



**GLOBAL WIND ORGANISATION**

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# SLINGER SIGNALLER

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## 1 LIST OF ABBREVIATIONS

GWO	Global Wind Organisation
WINDA	GWO training record database
PPE	Personal Protective Equipment
CoG	Centre of Gravity
SWL	Safe Working Load
WLL	Working Load Limit
EWL	Effective Working Length

## 2 TERMS AND DEFINITIONS

Shall	Verbal form used to indicate requirements strictly to be followed in order to conform to this training standard and from which no deviation is permitted
Should	Verbal form used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required
Centre of Gravity	The theoretical point in an object through which the force of gravity can be said to act
Working Load Limit	Maximum mass which an item of lifting equipment is designed to sustain in a straight lift
Safe Working Load	Maximum mass which an item of lifting equipment is designed to sustain. SWL is a function of the minimum breaking strength of the equipment divided by a safety factor.
Effective Working Length	Actual finished length of a sling, inclusive of fittings, from bearing point to bearing point
Dynamic Lift	A lifting operation where the load is moving relative to the crane
Static Lift	A lifting operation where the load is not moving relative to the crane
Human Factors	Human factors are an established science that uses many disciplines (like anatomy, physiology, physics and



	biomechanics) to understand how people perform under different circumstances
Crane	Machine for cyclic lifting and handling of loads suspended on hooks or other load handling devices, whether manufactured to an individual design, in series or from prefabricated components

### 3 CHANGE LOG

Amendment Date		Approved by date	
Version		Description of Changes	

### 4 SCOPE

The Global Wind Organisation (GWO) is an association of wind turbine owners and manufacturers with the aim of supporting an injury-free work environment in the wind industry. An objective of the GWO is to develop common industry training and best practice standards for health and safety as a vital and necessary way forward to reduce risks for personnel in the wind industry working on site and to reduce environmental risks around the globe.

This Standard has been developed in response to the demand for recognizable slinger signaller training in the industry. It has been prepared in cooperation with the members of GWO based on specific risk assessments, data from incident and accident statistics pertaining to the installation, service and maintenance of wind turbine generators and wind power plants involving slinger signalling.

This standard describes the requirements for slinger signaller training that are recommended by the members of the GWO.

The members of the GWO recognize trained persons as competent within slinger signalling in the wind industry and accept the trained person as possessing the required knowledge to stop an unsafe work situation where they as duty-holders are accountable for safety. Training is verified through the GWO database WINDA.

Where national legislation sets higher requirements for the specific training, the training provider shall incorporate these requirements into the training program.

Additional training may be required for company or country specific reasons.



This standard has been developed by the GWO training committee. Disputes and potential non-conformities must be brought to the attention of the GWO audit and compliance committee.

This standard has been approved by the GWO Steering Committee.

## 5 GENERAL REQUIREMENT TO GWO SLINGER SIGNALLER

Upon completion of the GWO Slinger Signaller module (SS), delegates will be aware of the risks and hazards encountered when working with Slinger Signalling within the wind industry. Furthermore, they will be able to control and mitigate those risks and hazards.

The GWO Slinger Signaller training module will also equip participants with the knowledge, skills and confidence to appropriately respond in the event of a hazardous situation and to increase their safety through proper use of personal protective equipment, emergency equipment, procedures and safe craftsmanship.

### 5.1 Target group

Personnel working within the wind industry conducting slinging techniques and signalling during simple lifting operations, meaning lifts conducted based on a lifting plan covering known hazards.

### 5.2 Aims and strategic objectives

Training in accordance with this standard will enable delegates to support and care for themselves and others while working with slinger signalling in the wind industry by possessing the required knowledge and skills to conduct assigned tasks safely and efficient.

### 5.3 Conformity with other Training

The GWO Slinger Signaller training standard sets out minimum requirements.

The modules, learning objectives, lessons and elements may be delivered in the order that fits best for the specific training situation.

Provided that the minimum requirements of this slinger signaller training standard are satisfied, the training provider may choose to incorporate delivery of other similar certified training.

### 5.4 Legal requirements

The training provider must identify whether national legislation sets additional requirements for slinger signalling training or prohibits delivery of certain



elements.

If so, the training provider must incorporate these identified requirements in the training.

## 5.5 Guidance on delivering lesson elements

Section 1.4 gives approximate duration of each of the lessons. The training provider may choose to deliver elements of the training according to other timetables, provided that the total duration is not reduced, and the duration of practical elements are not reduced in length. Theoretical elements should be delivered during the practical exercises whenever feasible.

## 5.6 Validity Period

The slinger signaller training is an enduring qualification and therefore a validity period does not apply to this training. This assumes that the delegate is actively working with slinger signalling tasks.

## 5.7 Delegate prerequisites for the Slinger Signaller module

All personnel participating in the Slinger Signaller training module shall be medically fit and capable of fully participating. Specifically, the delegates must be made aware of the risks and hazards related to completing this course.

Training providers shall have a procedure that requires delegates to sign a statement stating that they are medically fit to participate in the training course and that they do not suffer from any medical illness that will prevent them from fully participating in the training course or subject them to hazard or risk, or are under the influence of any impeding substances like narcotics or alcohol. The Annex 2: Medical Self-Assessment Form shall be used if no other equivalent procedure is in place.

Delegates' signatures testifying to their medical fitness shall be collected prior to the start of the GWO Slinger Signaller module.

Delegates must have created a personal delegate profile in WINDA and provide their own WINDA ID prior to completing the GWO Slinger Signaller training.

## 5.8 Physical demands

The GWO Slinger Signaller training module may potentially be physically demanding.

If there is any doubt regarding the medical fitness of any delegate, the training provider shall stop training with the delegate and seek a physician's advice.



Note: Practical exercises shall be designed and delivered solely to meet this standard and shall not place any physical or mental demands on the delegates other than those required to meet this standard.

## 6 GENERAL RESOURCES REQUIRED TO DELIVER SLINGER SIGNALLER MODULE

The training provider shall ensure that the staff, facilities and equipment are in place to support the training of the delegates.

### 6.1 Staff

Training staff shall possess appropriate qualifications and experience to ensure that all training and supportive activities are carried out in accordance with current legislation and the current requirements outlined on the CRITERIA FOR TRAINING PROVIDERS OFFERING GWO TRAINING document.

The Instructor must:

- 1) Hold valid certificates for GWO BST/BSTR First Aid and GWO BST/BSTR Manual Handling
- 2) Be able to demonstrate knowledge and practical skills in slinger signalling methods, techniques and processes comparable to those executed by the delegates during the slinger signalling module
- 3) Act as first responder in the case of an accident

Supporting staff:

- 1) A person with a current valid first aid qualifications shall be present during all practical training. This can be the instructor or an assigned emergency response team

### 6.2 Facilities and Equipment

The full range of facilities and equipment relevant to the modules being delivered shall be available during the training. The following facilities criteria shall be adhered to. Turbine manufacturer specifics may limit the application of the training requiring additional methods, techniques and equipment.

### 6.3 Theory training facilities

Facilities shall be designed to enable each Delegate to see, hear and fully participate in the taught subject matter.



## 6.4 Practical training facilities

All facilities shall be maintained and where appropriate, inspected and tested in accordance with current national legislation and manufacturers' specification. It is recommended that the facilities reach European standards.

Risk assessments shall be conducted and documented for all training facilities. The training provider shall hold the required permits to operate the facilities.

The learning process is facilitated by comparable elements, comparing the training environment and the delegates' working environment. Comparable elements enhance the application of what is learned. The practical training facilities and the training environment are therefore expected to incorporate as many comparable elements to a real wind turbine working environment as is reasonably practicable.

The practical training facility should enable each delegate to individually and/or as part of a team, see, hear and practice the taught subject matter in such a way that it resembles the working practices in a real wind turbine environment.

The above are the minimum requirements, if national legislation and regulation supersedes this, then they must be followed.

## 6.5 Training Equipment

The equipment required for training as listed in Annex 5 must be available and must fulfil national legal requirements as listed in table A5-1 in annex 5 where applicable.

# 7 UNDERSTANDING GWO LEARNING OBJECTIVES

The described learning objectives (expected learning outcome) are the foundation of the course contents and what the delegate performance assessment must be based upon.

