# Management of Lifting Operations Standard

Unitas
Stoke-on-Trent Ltd.

## Contents

# 1 Introduction

The purpose of this Standard is to standardise lifting operations across all Unitas operations and that of its subcontractors.

This Standard requires that:

- All lifting operations are managed, planned, coordinated and supervised.
- All lifting operations are regarded as hazardous operations.
- The selection and use of lifting equipment is considered during pre-tender planning.
- Specific appointments are made in writing.
- Persons are competent for, and experienced in, the role they are fulfilling.

# 2 Scope

The scope of the SHEMS covers all persons, workplaces and operations in our Business.

Exceptions will be documented through a SHEMS appendix B process (SHEMS-FOR-GR-999), authorised by Unitas SHE Director Responsible for coordinating SHE.

Unitas SHEMS Manual (SHEMS-STD-GR-003) provides guidance and signposting for the compliance, implementation, monitoring, audit and review of our systems, demonstrating continual improvement and achievement of Company objectives.

## 2.1 Definitions and Acronyms

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|---|---|
| **ALLMI** | Association of Lorry Loaders Manufacturers and Importers |
| **CPA** | Construction Plant hire Association |
| **CPCS** | Construction Plant Competence Scheme |
| **LOLER** | Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) |
| **NPORS** | National Plant Operators Registration Scheme |
| **SETC** | Self-Erecting Tower Crane (Pedestrian Operated) |
| **SWL** | Safe Working Load |
| **PUWER** | Provision and Use Work Equipment Regulation |
| **RTITB** | Road Transport Industry Training Board |

**Lift Plans** can be a single page detailing a safe system of work relating to a lifting operation or a suite of documents detailing complex arrangements for a lifting operation. Lift Plans must be produced and/ or approved by a NPORS / CPCS Appointed Person in accordance with BS7121 The Safe use of Cranes.

The Unitas Lift Plan Template is SHEMS-FOR-GR-068 and can be downloaded from O Drive.

For complex lifts a competent lifting management contractor such as Pro Lifting UK should be consulted for lifting management solutions including the preparation or approval of lift plans. http://pro-liftinguk.com/

**Lifting Equipment** Work equipment used to lift or lower loads (crane, hoists, jacks, forklifts, Lorry Loaders,Telehandlers, Excavators etc.) this includes the fixings for the anchoring, or supporting of lifting equipment as defined under LOLER and BS7121.
Typically, should an excavator be used for lifting materials, other than for excavated material or fill, then by definition it becomes a crane (e.g. an excavator used to lift and lower a manhole ring into position).

**Lifting Accessories** (chain-slings, shackles, strops, wire bonds, spreader beams, etc. also referred to as 'lifting tackle') used to attach loads to the lifting equipment.

### 2.1.1 The Project Manager (PM) shall:

Ensure that this standard is produced, communicated and adhered to.
Ensure that a Lift Plan (SHEMS-FOR-GR-068) is drawn up at the start of the project.
Appoint the Appointed Person (AP), via SHEMS-FOR-GR-011, and ensure that they are trained (CPCS/NPORS) and are competent to plan and manage the project being undertaken. When selecting and assessing an AP, the variety and complexity of the lifting operations to be undertaken shall be considered, as well as all the problems which may arise from proximity hazards and environmental aspects. The appointee must be given the time and resources to carry out the duties involved.
Carry out a periodic review of the AP's performance to identify further training needs/ opportunities.

Appoint a Crane Coordinator (when necessary) SHEMS-FOR-GR-159 (Minimum competence level is Crane Supervisor). To oversee all lifting operations with multiple cranes, simultaneous lifting operations and other lifting equipment interfaces.

Appoint a Crane Supervisor, via SHEMS-FOR-GR-111, and ensure that they are trained (CPCS/NPORS) and competent to supervise the lifting operations in conjunction with the Appointed Person.
Monitor and review appointments regularly, particularly in the event of changing site conditions, complexity or workload.

