ice and snow etc.
- Complete daily/weekly maintenance/defect sheets if your company issues them to you. All faults/defects should be reported immediately and corrected before the machine is used.

## **Don't**

- Attempt to carry out any operator maintenance on a machine with a hot engine
- Attempt to inspect or clean the machine with the engine running
- Attempt to refuel or top up lubricants and fluids while the engine is running
- Remove the hydraulic tank filler cap or cover plate while the engine is running, stop the engine and release the pressure
- Remove the radiator cap when the engine is hot
- Add coolant to a hot engine
- Overfill the engine oil or fuel tank.

## **5. Mobile Crane safety checklist**

**S**afety starts with you. Remember! You, as a Mobile Crane operator are the key to safety. You are legally responsible for your own safety and that of others working nearby.

**A**ccidents are unplanned, unwanted events, which can injure or kill people. Simple measures taken by your employer and yourself can reduce the risk of them happening.

**F**ines can be imposed on your employer and yourself for breaching Health and Safety Regulations. In some instances it can also lead to imprisonment.

**E**nsure you have established the weight of the load before attempting to lift it.

**L**ifting gear and accessories must not be used unless they are certified and suitably marked, identifying the safe working load.

**I**rrregular shaped loads should be treated with care. Their centre of gravity will need to be established to ensure safe and secure lifting.

**F**or 'free on wheels' duties and 'pick and carry' duties for Mobile Cranes, the ground must be level to within the requirements specified in the crane manufacturer's manual.

**T**yre pressures should be checked and correct prior to the lift, as specified in the crane manufacturer's operator's manual. Lifting with incorrect tyre pressure(s) will increase the risk of overturning.

**I**n addition to the compulsory check, see that the lifting gear you are responsible for is checked for defects each time it is put into service. Reject any lifting gear/accessories that are unsafe.

**N**ever attempt to exceed the rated lifting capacity of your Mobile Crane.

**G**ive warnings to all persons to keep clear of the load prior to the start of the lift and during the movement of the load. Use appropriate methods of communication. Use approved hand and radio signals and ensure they are agreed and understood by everybody involved. Ensure radio equipment to be used is fully charged at the start of every shift.

**O**bserve all warning/safety signs traffic regulations and other activities on site and on the public highway.

**P**ersonal protective equipment (PPE) should be worn at all times.

**E**nsure you check that the selected crane configuration is correct for the load you are lifting.

**R**ecord all accidents (no matter how slight), faulty/damaged plant and equipment and any dangerous incidents.

**A**lways allow for deflection of the Mobile Crane jib when the load is lifted – this can increase the load radius.

**T**ake care at all times to ensure the load does not swing out of radius. Rapid swinging causes load drift out, increasing radius and load on the Mobile Crane.

**I**nspect your Mobile Crane before use and at regular intervals to spot any defects, hazards or distractions – take nothing for granted.