Traditionally learning objectives are prepared within three different domains of learning – knowledge, skills and attitude. A learning objective describes the expected learning outcome on completion of a module or a course, within one or more learning domains.

If a learning objective is related to more than one domain of learning, e.g. knowledge and skills, one learning objective per learning domain is often prepared – to enable a better understanding of the learning objective.

The training provider may apply teaching methods (didactics) that are appropriate to the course participants prior training, education and cultural backgrounds but should always aim to provide course participants ample possibility to perform hands-on demonstrations and learning reflection.





## 7.1 Taxonomy

To formulate a measurable learning objective, taxonomy is used to describe the level of expected learning outcome within a learning domain.

As an example, belonging to the learning domain of knowledge, to have a delegate name or recognize something, as opposed to have them explain it in their own words, or even apply or demonstrate what they have learned – describes different performance levels, i.e. different taxonomy levels.

Different taxonomies are associated with different learning domains, for instance:

- 1) Knowledge: Bloom's "cognitive taxonomy"
  - a) Intellectual knowledge, mental skills and procedures
- 2) Skills: Simpson's "psychomotor taxonomy"
  - a) Physical skills, cognitive controlled and observable
- 3) Attitude: Krathwohl's "affective taxonomy"
  - a) Attitude and feelings to the learning

When selecting a suitable taxonomy level, an action verb expresses the expected behavior of the delegate, thus describing the taxonomy level of a learning objective.

Action verbs are usually highlighted in bold in this standard. The table below presents the three learning domains within taxonomy level 1-3, provided with associated action verbs applicable in the learning objective wording, defining the taxonomy level. In the Slinger Signaller standard, the learning objectives are in general described as level 2 or 3.

	Knowledge	Skills	Attitude
<b>3</b>	<b>Application / Applying</b> To use in a new situation. Solving problems by applying acquired knowledge, facts, techniques and rules in a different way. Applying a procedure to a familiar or unfamiliar task. Using a manual to calculate and operate. <b>Action verbs</b> Apply, Change, Choose, Compute, Modify, Operate,	<b>Guided response</b> Follows instructions to build a model. Using a tool after observing an expert demonstrate how to use it. Be able to demonstrate an activity to other learners. Can complete the steps involved in the procedure as directed. <b>Action verbs</b> Accomplish, Achieve, Calibrate, Complete, Control,	<b>Value</b> Demonstrates belief in the company's described process. Shows the ability to solve problems. Informs management on matters that one feels strongly about. Decide worth and relevance of ideas and tasks. <b>Action verbs</b>



	Practice, Prepare, Schedule, Solve, Write.	Demonstrate, Perform, Refine, Show.	Argue, Challenge, Confront, Complete, Debate, Criticize, Justify, Join, Propose.
<b>2</b>	<b>Comprehension / Understanding</b>  Construct a meaning from instructional messages, including oral, written and graphic communication.  Demonstrating basic understanding of facts and ideas.  Explain in your own words the steps of performing a complex task.  <b>Action verbs</b> Classify, Distinguish, Estimate, Explain, Express, Give, Illustrate, Indicate, Locate, Predict, Summarize, Translate.	<b>Set</b>  Awareness or knowledge of the ability needed to use the skill.  Carry out tasks from verbal or written instructions.  Showing eagerness to assemble components to complete a task.  Knows and acts upon a sequence of steps in a process.  <b>Action verbs</b> Access, Build, Complete, Conduct, Execute, Implement, Operate, Perform, Recreate.	<b>Respond</b>  Completing work assignments with high respect to the agreement.  Participating in team problem solving activities.  Question new ideas and concepts in order to fully understand them.  Participate actively and respectfully in discussions.  Showing enthusiasm.  <b>Action verbs</b> Assist, Contribute, Discuss, Present, Question, Report, Respond, Tell, Write.
<b>1</b>	<b>Knowledge / Remembering</b>  Memory of facts, terminology, rules, sequences, procedures, etc.  Locating knowledge in long-term memory and retrieving relevant knowledge from long-term memory.  <b>Action verbs</b> Arrange, Define, Describe, Find, Identify, List, Name, Outline, Recognize, Relate, Recall, Retrieve.	<b>Perception</b>  Watch instructor and repeat action, process or activity.  Recognizing sounds or pictures that indicate certain functionalities.  Estimate the event of a certain function and be prepared for it.  <b>Action verbs</b> Attempt, Copy, Duplicate, Follow, Organize, Repeat, Sketch, Replicate, Reproduce.	<b>Receive</b>  Listening to discussions of controversial issues with an open mind.  Respecting the rights of others.  Listen to others and remember their opinions.  Be positive and creative to what is being taught.  <b>Action verbs</b> Ask, be open to, Concentrate, Discuss, Focus, Follow, Listen, Reply, Take part.

Table 7-1 - Taxonomy used by GWO

**Note:** Higher taxonomy levels exist.



## 8 ADMINISTRATION AND CERTIFICATION OF MODULES

### 8.1 Administrative arrangements

Appropriate for the enrolment and certification of Delegates and all aspects of the delivery of training shall be in accordance with this Standard.

### 8.2 Delegate performance assessment

Delegates will be assessed by means of direct observation and supplementary oral questions where appropriate (formative evaluation). Furthermore, the delegate will be subjected to written phase tests after the theory elements, and again after the close of the training course. (Summative evaluation)

The written tests can consist of multiple choice or descriptive answer questions and shall be set at the same taxonomy level as the objective that they are testing. There shall be at least one question for each lesson in the module.

The written tests shall be conducted in accordance with the following criteria:

- 1) There shall be an instructor present in the room where written tests are being conducted for the entire duration of the written test
- 2) The delegates shall not communicate with each other during the test
- 3) The delegates shall not communicate with any persons via email, telephone, skype (or similar) or social media during the test
- 4) The delegates shall be allowed to use training material, handouts and their own notes during the test
- 5) Where a delegate does not understand the meaning of a question or a multiple-choice option, the training staff shall be allowed to help the delegate in understanding the meaning of the question or the multiple-choice options. The training staff shall not give the delegate the correct answers to any test questions
- 6) There shall be a time limit of 1½ minutes per question

The written test questions cannot be used during the training in such a way that the delegates could recognise that they will be test questions.

Each delegate must answer at least 70% of written test questions correctly to pass the test.

If a Delegate does not reach the passing criteria in written or observational tests, then the instructor shall discuss this with the delegate to find out the reason for not reaching the passing criteria. If the reason is due to a misunderstanding of a question or due to language difficulties, then the



instructor can mark a question as correct provided that the delegate is able to demonstrate understanding of the lesson element being tested. This must be documented by the instructor and stored with the tests, control measures and evaluations for the course.

Training Providers shall have a documented procedure in place for dealing with Delegates not meeting the stated learning objectives.

Throughout the entire GWO Slinger Signaller course the instructor will use the delegate assessment form (see annex 2) to evaluate the delegates knowledge and skills, with a high focus on evaluating the delegate's safety awareness.

The instructor shall keep a delegate assessment form (or adaptation) for each delegate until the completion / evaluation of the Slinger Signalling training module.

The delegate assessment form (or adaptation) is a final evaluation tool for the instructors to assess delegates during practical elements. It allows measurement of the number of violations regarding safety, competency or attitude.

The delegate assessment form shall be used as a progressive evaluation tool to discuss the performance of a delegate in guiding them to success. It also serves as supporting documentation if a delegate passes or fails the module. If a delegate fails to meet the demands of the Slinger Signalling training module, they can attend a new Slinger Signalling training in accordance with the contractual agreement when ordering the training course. The re-entry point is dictated by the stage where the delegate stepped out of the course or where the instructor deems constructive.

Training providers may adapt the delegate assessment form to other media. Training providers must have a documented procedure in place for dealing with delegates not meeting the stated learning outcomes.

### 8.3 Requirement to upload training record in WINDA

Training providers are responsible for uploading a record of training to WINDA, the GWO online database of training records. This must be done as soon as possible and no later than 10 working days after completion of the training program.

Each record shall contain the following:

- 1) Delegate's WINDA ID
- 2) Course code
- 3) Course completion date

Course code:



Slinger Signaller: SLS

## 8.4 Training Providers Own Records and Certificates issue

The Training Provider shall, in accordance with the GWO criteria for training providers, maintain their own records of delegates.