### 2.1.2 The Appointed Person (AP) shall ensure:

- The lifting operation is properly planned and carried out safely.
- A suitable and sufficient risk assessment is carried out to evaluate the hazards associated with the lifting operation and identify control measures.
- Produce and/or approve a Lifting Plan/s and review on an ongoing basis.
- Effectively communicate Lift Plans and subsequent changes to all members of the Lifting Team.
- Monitor and audit Lift Plans at a frequency to be determined upon complexity of lifting operations.
- Accurate weights, radii, heights, etc are established.
- Suitable lifting equipment, accessories are selected.
- Suitable access is provided to unload and store materials in conjunction with the site team.
- Competent, properly trained personnel are provided and that they are fully briefed.
- All cranes, lifting accessories and other equipment are properly maintained, inspected, examined and tested when necessary.
- Retains overall responsibility for the lifting operation and has the authority to stop the lifting operation at any time if it is considered that there is a risk to safety. If the Appointed Person is not present, then this authority passes to the Crane Supervisor (CS). The CS shall have sufficient knowledge and experience to identify potentially unsafe operations. The selection of a CS shall not be based solely on the production of a CPCS/NPORS card, but also an up to date logbook or CV.

### 2.1.3 Crane/Lift Coordinator

The duties of the Crane/Lift Coordinator is to plan and direct the sequence of operations of all cranes and to ensure they do no collide or impact with other lifting equipment e.g. concrete placing booms, mobile cranes and piling rigs.

### 2.1.4 Crane Supervisor

Each lifting operation must be properly supervised to ensure that Lift Plans are being followed and the operation is being carried out safely. The person carrying out the supervision will be the Crane Supervisor whose duties are set out below;

- Ensuring that lifting operations and all lifting equipment are in accordance with the Lift Plan, prepared by the Appointed Person.
- Ensuring that sufficient personnel are available to safely carry out the lifting operation/s.
- Ensuring that the conditions on site are the same as those identified by the Lifting Plan.
- Reporting back to the Appointed Person if there are any problems.
- Briefing the personnel before the lifting operation begins.
- Supervising and directing the slinger, signaller and operators.
- Only lifting items that have been detailed in the Lifting Plan.
- Stopping the operation in the event of any risk to safety.

### 2.1.5 Slinger/Signallers

Every lifting operation undertaken on Unitas sites must have a competent NPORS or CPCS slinger/signaller allocated to ensure that loads are attached and detached safely and that the correct lifting accessories are used as stated in the lifting plan.

The slinger/signaller duties include;

Attaching and detaching the load to and from crane hook using approved slinging techniques.
Using the correct lifting accessories in accordance with Lift Plan.
Visually checking the lifting accessories for damage before use.
Initiating and directing the movement of the load by giving appropriate signals.
To trial lift, so as to check the integrity of the load before hoisting, then place the load safely.

### 2.1.6 Crane Operators

Operators of lifting equipment must be competent and hold the relevant CPCS/NPORS category for the equipment they are operating.

Crane operators must be medically assessed every three years (refer to Occupational Health Standard SHEMS-STD-GR-083) Crane operator's duties include;

- Undertaking daily and weekly checks of lifting equipment and recording as relevant.
- Carry out routine maintenance.
- Leave the lifting equipment in a safe condition when unattended.
- Leave the crane when out of service (e.g. overnight or in high winds) in a safe and secure condition in accordance with manufacturers' instructions.
- Operate lifting equipment in a safe manner in accordance with slinger/signallers directions, and the Lift Plan.
- Not operate the crane if the prevailing wind conditions make the moving of the load unsafe.
- Only conduct lifting operations safely and report any requests to lift unsafely.

# 3 Unitas Requirements

Lifting operations on Unitas sites and projects must be managed, planned, coordinated and supervised. All lifting operations involving the raising or lowering of any load, including personnel are regarded as hazardous operations. A Lifting Plan is produced which identifies management responsibilities. A Safe System of Work (SSW) is also created to ensure the safety of all who may be affected; all lifting operations are planned in accordance with the findings of a risk assessment, and carried out by competent persons using suitable plant and equipment that is fit for purpose.

Lifting operations cover a wide spectrum of mechanical operations ranging from the use of a simple gin wheel to a complex lift involving multiple cranes in a hazardous environment.

The Standard is arranged to cover the required competency standards of personnel and the categories of activities and equipment involved.

## 3.1 Management

The Project /Manager or senior person on site is responsible for ensuring the requirements of this document are implement effectively. The Project Manager or senior person on site may delegate duties to other members of staff but retains any not delegated. Delegation is made in writing and recorded in the Lifting Plan. Appointments are made via various SHEMS forms as referenced in Section 1.2.