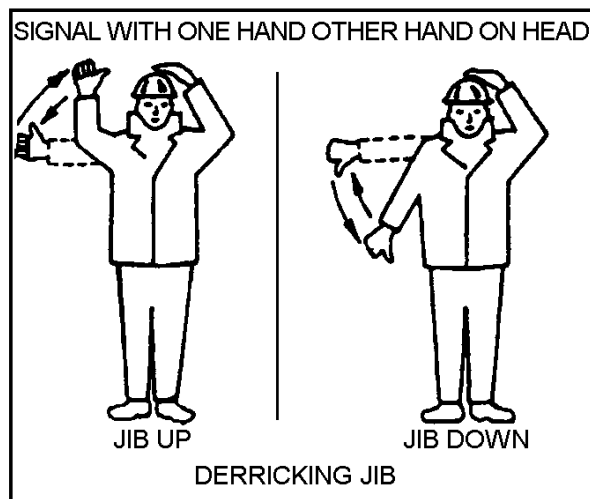
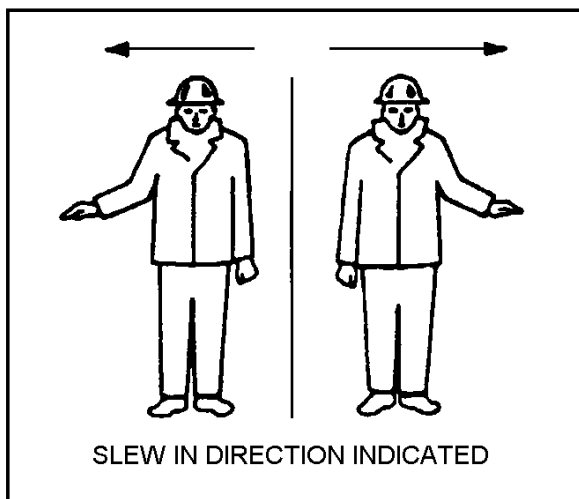
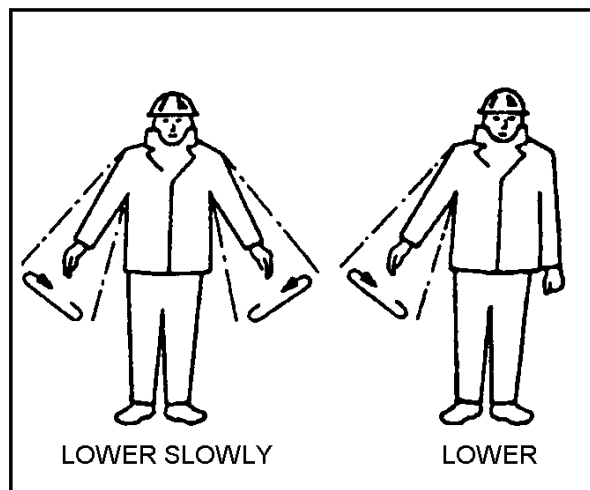
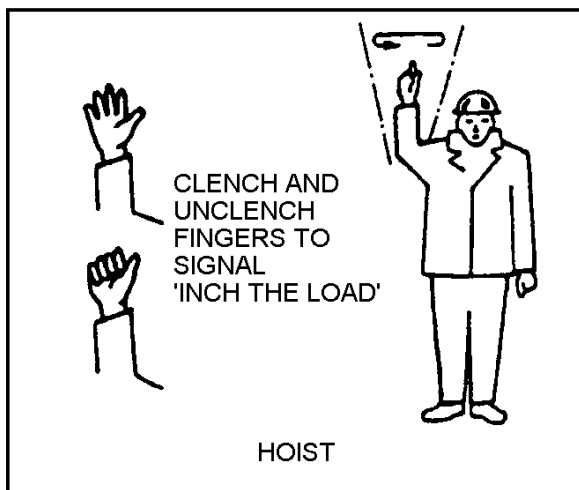
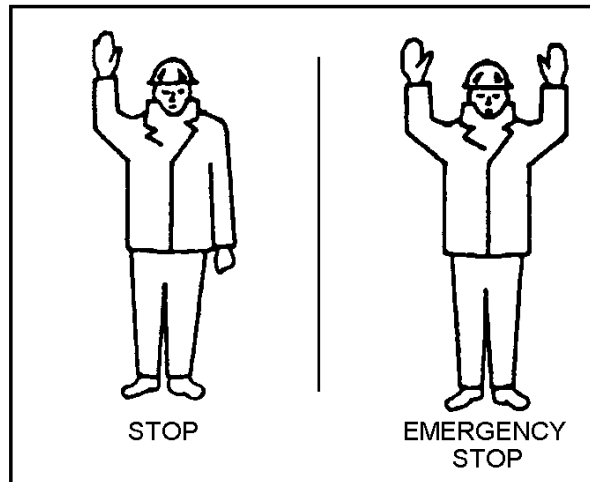
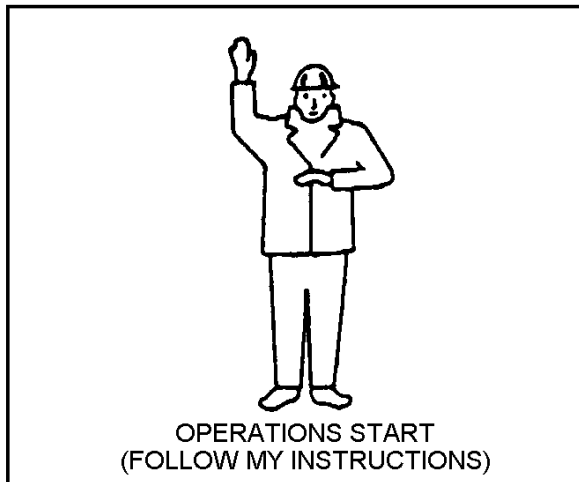
**O**utriggers should be extended and set in accordance with the crane manufacturer's operating manual.

**N**ever carry out a lifting operation if it is likely to endanger yourself and others (even if requested by work colleagues to try and cut corners on a job). If in any doubt seek guidance from your supervisor.

**S**hut down and secure your Mobile Crane in accordance with the manufacturer's recommendations and your company's procedures.