Upon request from the GWO or any of the members of the GWO, the training provider shall be able to verify the training and competence records of any specific personnel either attending a course and/or performing training of a course by name and nationality.

Training providers may issue other additional proof of training, e.g. as paper certificate or plastic cards. If the training provider chooses to do so, it is recommended (not a requirement) to include the delegate WINDA ID.

## 9 SLINGER SIGNALLER MODULE

### 9.1 Aims and objectives

The aim of the GWO Slinger Signaller training module is to enable the delegate to support and care for themselves and others while working with slinger signalling in the wind industry by possessing the required knowledge and skills to conduct assigned tasks safely and efficient.

Upon successful completion of the GWO Slinger Signaller training course, the delegate will be able to work within the wind industry conducting slinging techniques and signalling during simple lifting operations, meaning lifts conducted based on a lifting plan or covering known hazards.

The Slinger signaller will have the knowledge, skills and attitude to be able to:

- 1) Attaching and detaching the load to and from the crane lifting attachment
- 2) Initiating and directing the safe movement of the crane, including multiple slinger signallers during limited or blind lifts
- 3) Adhering to their role and responsibilities during the lift
- 4) Conducting visual pre and post inspection on lifting accessories and load
- 5) Handling of lifting accessories
- 6) Ensuring safe lift-off and lay down of the load
- 7) Slinging various types of load, based on weight, centre of gravity, shape and size



- 8) Carrying out generic routine lifts in accordance with the lift plan
- 9) Complying with instruction/procedures set up by the employer to manage lifting
- 10) Ensuring that equipment is properly used, maintained and defects reported

## 9.2 Duration of the Slinger Signaller module

The optimal total time for completing the Slinger Signaller training module is estimated to be 16 hours, excluding meals and breaks.

If this training is part of a program of longer duration, the total contact time per day must not exceed 8 hours and the total training day must not exceed 10 hours.

The total training day includes contact time, refreshment, meal breaks and travel between training sites where applicable.

It shall be ensured that everyone is given the opportunity to share their opinions and experiences, where possible. Delegates with prior experience shall be able to share their experiences related to Slinger Signaller in a way that is constructive for the entire class.

## 9.3 Slinger Signaller module Trainer to Delegate Ratio

The ratio shown for theory sessions indicates the maximum number of delegates that can attend the course.

The ratio shown for practical sessions indicates the maximum number of delegates to be supervised by one instructor during each activity.

Module	Session	Trainer – Delegate Ratio
Slinger Signaller	Theory	1:12
	Practical	1:6

Table 9-2 - GWO Slinger / Signaller module trainer to delegate ratio

**Note:** During the practical elements the instructor cannot be the crane operator while instructing

## 9.4 Slinger Signaller module Timetable

The training provider may choose the order in which to deliver the elements of this Slinger Signaller training module, provided that the order of delivery enables the delegate to safely execute all tasks and exercises given to them,



and that all learning objectives are met.

The approximate duration of each lesson is given in the tables below. The training provider may choose to deliver elements of the training according to other timetables, provided that the total duration is not reduced, and practical elements are not reduced in length. Theoretical elements should be delivered during the practical exercises whenever feasible.

Lesson		Element	Approximate Duration (minutes)
1	General Safety	1 Introduction	15
		2 Human performance	15
		3 Personal protective equipment	15
		TOTAL	45
2	Theory	4 Role and basic Signals	15
		5 Legislation	10
		6 Lifting equipment types	15
		7 Accessories	30
		8 Dynamic or static	15
		9 Generic routine lifting plans	30
		10 Risk assessment	30
		11 Environmental impact	10
		TOTAL	155



3	Practical	12 Manual handling	15
		13 Slings	60
		14 Shackles	30
		15 Lifting bags	15
		16 Load attachment points	30
		17 Accessory storage	15
		18 Pre/post use check	30
		19 Quarantine	15
		20 Crane functions	30
		21 Load orientation devices	30
		22 Lifting angles	30
		23 Centre of gravity	25
		24 Lifting zones	20
		25 Roles and responsibilities	15
		26 Toolbox talk	10
		27 Hand signals	170
		28 Slinging techniques	140
		29 Summary	30
		30 Evaluation	30
		TOTAL	740
		GRAND TOTAL	940

Table 9-3 - GWO Slinger / Signaller module timetable

## 9.5 Detailed description of the slinger / Signaller module

### LESSON 1 - GENERAL SAFETY

45 min.

The aim of the lesson is to give the delegate the knowledge, skills and attitude regarding general safety to be able to participate in the training safely.





To successfully complete this lesson the delegate shall be able to:

- 1) Have knowledge of what is expected of them throughout the module
- 2) Be able to identify the relevant human factors and explain the implications thereof
- 3) Be able to choose the correct PPE for the task and demonstrate how to use it

#### ELEMENT 1.1 - SAFETY INSTRUCTIONS AND EMERGENCY PROCEDURES

The Instructor shall **explain**:

- 1.1.1 Safety instructions according to internal procedures
- 1.1.2 Emergency procedures and emergency exits in the areas where the delegates can be expected to be located during the course
- 1.1.3 Site specific chemical safety rules and instructions

#### ELEMENT 1.2 - FACILITIES

The Instructor shall **explain**:

- 1.2.1 General description of the facilities at the training location (Administration, dining area, restrooms, toilets, etc.)

#### ELEMENT 1.3 - INTRODUCTION

The Instructor shall **give**:

- 1.3.1 A short introduction of themselves, including their backgrounds as instructors

Delegates shall give:

- 1.3.2 A short introduction of themselves, including job function and expected primary geographic work location

The Instructor shall **explain**:

- 1.3.3 The programme of the slinger signalling training module, including breaks and mealtimes

#### ELEMENT 1.4 - SCOPE AND MAIN LEARNING OBJECTIVES



The Instructor shall **explain**:

- 1.4.1 The scope and main objectives of the slinger signalling training module

#### ELEMENT 1.5 - ONGOING ASSESSMENTS (DELEGATE ASSESSMENT FORM)

The Instructor shall **explain**:

- 1.5.1 The reasons for the ongoing assessment
- 1.5.2 The layout of the GWO delegate assessment form and how it will be used

#### ELEMENT 1.6 - MOTIVATION

The Instructor shall **explain**:

- 1.6.1 The importance of personal involvement in the course
- 1.6.2 The definition of and the need for Slinger Signaller

#### ELEMENT 1.7 - HUMAN PERFORMANCE

Training Staff shall:

- 1.7.1 Explain the role that human error has in accidents during lifting operations
- 1.7.2 Lead a discussion about how physical limitations can influence human performance and how this affects the safety of lifting operations in terms of instructions given and / or received, by considering:
  - a. Vision
  - b. Hearing
  - c. Attention and perception
- 1.7.3 Lead a discussion about how peer pressure and group behaviour can influence human performance and how this can affect the safety of lifting operations
- 1.7.4 Lead a discussion about how the work environment can affect human performance and how this can affect the safety of lifting operations, by considering factors like:
  - a. Weather conditions



- b. Weather delays
- c. Noise levels
- d. Site layout and housekeeping

Explain how these factors can make an individual prone to making mistakes and taking shortcuts

- 1.7.5 Lead a discussion about how individual circumstances can affect human performance and how this can affect the safety of lifting operations, by considering factors like:
- a. Fitness and health
  - b. Domestic and work-related stress
  - c. Workload (both overload and underload)
  - d. Fatigue
  - e. Time pressure and deadlines
  - f. Alcohol, medication and substance abuse
- 1.7.6 Lead a discussion about the role of an individual in improving human performance and how this can improve the safety of lifting operations

## ELEMENT 1.8 - PERSONAL PROTECTION EQUIPMENT

Training Staff shall:

- 1.8.1 Explain the need for using PPE while conducting slinger signalling tasks
- 1.8.2 Describe and demonstrate the relevant PPE equipment including; helmet, shoes, safety glasses, gloves, high visibility clothing

Delegates shall:

- 1.8.3 Discuss what types of PPE is required in their company, and the reasons for it
- 1.8.4 Discuss where one can find documentation for which PPE to use while slinger signalling

## LESSON 2 - GENERAL THEORY

155 min.