It is unlikely that Unitas will require the use of a tower crane but where a tower crane is required a reputable company such as HTC WOLFFKRAN should be approached for the supply of tower cranes.

## 3.2 Planning

All lifting operations are planned to ensure that they are carried out safely and that all foreseeable risks have been taken into account. The process includes a risk assessment, development of a SSW and production of a Lift Plan.

The Plan must address all of the risks identified, the resources required, and the procedures and responsibilities involved.

Routine activities, such as loading vehicle with a fork lift truck, may only need an initial plan that can then be reviewed periodically to make sure that at least plan is still appropriate. Routine activities shall be reviewed every six months.

More complex lifting operations will require a new plan every time they are carried out, as well as a new risk assessment if they are to be conducted at different sites.

Before crane operations commence, the Project/ Site Manager shall ensure*:*

- That the Appointed Person responsible for planning the lift is a suitably qualified, competent and experienced.
- That the Appointed Person visits site to survey, prior to any intermediate and complex lifts commencing.
- That steps have been taken to verify the weight, the centre of gravity, the orientation of the load to be lifted and lifting points which are to be used.
- The crane position, its maximum radius at which the crane will operate for carrying out this lift is agreed.
- Taking into account the length of slings etc. and the necessary clearance between the load and the crane jib-head must be raised to carry out this lift (e.g. jib height, counterweight, etc.).
- The maximum load that will be placed on the machine during the lift, includes the weight of slings, and the crane hook block, etc.
- Any slew limitations on the machine are taken into account.
- The duties chart been referenced.
- The ground conditions are adequate for this crane (e.g. of sufficient aread, level and of adequate load-bearing capabilities to support the fully rigged crane and load etc.).

- Sufficient space available to erect the crane on this site.
- If there is not sufficient space available, where is the crane to be erected.
- Does crane need be travelled in the erected condition.
- Is the access between the site of erection and the site of operation suitable, of adequate area, adequately level and of load-bearing capabilities to support the erected crane when travelling in accordance with the British Standard Codes of Practice and the manufacturers instructions.
- That there are no electric power cables/ground services or other elevated obstructions etc. which the crane is likely to approach.
- There are no underground services that the crane operation will impact on.
- There is adequate and safe access and agress for the crane on the site.
- All the necessary certificates for the crane are available and currect.
- The drivers, received adequate training on the crane provided.
- The operator has been advised as to whom he should contact in the event of any technical problem.
- The operator been advised as to the results of checks conducted.

The operator has a current critical worker medical assessment (valid for 3 years).

## 3.3 The Crane Team

Any lifting operation involves a team of people with specialist skills and knowledge. To effectively implement the Safe Systems of Work (SSW), the Appointed Person establishes and leads the crane team which includes.

- The Appointed Person (where more than one is present on a project a Lead AP should be nominated.
- Crane Coordinator (Where multiple lifting operations are taking place).
- Crane Supervisor.
- Crane Operator.
- Slinger/Signaller.
- Crane erection team (where applicable).

Crane team meetings, chaired by the Appointed Person or delegated Crane Supervisor, are implemented where lifting operations occur or there is a mixture of tower crane, mobile crane or concrete pumping operations. The frequency of the meetings is determined by the Appointed Person.

**Crane team meeting agenda** shall include:

- Review of yesterday's/last week's lifting operations.
- Incidents/Problems.
- Revised Methods.
- Future Lifts.
- Future cranes/plant on site.
- New methods.
- Lifting Equipment issues.
- Results of routine inspections, any defects noted?
- New/replacement equipment needed?
- Thorough examination/testing requirements.
- Any other business.
- Date of next meeting.
- Distribution.

## 3.4 Competency Standards of Personnel

All powered mechanical plant used in lifting operations is operated by competent persons holding the relevant CPCS/NPORS category, or equivalent recognised training (i.e. ALLMI for lorry loaders), for the plant involved.

Personnel involved in the planning of Crane lifting operations or where plant is used as a Crane, including the development of a SSW, are competent and hold the CPCS/ NPORS category of “Appointed Person”. The level of competence being commensurate to the complexity of the operation; the plant involved and the level of risk.