## APPENDIX A

### Recommended Hand Signals

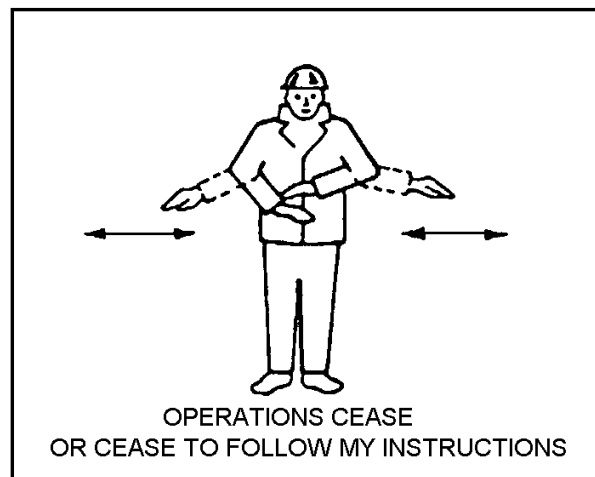
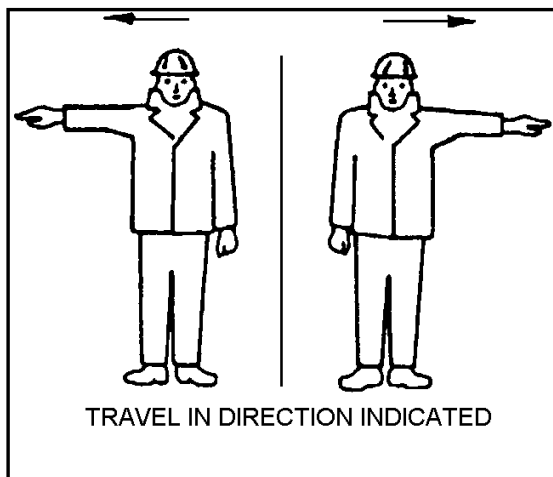
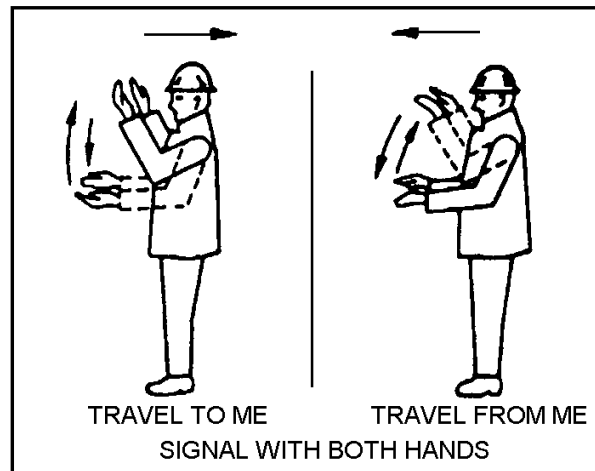
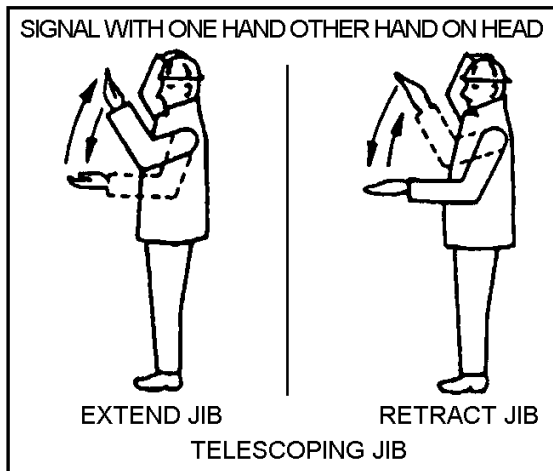


#### Note:

*The signaller should stand in a secure position where he/she can see the load and can be seen clearly by the driver and should face the driver if possible. Each signal should be distinct and clear.*

## APPENDIX A

### Recommended Hand Signals (continued)



## APPENDIX B Statutory Certification required for Lifting Appliances

- The Safety Health and Welfare at Work (General Applications) Regulations 2007 came into operation on 1<sup>st</sup> November 2007 and are quite clear on what items of plant require certification.
- Forms for recording Tests/Inspections are no longer prescribed. Any form can be used provided it contains the information specified in Part E of Schedule 1 of the Regulations

### Lifting Accessories

Regulation No	What is it	Who completes it	When is it required
57. [1] (a) (v)	Certificate of Test & Examination	Manufacturer / Supplier.	When supplied and while Lifting Gear is in use.
57. [1] (a) (v)	Report of Results of thorough examination of: <b>Chains, Ropes and Lifting Gear</b>	Competent Person.	Every six months.
57. [1] (i)	Report of annealing or appropriate heat treatment of: <b>Chains and Lifting Gear</b>	Competent Person.	When Heat Treated and at intervals as specified by the Competent Person.

#### . Notes:

- Lifting accessories include: chains, chain slings, rope slings (except a fibre rope sling), or similar gear, rings, links, hooks, plate clamps, shackles, swivels and spreader beams etc.
- A Certificate of Test and Examination is not required for a fibre rope or a fibre rope sling. Regulation 57 states “in the case of a fibre rope or a fibre rope sling, information from the manufacturer on its safe working load is available” and “it is marked in plain legible figures and letters with a Safe Working Load and a means of identification.”
- 

### Mobile Crane

Regulation No	What is Required	Who completes it	When is it required
52. [3]	Certificate of Test & Thorough Examination of: <b>Crane.</b>	Competent Person.	Before taken into use, every 4 Years or after substantial alteration /repair.
52. [3]	Report of Results of thorough examination of: <b>Lifting Appliances.</b>	Competent Person.	Every 12 months or after substantial alteration or repair.
43. [1] (f)	Report of results of weekly inspection of: <b>(a) Lifting Appliance.</b> <b>(b) Safe Load Indicator.</b>	Crane Operator.	Weekly.

#### Note:

*Certificates of test and examination of all Crane ropes, including derrick, suspension and hoist, should be available for inspection by the competent person. The regulations do not specifically require it but best practice does.*