The aim of the lesson is to give the delegate the needed theoretical



knowledge and attitude foundation to conduct slinger signaller tasks safely

To successfully complete this lesson the delegate shall be able to:

- 1) Explain the slinger signaller role including basic signals
- 2) Describe where to find the applicable legislation
- 3) Describe the different lifting equipment types and their usage
- 4) Identify the correct accessories according to the applicable load
- 5) Identify whether a lift is dynamic or static
- 6) Understand and follow generic routine lift plans
- 7) Understand the relevance of a risk assessment
- 8) Understand the environmental impact on the planning and execution

## ELEMENT 2.1 - ROLE AND BASIC SIGNALS

Training Staff shall:

- 2.1.1 Describe the slinger signaller's role towards the immediate surroundings, including crane crew and spotters - covering individual responsibilities
- 2.1.2 Explain how people involved in basic lifting operations must communicate in a clear and concise manner
- 2.1.3 Demonstrate basic slinger signalling signals, including ensuring that hand and radio communication are understood by all
- 2.1.4 Describe the signal package (See annex 3) used throughout the training

Delegates shall:

- 2.1.5 Demonstrate the ability to use all aspects of provided signals package during practical exercises, covering both giving and receiving signals.

## ELEMENT 2.2 - LEGISLATION

Training Staff shall:

- 2.2.1 Describe the duty holder concept regarding legislation



- 2.2.2 Explain the need to have knowledge of the current national and regional legislation and best practice before conducting slinger signalling operations

Delegates shall:

- 2.2.3 Discuss where information about the current national and regional legislation and best practice can be found

## ELEMENT 2.3 - LIFTING EQUIPMENT TYPES

Training Staff shall:

- 2.3.1 Describe the relevant types of cranes/lift devices and their main characteristics and usage (on/offshore), covering as a minimum; hoists/winches, telescopic/folding/fixed boom cranes, mobile crane, transition piece crane and overhead crane
- 2.3.2 Explain focus areas when interacting with the different types of crane as a slinger signaller including positioning, communication and movement

Delegates shall:

- 2.3.3 Demonstrate a basic understanding of the different cranes/lift devices
- 2.3.4 Discuss the implications of the cranes/lift devices size and characteristics when signalling them

## ELEMENT 2.4 - ACCESSORIES

Training Staff shall:

- 2.4.1 Describe the different types of accessories and their main characteristics including working loads limits (WLL) and safe working load (SWL) and usage, covering as a minimum; chain slings (shortening clutches), synthetic slings, wire slings, screw pin shackles and safety bolt, snatch blocks, turn buckles, threaded connections and lifting beams and lifting bags
- 2.4.2 Explain the importance of using specified accessories and how to identify these for the specific task according to the lifting plan
- 2.4.3 Explain how to use the selected accessories correctly including; sling configuration (angular separation) protection of slings (sharp edges etc.)



- 2.4.4 Define SWL and WLL
- 2.4.5 Explain how to calculate the SWL according to the WLL by considering sling angles, sling bites, environment etc.
- 2.4.6 Describe the different label/tags and their information used on accessories and their origin
- 2.4.7 Explain how the slinger signaller must react if the equipment is not labelled/tagged correctly

Delegates shall:

- 2.4.8 Demonstrate the ability to identify correctly and incorrectly labelled accessories
- 2.4.9 Demonstrate the ability to do simple SWL calculations based on the WLL
- 2.4.10 Discuss the implications of using equipment that is not matched

## ELEMENT 2.5 - DYNAMIC OR STATIC

Training Staff shall:

- 2.5.1 Explain the characteristics of a dynamic lift and static lift in on/offshore environments
- 2.5.2 Describe additional precautions that the slinger signaller must take during dynamic lifting operations

Delegates shall:

- 2.5.3 Discuss different dynamic lifting operations and potential hazards for the slinger signaller

## ELEMENT 2.6 - GENERIC ROUTINE LIFT PLANS

Training Staff shall:

- 2.6.1 Describe the reason for having a detailed lift plan
- 2.6.2 Explain the principles and contents of a generic lift plan
- 2.6.3 Explain which information must be consulted by the slinger signaller before commencing work e.g. weight of load, accessories required, equipment positioning, drawing, load travel plan, means of communication, preparation e.g. pre-lift briefing and numbers of persons required and their roles and responsibilities



Delegates shall:

- 2.6.4 Discuss what information is important when preparing carrying out slinger signaller tasks, and the potential hazards and risks of not seeking that information
- 2.6.5 Demonstrate the ability to locate relevant information from a generic lift plan

## ELEMENT 2.7 - RISK ASSESSMENT

Training Staff shall:

- 2.7.1 Explain the purpose of the risk assessment
- 2.7.2 Describe the basic outline of a risk assessment
- 2.7.3 Describe where a risk assessment is typically found
- 2.7.4 Explain what information in the risk assessment must be consulted before commencing slinger signaller tasks e.g. control measure per risk

Delegates shall:

- 2.7.5 Demonstrate the ability to understand control measure per risk
- 2.7.6 Describe the outline of a risk assessment
- 2.7.7 Discuss the consequences of not seeking out the risk assessment before commencing slinger signaller tasks

## ELEMENT 2.8 - ENVIRONMENTAL IMPACT

Training Staff shall:

- 2.8.1 Explain the motivation for focusing on environmental impact covering both the impact of the environment on the operation and the operations impact on the environment.
- 2.8.2 Explain how environmental conditions impacts slinger signaller tasks
- 2.8.3 Explain how the slinger signaller must take an active role in minimizing the environmental impact

Delegates shall:

- 2.8.4 Discuss how the slinger signaller can assist in minimizing the environmental impact of lifting operations by having awareness of



the topic e.g. heeding a warning if unwanted or hazardous situations are emerging

## LESSON 3 - PRACTICAL

740 min.

The aim of the lesson is to give the delegate the knowledge, skills and attitude to be able to conduct slinger signaller tasks safely and efficiently.

To successfully complete this lesson the delegates shall be able to:

- 1) Demonstrate basic manual handling understanding and techniques
- 2) Demonstrate correct selection and usage of sling types
- 3) Demonstrate correct selection and usage of shackle types
- 4) Demonstrate correct selection and usage of lifting bag types
- 5) Demonstrate correct selection and usage of load attachment point types
- 6) Demonstrate storing accessories correctly and safely
- 7) Demonstrate identifying when accessories must be put into quarantine
- 8) Be able to conduct pre/post use checks correctly
- 9) Be able to describe the core components of lifting equipment
- 10) Be capable of handling common load orientation devices
- 11) Be capable of demonstrating an understanding of the lifting angles
- 12) Be capable of demonstrating an understanding of CoG
- 13) Be capable identifying hazards in a lifting zone and working accordingly
- 14) Be able to explain their role & responsibilities as a slinger signaller
- 15) Be able to carry out the point of work risk assessment
- 16) Be capable of demonstrate correct hand signals and slinging techniques
- 17) Be able to assess which technique is to be used and apply it accordingly

### ELEMENT 3.1 - MANUAL HANDLING

Training Staff shall:





- 3.1.1 Describe slinger signaller tasks where manual handling is relevant
- 3.1.2 Explain manual handling risks and mitigations when performing slinger signaller tasks, including lifting heavy equipment, using correct lifting technique, avoid overstretching, use teamwork etc and use lifting aids.
- 3.1.3 Explain how a slinger signaller should handle equipment manually according to the equipment characteristics and potential hazards and risks

Delegates shall:

- 3.1.4 Discuss what should and should not be lifted manually
- 3.1.5 Discuss how to manually lift different types of equipment and what to be mindful of during the lifts
- 3.1.6 Demonstrate correct lifting technique

## ELEMENT 3.2 - SLINGS

Training Staff shall:

- 3.2.1 Explain what type of slings are compatible with different types of loads
- 3.2.2 Explain the match between slings and hook e.g. ramshorn, single hook, safety hooks, C hook using practical examples
- 3.2.3 Explain and demonstrate the importance of sling protection against sharp edges and capacity reduction do to this
- 3.2.4 Demonstrate how to use chain slings (shortening clutches), synthetic slings and wire slings to correctly attach the load to a crane hook covering both endless and web types while focusing on utilization and potential damage to the accessories and load
- 3.2.5 Demonstrate different slinging techniques covering capability and limitations including; straight, basket hitch, choke hitch, multiple slings, spreader beams configuration

Delegates shall:

- 3.2.6 Explain the different slinging techniques
- 3.2.7 Demonstrate the ability to identify different types of hooks, loads and apply the correct sling accordingly
- 3.2.8 Demonstrate all slinging techniques and correct use of sling protection where required



- 3.2.9 Discuss the experiences with using slings

### ELEMENT 3.3 - SHACKLES

Training Staff shall:

- 3.3.1 Explain what type of shackles e.g. bow and D are compatible with different types of slings e.g. wire slings, synthetic slings, chain slings and load using practical examples
- 3.3.2 Demonstrate how to use shackles to correctly attach the sling to the load covering both screw pins and safety bolt variants
- 3.3.3 Explain the consequences of incorrect usage of shackles

Delegates shall:

- 3.3.4 Demonstrate the ability to use the shackles correctly covering both screw pin safety bolts variants

### ELEMENT 3.4 - LIFTING BAGS

Training staff shall:

- 3.4.1 Explain the importance of utilizing the lifting bags according to intended use and limitations
- 3.4.2 Explain how to use a lifting bag including how to check it, store it, fill it, and attach it to the hook and/or sling
- 3.4.3 Demonstrate how to pack and hook single and multiple lifting bags to different hook and sling types while emphasizing the equipment limitations

Delegates shall:

- 3.4.4 Demonstrate the ability to correctly check, store, fill and attach lifting bags to hook and sling
- 3.4.5 Discuss what can go wrong if failing to adhere to equipment limitations and intended use

### ELEMENT 3.5 - LOAD ATTACHMENT POINT TYPES

Training staff shall:



- 3.5.1 Explain the hazards and risks when working with load attachment points
- 3.5.2 Explain the different types of load attachment including equipment specific lifting points like:
  - a. eyebolts and eye nuts,
  - b. trunnions,
  - c. swivel eyebolts,
  - d. camlocks,
  - e. permanent lifting lugs,
  - f. covering characteristics and usage
- 3.5.3 Demonstrate the use of load attachment points covering the ones mentioned in this element

The delegate shall:

- 3.5.4 Demonstrate the ability to use load attachments points
- 3.5.5 Discuss how to avoid hazards and risks while working with load attachment points

#### ELEMENT 3.6 - ACCESSORY STORAGE

Training staff shall:

- 3.6.1 Show examples of and explain how to store lifting accessories correctly and potential consequences of failing to do so

The delegate shall:

- 3.6.2 Demonstrate the ability to correctly store accessories following practical exercises



### ELEMENT 3.7 - PRE/POST USE CHECK

Training staff shall:

- 3.7.1 Explain the importance of conducting pre-use and post-use check
- 3.7.2 Explain the different indicators that must be checked during pre-and post-use checks, including certification labels, physical damage and contamination
- 3.7.3 Demonstrate examples of equipment that should not pass pre-use and post-use check

The delegate shall:

- 3.7.4 Demonstrate how to conduct pre-use and post-use check of equipment and accessories
- 3.7.5 Discuss how one can avoid that certificates/labels are subjected to wear and tear

### ELEMENT 3.8 - QUARANTINE

Training staff shall:

- 3.8.1 Explain the reasons for quarantining accessories and equipment
- 3.8.2 Show examples of accessories which shows signs of overloading and therefore must be put into quarantine

The delegate shall:

- 3.8.3 Demonstrate the ability to identify accessories requiring quarantine

### ELEMENT 3.9 - CRANE FUNCTIONS

Training staff shall:

- 3.9.1 Explain the hazards and risks involved in interacting with a crane
- 3.9.2 Demonstrate the core functions of a crane using an operational crane

The delegate shall:

- 3.9.3 Demonstrate the ability to interact safely with an operating crane



### ELEMENT 3.10 - LOAD ORIENTATION DEVICES

Training staff shall:

- 3.10.1 Explain the hazards and risks when working with load orientation devices
- 3.10.2 Explain the purpose and safe use of load orientation devices
- 3.10.3 Demonstrate load orientation devices, including the following:
  - a. taglines with and without winches, covering positioning and handling

The delegate shall:

- 3.10.4 Demonstrate the ability to position load orientation devices correctly and safely
- 3.10.5 Discuss how to collaborate efficiently when using load orientation devices

### ELEMENT 3.11 - LIFTING ANGLES

Training staff shall:

- 3.11.1 Explain the importance of ensuring that the correct lifting angles are being used throughout the slinger signaller tasks
- 3.11.2 Explain the function of a load chart and how to use it
- 3.11.3 Explain how to calculate sling tension based on lifting angles
- 3.11.4 Demonstrate correct use of lifting angles by lifting a simple load at various degrees

The delegate shall:

- 3.11.5 Demonstrate an ability to calculate the applied sling tension based on the lifting angles

### ELEMENT 3.12 - CENTRE OF GRAVITY

Training staff shall:

- 3.12.1 Explain the principles of centre of gravity
- 3.12.2 Describe the importance of verifying the centre of gravity is before commencing the lift



### 3.12.3 Demonstrate how to identify the centre of gravity

The delegate shall:

- 3.12.4 Explain the principle of centre of gravity in relation to suspended loads
- 3.12.5 Explain how the centre of gravity affects the slinging of a load
- 3.12.6 Discuss factors that may challenge centre of gravity e.g. unsecured cargo (liquid) and how to mitigate

## ELEMENT 3.13 - LIFTING ZONES

Training staff shall:

- 3.13.1 Explain the hazards and risks in lifting zones
- 3.13.2 Describe environmental factors relevant for lifting zones e.g. weather, darkness etc.
- 3.13.3 Explain the core elements of a lifting zone including; lifting area, landing area, lifting route while focusing on the relevant obstacles and focus areas e.g. communication and teamwork
- 3.13.4 Demonstrate how to handle an obstacle while signalling including both visible and non-visible scenarios for the crane operator

The delegate shall:

- 3.13.5 Demonstrate the ability to direct the crane to navigate the load around obstacles
- 3.13.6 Discuss how obstacles are navigated using more than one slinger signaller

## ELEMENT 3.14 - ROLES AND RESPONSIBILITIES

Training staff shall:

- 3.14.1 Explain the hazards and risks of not having a clear understanding of roles and responsibilities when slinging and signalling
- 3.14.2 Recap on the different roles relevant for the slinger signaller
- 3.14.3 Describe where a description of roles and responsibilities can be found (lifting plan)
- 3.14.4 Describe the importance of ensuring alignment between operator, contractor and external stakeholders when applicable



- 3.14.5 Explain the means of alignment, e.g. toolbox talk
- 3.14.6 Provide a practical demonstration of alignment e.g. lift plan, signals, radio communication etc.

The delegate shall:

- 3.14.7 Demonstrate an understanding of roles and responsibilities by explaining how to align and interact with other roles
- 3.14.8 Discuss factors that can challenge roles and responsibilities e.g. hand over, language, equipment knowledge, lack of toolbox talks etc.

#### ELEMENT 3.15 - TOOLBOX TALK

Training staff shall:

- 3.15.1 Describe the concept of toolbox talk, including that the activity opens for raising concerns and learnings
- 3.15.2 Explain what topics are generally discussed at the toolbox talk and their relevance for the slinger signaller e.g. change in weather, individual assignments, point of work risk assessment

The delegate shall:

- 3.15.3 Discuss what the key takeaways from the toolbox talk is for a slinger signaller

#### ELEMENT 3.16 - HAND SIGNALS

Training staff shall:

- 3.16.1 Describe the hazards and risks failing to use hand signals correctly
- 3.16.2 Recap the signals package
- 3.16.3 Demonstrate the practical application of the signal package, one signal at the time
- 3.16.4 Demonstrate how to accurately direct the crane using all relevant hand signals available

The delegate shall:

- 3.16.5 Practice and demonstrate the ability to accurately direct the crane using all relevant hand signals available in different lifting scenarios that combined will use all of the different hand signals



**Note:** Each delegate must correctly demonstrate usage of hand signals three times in different lifting scenarios

### ELEMENT 3.17 - SLINGING TECHNIQUES

Training staff shall:

- 3.17.1 Describe the hazards and risks when slinging (slips, trips, falls and pinch point)
- 3.17.2 Explain and demonstrate the importance of using the proper slinging techniques to ensure continued safe sling capacity
- 3.17.3 Demonstrate how to match slings and hook e.g. ramshorn, single hook and safety hooks
- 3.17.4 Demonstrate sling protection against sharp edges
- 3.17.5 Demonstrate chain slings (shortening clutches), synthetic slings and wire slings
- 3.17.6 Demonstrate different slinging techniques including; straight, basket hitch, choke hitch, multiple slings, spreader beams configuration

The delegate shall:

- 3.17.7 Demonstrate the ability to conduct the tasks described in point 4.17.2-6 in a correct and safe manner
- 3.17.8 Discuss the hazards and risks when slinging related to slips, trips, falls and pinch point

**Note:** Each delegate must correctly demonstrate element 3.17.2-6 individually

## LESSON 4 - SUMMARY AND FINAL TEST

60 min.