The Supervision of lifting operations is undertaken by the Appointed Person, or is formally delegated to a competent person holding the CPCS/ NPORS category of “Crane Supervisor”.

Any person directing or signalling a lifting operation, or attaching or detaching a load must be competent. Lifting operation using cranage are only carried out by persons holding a relevant CPCS/NPORS Slinger/ Signaller category.
The holding of any of these CPCS/ NPORS categories does not necessarily determine competence to undertake these roles in all circumstances. Both individuals and management consider personal limitations with regard to specific conditions. Complex lifts are, because of their high levels of intrinsic risk, only planned and controlled by highly experienced competent persons.

Where multiple lifting operations are in progress, including the use of concrete pumps, a “Crane Coordinator” is appointed; the minimum qualification for this role is CPCS/NPORS Crane Supervisor.

<table>
<tr><th>Appointment</th><th>Competency Card</th><th>Required on Site</th><th colspan="2">Comment</th></tr>
<tr><td>Appointed Person</td><td>CPCS/NPORS</td><td>No</td><td colspan="2">Must delegate responsibility to Crane Supervisor if not on site</td></tr>
<tr><td>Crane Supervisor</td><td>CPCS/NPORS</td><td>Yes</td><td rowspan="3">Roles may be combined</td><td>Must sign acceptance of delegation of responsibility.</td></tr>
<tr><td>Crane co-ordinator</td><td>CPCS/NPORS</td><td>Multiple lifts</td><td>Must be qualified as crane supervisor as a minimum</td></tr>
<tr><td>Slinger Signaller</td><td>CPCS/NPORS</td><td>Yes</td><td></td></tr>
<tr><td>Crane operator</td><td>CPCS/NPORS</td><td>Yes</td><td colspan="2">Must be medically fit</td></tr>
</table>

Table 1: Appointment Competency

## 3.5 Specialist Lifting

Specialist lifting is carefully planned and includes the raising and lowering of personnel (man riding), tandem lifts, vacuum lifting devices, magnetic lifting devices and deep shaft working etc. Further guidance is available in BS7121 Pt 1 Code of Practice for the Safe use of Cranes.

## 3.6 Mobile Crane Operations

Specific requirements relating to categories of mobile crane lifting operations apply. In all instances the proposed SSW, which includes both a Risk Assessment and a Lift Plan is evaluated before work commences. The outcome of the initial evaluation and subsequent monitoring process is recorded in accordance with the approved Method Statement. The Unitas Lift Plan Template (SHEMS-FOR-GR-068) provides for the recording of variations to this specific document.

Any operation that includes the raising or lowering of a freely suspended, unguided load using wheeled, truck mounted, or crawler cranes on a Unitas project is carried out under one of the following arrangements.

### 3.6.1 Crane Hired To Unitas Business Unit

When hired cranes are used, Unitas carries full responsibility for the planning of its safe operation. This responsibility extends to the actions of hired in personnel such as a crane operator as they are working under the hirers direction. All aspects of such lifting operations are carried out by competent personnel, holding the relevant CPCS/NPORS categories as previously detailed.

The template (SHEMS-FOR-GR-068) provided is used to produce the Lift Plan. This process commences with the undertaking of a risk assessment, the findings of which are recorded.

### 3.6.2 Crane Owned By or Hired To A Subcontractor

Where a sub-contractor carries out a lifting operation as part of their contracted work, using owned or hired equipment the responsibilities~~,~~ remain with Unitas in managing the sub-contractor.

Unitas is responsible for ascertaining the suitability of the ground conditions and, where applicable, the provision of temporary works to provide a firm standing for the crane is clearly identified. Evidence to confirm that the load bearing capacity of the ground is adequate and is required from the responsible party. The subcontractor undertakes a risk assessment and provides a SSW which includes a Lift Plan (which includes details of rigging/de-rigging of the crane) approved by Unitas.

### 3.6.3 Contract Lift by Crane Owner For Unitas or Subcontractor

Where a contract lift is undertaken by a crane owner employed as a specialist subcontractor, a form of contract setting out the scope of works is agreed (in line with CPA Mobile Crane TIN 103 – *Responsibilities During a Contract Lift*). The company employed to carry out the contract lift is responsible for the full planning and operation of the lift including the provision of all plant, equipment and personnel.