The aim of the final test is to summarise the Slinger Signaller module and to assess the delegates understanding of key theoretical and safety related elements of the module.

To successfully complete this Slinger Signaller module delegates shall:

- 1) Pass the final test





## ELEMENT 4.1 - SUMMARY

Training staff shall:

- 4.1.1 Summarise the Slinger Signaller module referring to the learning objectives covered

## ELEMENT 4.2 - EVALUATION

30 min.

The aim of this lesson is to enable the Delegates to reflect on and process their learning outcome and key takeaways from the module, aiming to achieve a high learning transfer from the module to his/her way of work. Additionally, the aim is to give the Delegates the opportunity to conduct an open-minded written and oral formative evaluation of the training.

To successfully complete this lesson of the Module, Delegates must:

- 1) Show commitment to avoid incidents while working with Slinger Signalling
- 2) Show commitment to act out this value by demonstrating a proactive approach
- 3) Participate in the formative evaluation of the module in a constructive manner

## ELEMENT 4.3 - REFLECTION SESSION

The Instructor shall:

- 4.3.1 Give the Delegates final feedback on the formal Delegate performance assessment and inform them whether they have passed (failed Delegates must be informed individually prior to the reflection session)
- 4.3.2 Help the Delegate to do a summative self-evaluation, i.e. mental overview and assort what is learned, identify key takeaways and bridge the gap between what is learned during the module and applying it in his/her way of work. This can be achieved e.g. by an individual reflection session, question session and/or class discussion
- 4.3.3 Re-present the overall aims and objectives of the course for the Delegates' comparison on their learning outcome and meeting of their previously stated expectations of the course
- 4.3.4 Give an overall feedback and feed forward on the Delegates' learning outcome



- 4.3.5 Encourage the Delegates to examine and grow awareness of what specific elements in their own WTG type/WTG environment differ from the training scenario environment (to visualize and enhance learning transfer) and to discuss with colleagues' Slinger Signalling methods and techniques under the local specific conditions identified after course completion

#### ELEMENT 4.4 - FORMATIVE EVALUATION

Delegates shall:

- 4.4.1 Conduct an online or written formative evaluation of the module, as a minimum

The Instructor shall:

- 4.4.2 Respond on relevant elements of any oral feedback from the Delegates



## ANNEX 1 - CONTROL MEASURES FORM (TEMPLATE)

Delegate full name as in passport:	
Delegate WINDA ID:	
Course module:	
Date of completion:	

Scenario Organisation	Violation of Assessment Measures			0-2 passed / 3 failed	Instructor Remarks
Aware of personal and group safety at all times					
Organises and utilises correct equipment for given scenario					
Organises individuals and groups as required					

Scenario Management					
Establishes and maintains control of the exercise scenario at all times					
Fully participates in the exercise scenario					
Follows instructions when required					
Demonstrates correct and safe Manual Handling in exercise scenario					



Knowledge and Understanding					
Applies subject knowledge correctly in given scenario					
Demonstrates understanding of subject					

<b>Total Marks</b>	0-9 Pass 10-27 Fail	PASS: <input type="checkbox"/>	FAIL: <input type="checkbox"/>
Instructor Name (in CAPITAL letters)			
Instructor Signature			
Training provider			



## ANNEX 2 - MEDICAL SELF-ASSESSMENT FORM (TEMPLATE)

Your personal health is your own responsibility. Your Training Provider shall not be held responsible for any illness whatsoever during or after the training.

I hereby confirm that I have read and understood the listed risks and potentially life-threatening medical conditions and that I am physically and medically fit to participate in GWO Training.

I hereby confirm that there is no factor that will inhibit or affect my participation in GWO Training. I agree to follow all instructions from the appointed Instructor for the duration of the GWO Training. Should there be any doubt regarding my medical fitness, the training provider will stop the training and seek a physician's advice.

Name as in passport	
Delegate WINDA ID	
Course module	
Signature and date	
<p>Additional medical conditions, when applicable:</p> <ul style="list-style-type: none"> <li>• Asthma or other respiratory disorders</li> <li>• Epilepsy, blackouts or other fits</li> <li>• Angina or other heart complaints</li> <li>• Vertigo or inner ear problems (difficulty with balance)</li> <li>• Claustrophobia/Acrophobia (fear of enclosed area/height)</li> <li>• Blood pressure disorder</li> <li>• Diabetes</li> <li>• Pacemaker or implanted defibrillator</li> <li>• Arthritis, osteoarthritis or other muscular/ skeletal disorders affecting mobility</li> <li>• Known allergies (E.g. bee, wasps or spider stings / bites. Epoxy and isocyanates)</li> <li>• Recent surgery</li> <li>• Hyperhidrosis manuum (excessive hand sweating)</li> </ul>	



- Any other medical condition or medication dependency that could affect climbing or physical impact of climbing

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## ANNEX 3 - COMMUNICATION

The method of communication to be used shall be agreed and unambiguous as part of the pre-job talk or JSA during the slinger signaller training. The below setup can be used in such regard.

- 1) All personnel who are involved shall be competent in the language chosen. Using verbal instructions in accordance with Table 1.
- 2) Everyone participating in lifting operations shall have a radio for communication, unless all persons involved can communicate clearly with each other through direct speech.
- 3) Radio communication equipment with over-ear headphones and a microphone should be used.
- 4) Hand signals as shown in Table 2 may be used to supplement radio communication, and to secure a load in the event of loss of radio communication.
- 5) In order to avoid misunderstandings, confirmatory communication shall be used during lifting operations, unless this causes increased risk in the lifting operation. This means that the desired movement is specified by the signaller and the command is confirmed by the lifting appliance operator.
- 6) Where appropriate, a communication method can be chosen whereby the signaller gives a continuous signal to continue the movement. The lifting appliance operator shall halt immediately if he or she does not receive the signal.
- 7) All unnecessary use of radios, noise or activity that can distract the lifting appliance operator shall be avoided.



Table 1 – Communication instructions

Instruction	Action
Raise	Lift the load
Lower	Lower the load
Boom up	Raise the boom
Boom down	Lower the boom
Slew right	Slew to the right (from crane operators' position)
Slew left	Slew to the left (from crane operators' position)
Stop	Stop the movement immediately
Gently/slowly	Slow movement
Slack off	Release tension in the wire so that the hook can be released
Hook free	Lift up released hook

Table 2 – Hand Signals

<p>Extend telescopic boom</p>	<p>Retract telescopic boom</p>
<p>Swing</p>	<p>Stop</p>





<p>Emergency stop</p>	
<p>Raise the load</p>	<p>Lower the load</p>
<p>Raise the boom</p>	<p>Lower the boom</p>



## ANNEX 4 - GENERIC LIFT PLAN

The following pages contain a sample lift plan which can be used as a template for training providers to develop their own lift plans for training.

**Note:** The lift plan in this annex is not intended to be used as a live lift plan it is only to be used as a template for the training provider to create their own lift plan to be used during training. It can be used as an example during the training to show the specific elements that are included in a lift plan.

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## Lift Plan for the lift and positioning of a Shipping Container

<b>CLIENT</b>	XXXXX
<b>SITE</b>	XXXXX
<b>PROJECT</b>	XXXXX

Site Address	XXXX
Site Contact: Phone: email:	XXXX
Competent Person: Phone: Email:	XXXXX

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## 1. Introduction

This method statement has been prepared and based on the information supplied by our client together with site inspection. Risk assessment and drawings completed by the Competent Person.