The Unitas Business Unit is responsible for establishing that the sub-contractor engaged to undertake the contract lift is competent, in conjunction with the sub-contractor approval process (refer to Contractor, Material and Product Standard SHEMS-STD-GR-017).

Responsibility for ground conditions including temporary works (temporary works includes anything placed between the outrigger and the ground and includes items carried on the crane and deployed by the crane operator during setting up), unless explicitly stated in the contract, is excluded and remains with Unitas.

It is essential that this is clearly understood by all parties, particularly when the contract lift is being carried out as part of a subcontractors activities and that the party responsible for ascertaining the adequacy of ground conditions and control of temporary works is clearly identified and these issues are suitably managed.

The Temporary Works Standard (SHEMS-STD-GR-048) gives indicative values for permissible bearing pressures and should be used for guidance purposes only.

The contract lift provider undertakes a risk assessment and provides a SSW which includes a Lift Plan. This may be in an alternative format to that of the Unitas documentation, providing similar levels of information are supplied which has been reviewed by the Appointed Person.

The Lifting Operation is subject to the risk evaluation process as set out in the Risk & Impact Assessment Management Standard (SHEMS-STD-GR-014).

### 3.6.4 Generic Lifts

Where repetitive lifts are carried out in a controlled environment of known weights that represent a small portion of the cranes maximum Safe Working Load (SWL), it is acceptable to establish a generic Lift Plan appended with a schedule of lifts.

Typical examples of where such duties would exist are in a fabrication area where reinforcing steel is being handled, by a tower crane carrying out generic/repeated lifts of components from a number of locations.

### 3.6.5 Certification

All cranes must be provided with evidence of a thorough examination within the previous 12 months. When a crane carries out the lifting or lowering of personnel, the thorough examination is within the previous 6 months. Cranes shall only be used to lift personnel in circumstances when no viable alternative is available or in an emergency.

However, when the machine is working extended hours, is working in a hostile environment or under arduous duties then this period is reduced to reflect the increase in risk of mechanical failure. Monitoring determines that the required inspections and checks have been carried out in a diligent manner and that accurate records are maintained.

All cranes are inspected by a competent person (normally operator) at stated periods. The industry standard is every 7 days. Pre-use checks i.e. at the start of each shift must where the crane is operated must be carried out by a trained person, usually the operator.

## 3.7 Lifting Accessories

All lifting accessories are issued with a certificate of conformity when new and are subject to thorough examination at **6 monthly intervals**. Evidence of the previous thorough examination accompanies any lifting accessory and is readily available at the place of use. All accessories are marked with the identification number of item and date of last examination. The competent person using lifting accessories routinely checks for damage wear or loose components prior to every use.

Any damaged lifting accessory is immediately taken out of service and kept secure to prevent reuse prior to repair or destroyed if applicable. Damage that appears relatively minor may result in a considerable reduction in the SWL of the equipment and where any doubt exists as to the serviceability of the lifting accessory it is taken out of service.

Quick hitches not fitted permanently to the base machine are lifting accessories and as such subject to 6 monthly thorough examinations.

Lifting accessories hired / used by Unitas or supply chain must have a thorough inspection every 6 months.

## 3.8 Tower Cranes

Where a tower crane is required a reputable company such as HTC WOLFFKRAN should be approached for the supply of tower cranes. . The following factors, together with the requirements of the Unitas Minimum Standard for Tower Crane Safety must be considered at tender stage:

- Maximum lift height.
- Lifting radius and capacity.
- Crane type (Self erecting, luffing or saddle jib).
- Base type (Expendable fixing angles, cruciform or travel).
- Clearances of surrounding structures and other cranes.
- Location issues.
- Power supply.
- Accessories.
- Anti-Climb solutions.
- Basic erection/dismantle details.
- Over-sail.
- Load hook-block wireless camera (Blokcam™).

The design of the tower crane base or foundations and any tying in to a structure must carried out by an approved a structural engineer, in accordance with the Temporary Works Standard (SHEMS-STD-GR-048) and relevant Minimum Standards.