All work shall be performed in accordance with:

- 1) The Management of Health and Safety at Work Regulations 1999 Reg. 3.
- 2) Health & Safety at Work Act 1974
- 3) BS 7121 Safe Use of Cranes and Lifting Operations Parts 1 and 3
- 4) Lifting Operations and Lifting Equipment Regulations 1998
- 5) The Provision and Use of Work Equipment Regulations 1998 Reg. 3 to 11

**Note:** The above legislation is applicable to the UK. Local/national legislation shall be adhered to in countries where the above is not applicable.

TBT	Toolbox Talk
m/s	Meters Per Second (Wind Speed)
RCI	Rated Capacity Indicator
CoG	Centre of Gravity
WLL	Working Load Limit
ABS	Alloy Bow Shackle
EWL	Effective Working Length

## 2. Arrival on Site

Before any work, including the rigging of cranes commences any induction necessary will be carried out by site personnel. During this all known hazards will be identified, and the evacuation routes and procedures advised.

The Crane Supervisor will hold a TBT with the crane operator, slinger signallers and all other personnel involved with the lifting operation.

During the TBT the Crane Supervisor will communicate the work to be executed in the method statement and identified roles of the main personnel



and their responsibilities. The content of risk assessments associated with this method statement must also be discussed.

Once inductions and TBT has taken place the crane shall be set up in position shown on drawing CNTR-SMP-DWG-01 in accordance to manufacturers instruction.

### 3. Items to be Lifted

Shipping Container 12.0 m x 2.5 m x 2.3 m high.

Weight: 10.0 metric tons

### 4. Crane Details

Type	Liebherr LTM 1095-5.1
Capacity	95 Metric tons
Counterweight	23 Metric tons
Main Boom Length	29.2 m
Outrigger Centres	7.3 m x 7.0 m
Hook Block Capacity	16.0 Metric tons
Max. Working Windspeed	11 m/s (10-minute mean)

### 5. Lifting Accessories:

QTY.	Accessory	WLL
4	Container lifting lugs	32.0 t
1	Fibre sling (basket configuration) EWL 4.0 m (EWL 2.0 m)	30.0 t
4	Fibre slings EWL 10.9 m	10.0 t
4	Sling shackles	12.0 t
1	Lifting beam EWL 2.55 m	40.0 t
1	Sling shackle	30.0 t



## 6. Safe Working Load:

Load	Shipping Container
Maximum Radius	16.00 m
Weight of Load	10.00 Metric tons
Weight of Rigging	00.50 Metric tons
Weight of Hook Block	00.30 Metric tons
Fly-Jib Reduction	00.31 Metric tons
Total Load	11.11 Metric tons
WCF 10% (tons)	01.12 Metric tons
Factored Load	12.23 Metric tons
Crane Capacity	14.70 Metric tons
% of capacity used	84%

## 7. Lifting Operation

The following section provides detailed methodology for lifting operations:

**Number of personnel required;** 1x Crane supervisor. 3 x Slinger signallers

**Means of communication;** Communication shall be by hand 2 x way radios. Alternatively use recognised hand signals like those in BS7121.

**Applicable Drawings;** CNTR-SMP-DWG-01 & 01A

**Wind Speed limits for operation;** 11.0 m/s (10-minute mean)

**Crane type for this lifting operation;** Liebherr LTM 1095-5.1 (95t capacity mobile crane)

- 1) Crane Supervisor shall carryout TBT with all personnel involved with the lifting operations.
- 2) All sling and rigging must be in accordance with drawing numbers where applicable. All lifting accessories must have valid certification.
- 3) Ensure rigging is checked for damage pre- and post-use.
- 4) The Lifting Supervisor will provide all information regarding weights and CoG to all involved with the lifting operation.
- 5) Under guidance from the slinger signaller the lorry shall reverse into



position as shown in applicable drawing. Lower the crane hook to grade to attach the lifting accessories.

- 6) Hoist the crane hook until the accessories are above the height of the shipping container. Using boom, hoist and slew crane motions, position the accessories centrally above CoG of the container.
- 7) Slowly lower the crane hook so that the lifting points on the load can be connected to their relevant lifting accessories by the Slingers.
- 8) 2 x 6.0m taglines will be attached to the load and transferred to the Slingers.
- 9) Using hoist slew and luffing motions the Signaller will instruct the Crane Operator to slowly take up the slack in the slings, so a final check will be made.
- 10) Ensure that the slings are correctly tensioned and that the hook and accessories are positioned centrally over the CoG of the load.
- 11) Check for loose items that could fall from the load when lifted.
- 12) The Signaller will direct the Crane Operator to slowly raise the load 0.5m, so it is free from snags or obstructions, stop brake check!
- 13) Once satisfied the Crane Supervisor will instruct the lorry driver to slowly drive the transport vehicle out from under the suspended load.
- 14) The Crane Operator guided by the Signaller will slew the load clockwise and boom down to approx. 16.0m radius until the container is suspended centrally above its required laydown position. Slowly lower into position.
- 15) The Signaller will instruct the Crane Operator to lower the load until, with the assistance of the Slingers, it is guided into its position.
- 16) Once correct positioning is confirmed, the crane hook will then be lowered to a point where the slings can be safely detached from the load.
- 17) Once the rigging has been removed the Signaller will instruct the Crane Operator to hoist the slings/rigging clear of the container and slew anti-clockwise. (Be aware of slings snagging during this process)
- 18) Remove the accessories and store in their nominated storage location.
- 19) De-rig the crane, carryout housekeeping duties and depart the work area.



## 8. Drawings

Drawing id No.	Lift items table	
	Item Description	Item Weight
CNTR-SMP-DWG-01	Drawing showing crane position and information	10.00t
CNTR-SMP-DWG-01A	Container rigging drawing	10.00t

## 9. List of Appendix

List of appendices relating to the lifting operations.

Appendix 1\_ CNTR-SMP-RA-01 Lifting RA

Appendix 2\_ CNTR-SMP-DWG-01 & 01A (associated drawings)

**Note:** Where documents and drawings are referenced user must always check latest revisions are used in relation to this lift plan. If in doubt contact the responsible person.

## 10. Competent Person Contact details

*In the event that there is a requirement to contact the competent person for lifting operations they may be contacted using the mail address and phone number below.*