Should a design be procured from an external structural engineer, the design must be design checked by 1AN INDEPENDENT ENGINEER FROM A DIFFERENT COMPANY . Following a Design Check by AN INDEPENDENT ENGINEER FROM A DIFFERENT COMPANY, a copy of the approved base design is issued to both the client and the crane provider.
A Foundation Verification Form must be received by the crane provider prior to their mobilisation.

Note: Erection does not commence without the issue of the Permit to Load/Erect (SHEMS-FOR-GR-063

### 3.6.6 Erection and Dismantling

It is essential that the planning of the erection and subsequent dismantling of a tower crane is only carried out by competent persons, experienced with the specific type of crane and working environment. Work does not commence unless there is adequate time to complete the work or progress to a stage where the incomplete tower crane may be left in a safe condition. Consideration is given to exclusion zones, road closures, and prevailing and forecast weather conditions.

The crane provider to supply a Supervisor at all times during erection and dismantling operations.

### 3.6.7 Rescue Plan

During erection, adjustment, maintenance or dismantling of the tower crane a rescue plan shall be in place, detailed in the method statement, and personnel trained in safe use of equipment and rescue process. The rescue plan is reviewed and authorised before works commence.

Site Management are responsible for developing a rescue plan for the crane operator during routine operations. **Advice for crane rescue is available from the tower crane providers.**

### 3.6.8 Personnel

Tower crane operators shall hold the relevant CPCS/NPORS category and are competent for the type of crane in use. The crane operator shall establish and demonstrate their familiarity with the operation and controls for the specific crane prior to works commencing. Works shall only commence after the Appointed person/site manager is satisfied that the crane operator is competent and experienced to commence the works.

In the interests of safety, the operator has breaks from the working activity in line with other personnel on site. Periodic medicals are necessary to ensure medical fitness; BS7121 requires operators to provide evidence of medical fitness at periods not exceeding 3 years.

Only competent slinger/signallers holding the relevant CPCS/NPORS category direct tower cranes. When radio communication is used, both the operator and the slinger/signaller are fully conversant with its use and a clear radio frequency is provided.

The operator is instructed to only take direction from the appropriate slinger/signaller.

As a minimum, a Crane Supervisor is required on site at all times to supervise the lifting operation.

### 3.6.9 Zoning and Anti Collision Systems

Zoning/anti-collision devices are available to limit the slew of a tower crane to prevent it operating over/near excluded areas or to prevent it encroaching with another tower crane's airspace. The supply of this equipment must be considered at the planning stage.

Zoning/anti-collision systems e.g. SMIE, use high frequency detection equipment to monitor the presence of structures and/or other tower cranes and issue a warning and control restrictions if entering the airspace of an adjacent crane or prohibited zone.

These systems, whilst necessary should only be used as a supporting aid; the primary duty to prevent collisions remains with the operator. Where multiple tower cranes, mobile or crawler cranes and concrete pumping booms are in use, a Crane Co-ordinator (2.1.3) oversees and plans the sequence of operations to prevent collisions.

A dedicated "crash prevention" radio channel system is employed, with the operator of the highest crane taking the lead.

Radio, zoning and anti-collision systems are checked daily or prior to each shift commencing and checks recorded. The Appointed Person, delegated crane supervisor (or Crane Coordinator) should confirm that the daily checks are undertaken.

### 3.6.10 Planning Lifts

The majority of planning for the lifting operations forms part of the tower crane selection and positioning process and as a result most lifts will be of known weights at known radii within the maximum SWL of the crane.

These lifting operations may be controlled with a generic Lift Plan supported by the Lifting Schedule.
Where special loads or any non-routine lifting operation is to be carried out a specific Lift Plan must be developed for the operation.

### 3.6.11 Certification

All tower cranes must have a test & thorough examination on installation and every 12 months thereafter. Further testing will be required after any substantial alteration or repair. When a crane is to carry out the lifting or lowering of personnel the thorough examination must be in the previous 6 months. Cranes should only be used to lift personnel in circumstances when no viable alternative is available.

All cranes must be inspected by a competent person at prescribed periods. The industry standard is every 7 days, not including pre-use checks. However, when the machine is working extended hours, is working in a hostile environment or under arduous duties then this period should be reduced to reflect the increase in risk of mechanical failure. Monitoring is required to determine that the required inspections and checks have been carried out in a diligent manner and that accurate records are maintained.