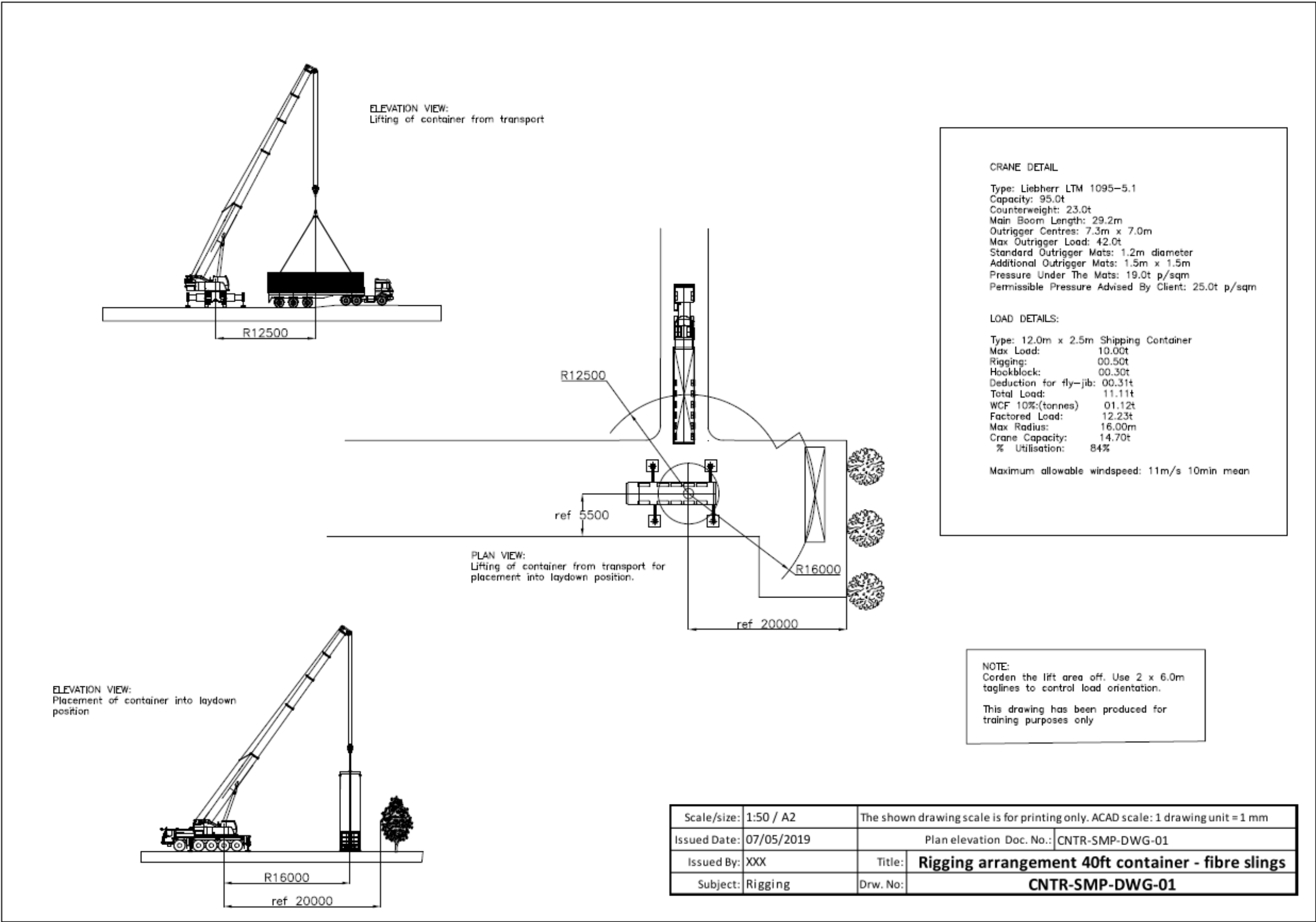
Mail- xxxxx

Tel- xxxxxx



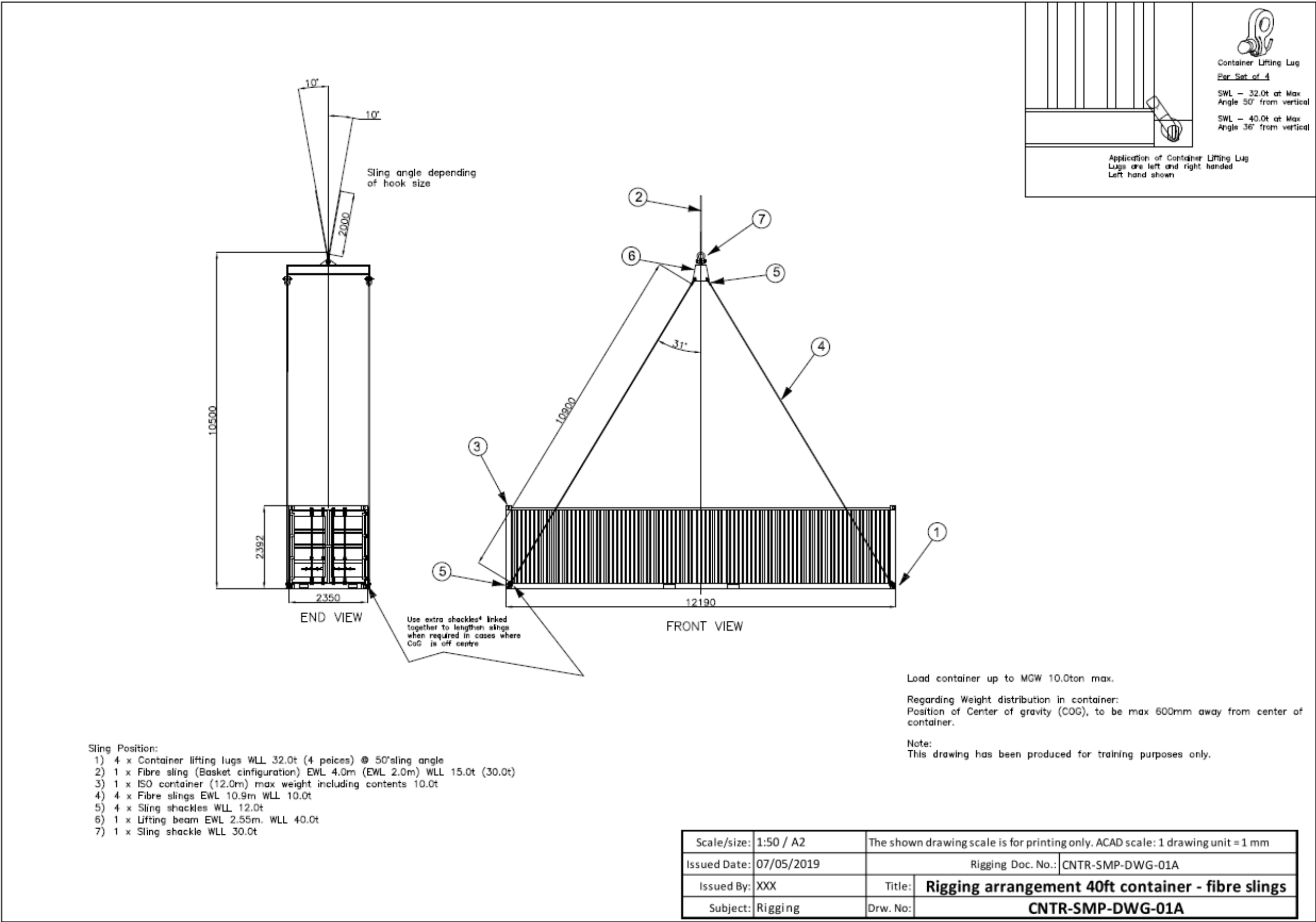


Drawing number CNTR-SMP-DWG-01





Drawing number CNTR-SMP-DWG-01





## ANNEX 5 - EQUIPMENT LIST

The equipment required for training must be available and must fulfil national legal requirements where applicable. The following tools, materials and equipment are needed for the execution of the course:

- 1) Documentation:
  - a. Lift plan for loads being lifted during practical training (this should be based on the lift plan in annex 4)
- 2) Tools:
  - a. Two-way radios
- 3) Slings:
  - a. Endless synthetic
  - a. Web sling
  - b. Chain
  - c. Wire rope
- 4) Spreader beam
- 5) Shackles:
  - a. Bow type
    - Both screw pin and bolt and nut type with appropriate securing pins & rings
  - b. Dee type
    - Both screw pin and bolt and nut type with appropriate securing pins & rings
- 6) Lifting accessories:
  - a. Lifting bags
  - a. Tag lines
- 7) Load attachments:
  - a. Eye bolts and nuts
  - a. Trunnions
  - b. Swivel eyebolts
  - c. CLB / CLT container lugs (camlocks)
  - d. Permanent lifting lugs
- 8) Various types of loads to be lifted:
  - a. Must include a load with an offset centre of gravity and a load



long enough to require a tagline

9) Examples of defective lifting equipment and accessories:

- a. In an overloaded condition
- a. Labelled with expired certification tags
- b. Incomplete or unreadable tags

10) Crane

11) Consumables

12) Personal Protective Equipment

13) Miscellaneous

Any equipment used during GWO training shall meet or exceed the minimum requirements of the national standards listed in table A5-1. When working in a country where there is no applicable national standard then the equipment shall meet or exceed the minimum requirements of the European standards.

Equipment	Country Specific Equipment Standards		
	Europe	North America	United Kingdom
Endless (Round)	EN 1492-2	ASME B30.9	BS EN 1492-2
Webbing	EN 1492-1		BS EN 1492-1
Chain	EN 818		BS EN 818
Wire rope	EN 12385-4		BS EN12385-4
<b>Spreader Beam</b>	EN 13155		BS EN 13155
Nut and bolt type	EN 3266+A1		BS EN 3266+A1
Swivel type	EN 3266+A1		BS EN 3266+A1
<b>Trunnions</b>	DIN 28085		
<b>Shackles</b>	EN 13889		BS EN 13889
<b>Lifting Bags</b>	EN 1492-1		BS EN 1492-1
<b>CLB / CLT container lugs</b>	EN 13155		BS EN 13155
<b>Crane</b>	EN 13000 or EN 13852-1		BS EN 13000 or BS EN 13852-1

Table A5-1 - Equipment list country specific standards

**Note:** All equipment shall be maintained and where appropriate, inspected and tested in accordance with current national standards/legislation and manufacturers' recommendations.