## 3.7 Pedestrian Operated Cranes (Self-Erecting Tower Cranes (SETC))

Refer to the Minimum Standard Self Erecting Tower Cranes (SHEMS-MST-DPS-023)
The selection of a self-erecting tower crane should be undertaken in consultation with the crane supplier.

When positioning a SETC the area must be carefully assessed to ensure that it is suitable before the crane is taken to site and put into service.

The following points are taken into consideration:

- Access route to operating location.
- Basic erection/dismantle details.
- Base type (static or travel).
- Folding and operational envelope.
- Individual or possible combined appointments for Lift Supervisor, Operator, Slinger.
- Power supply.
- Accessories.
- Over-sail.
- Security.

## 3.8 Lorry Loaders

**Refer also to Minimum Standard Lorry Loader Operations (SHEMS-MST-DPS-0003).**

Lorry loaders are normally operated by the HGV driver who will be trained to operate the Lorry Loader. The operator may be a direct employee of the supplier or an independent haulage contractor. In any event, the operator shall be competent and hold the relevant CPCS/ALLMI//NPORS category.

Where the operator is required to access the lorry bed, suitable access onto the vehicle must be provided, together with edge protection to protect against the risk of falling from height.

The operation of the controls shall be from a safe position to protect the operator from the risk of crushing or the falling/rolling of the load.

Lifting operations using lorry loaders are subject to risk assessment which forms part of an SSW. This may be generic in form where the operation is simple in a controlled environment, i.e. unloading directly onto the ground within a designated storage area (Basic Lift). In other circumstances such as where the lorry loader is to be used to place a load at height, or is to work outside designated lay down areas.

For Intermediate or Complex Lifts, a task specific risk assessment and a Lift Plan shall be provided similar in content to that required for a mobile crane.

Lorry loaders shall always be used in accordance with the manufacturers operating instructions and within the parameters of the safe working duties. Wherever possible used with the stabilisers fully extended.

Lorry Loaders are subject to the same requirements as all other lifting appliances, in that a thorough examination is required at 12 monthly intervals.

Lorry Loaders are not used for lifting personnel.

If the Lorry Loader operator is also the Slinger, the appropriate category should be stated on the operator's CPCS/ALLMI/NPORS card.

## 3.9 Forklifts and Telehandlers

**Refer also to Minimum Standard Planning & Use of Telehandlers (SHEM-MST-DPS-029)**

When forklifts or telehandlers are operated on site, a risk assessment forms part of the planning for both the lifting operations and the movement of the plant and loads as part of the Site Traffic Management Plan. The selection of a telehandler must be authorised by the Unitas Ops Director (SHEMS-FOR-GR-017).

No forklift or telehandler is permitted to travel carrying a suspended load, other than when moving roof trusses (see 3.12). Forklifts and telehandlers are not to be used for lifting personnel.

Forklifts and telehandlers are only operated by competent personnel who hold the relevant CPCS/NPORS category and are familiar with the type of machine in use. Evidence of familiarisation training in the operation and controls for the specific machine is available. This is especially important with telehandlers where a wide variety of machine manufacturers and machine size exist with differing controls and operating techniques.

Forklifts and telehandlers travel with the load low with consideration given to ground conditions on the route to be travelled. Undulating ground or cross slopes cause instability and place the machine at risk of overturning. Where outriggers are fitted they are correctly deployed before the load is raised.

Forklifts and telehandlers are subject to the same requirements as all other lifting appliances in that a thorough examination is required at 12 monthly intervals and inspection at 7 days.

A wide range of accessories is now available that may have considerable impact on the machine's SWL and/or stability; it is essential that operators are familiar and competent in their operation.

All forklifts/telehandlers used on Unitas sites comply with current legislation and are maintained in an efficient state, in efficient working order and in good repair.

It is a Unitas minimum requirement that the operator of any ride on equipment has 360 degree visibility from the driving position. This enables the operator to see a 1 metre high object 1 metre from the machine and may be achieved by the use of devices such as Fresnel lenses, CCTV or mirrors. The working method of forklifts and telehandlers requires considerable reversing and it is imperative that adequate rear vision is available including immediately behind the rear of the machine.

## 3.10 Excavators used as Cranes

Excavators are primarily designed to handle routine loads contained in the bucket. Excavators can be adapted for use as cranes under defined conditions.

Excavators that are adapted for use as a crane, must be used in direct connection with a particular work activity and shall only be considered when other craneage options are deemed unsuitable, determined by a risk assessment process.

Excavators shall be operated by competent personnel who hold the relevant CPCS/NPORS category and endorsements together with the necessary experience in the use of the type of machine for lifting operations.

A specific risk assessment / Lift Plan for the lifting operation/s must be produced and the lifting operations undertaken in accordance with the manufacturer's operating parameters.

Only manufacturers lifting points are used to attach the lifting accessories to the excavator. The lifting point is designed to prevent accidental detachment of the load.

Use shackles and chain-slings with self-closing hooks, so as to avoid accidental load detachment.
Excavators used as a crane that have the capacity to lift over 1000kg are fitted with check valves to protect against hydraulic hose failure. These check valves are fitted to the main boom and it is recommended that they are also fitted to the dipper arm. A Rated Capacity Indicator is fitted that gives the operator an audio/visual warning of approaching overload.

It is good practice to routinely equip as above any excavator likely to be used as a crane and capable of lifting >1000kg.

It is a requirement that the operator has 360 degree visibility from the driving position. This enables the operator to see a 1 metre high object 1 metre from the machine and may be achieved by the use of devices such as Fresnel lenses, CCTV or mirrors. The working method of excavators requires considerable swinging of the upper works and it is imperative that clear all-round vision is available including close in to the sides and rear of the machine.

Excavators are subject to the same requirements as all other lifting appliances in that a thorough examination is required at 12 monthly intervals and inspection at 7 days. Where a lifting point has been fitted to the excavator this is included in the thorough examination and inspection.

Excavators are not used for lifting personnel.

## 3.11 Appendices

### 3.11.1 Radios

Shall be operated as per the CPA requirements TIN 017 *Radio communication in lifting operations.*

Shall be operated subject to Ofcom licencing requirements.

## 3.12 Special Conditions for Telehandler Handling of Timber Roof Trusses

**Transporting or manoeuvring trusses**

The following options can be applied to the transport, manoeuvring and placement of trusses on site.
All roof trusses should be delivered on vehicles in such a manner that operatives do not need to access the rear of vehicles to remove straps or attach lifting strops.

Where practicable, trusses should be lifted directly from the delivery vehicle onto the roof (such as just-in-time delivery) this will require planning of both the site and delivery of trusses and should be the primary method of delivery and lifting.

Where just-in-time deliveries cannot be achieved (for example, if the plot is not ready) trusses should be lifted from the delivery vehicle via the telehandler onto truss racks designed on loading bays or gable end scaffolds. The delivery vehicle should be positioned as close as possible to the plot under construction and the distance to be travelled by the telehandler limited. The storage of trusses must not impede the safe operation of the telehandler or access to the loading bays.

If the above is not practicable and/or access to the construction area is restricted for the delivery vehicle, the trusses can be lifted from the vehicle onto an appropriately designed, freestanding storage rack. The rack should be positioned close to the plots under construction to limit the distance the trusses need to be moved when required. The truss rack should be continually re-sited as close to the work area, where possible, and be fully accessible by delivery vehicles.

**Lifting of trusses onto the wall plate**

In the majority of circumstances, lifting of roof trusses should be undertaken by a mobile crane where a full pack can be lifted directly onto the wall plate. A lifting plan completed by an appropriately trained appointed person would be required for the lift.

If an alternative method is utilised to lift roof trusses onto a roof, then this will need to be justified by the completion of a lifting plan for each plot, by an appropriately trained appointed person, which will take into consideration:

The capabilities of the lifting appliance
Any restrictions to the lifting operation (such as scaffolding or other obstructions)
Height of the structure
Handling the trusses by workers on the scaffold working platform
Method of lifting the trusses safely, including consideration of the pitch, size and weight of the truss
Transporting of trusses via a telehandler

The following conditions apply if trusses are to be suspended via the forks of a telehandler and transported on a development.

The route from the truss rack or delivery vehicle to the plot should not be through occupied areas of the development where practicable. If this is necessary a traffic marshal(s) will be required to ensure occupants or others are not put at risk from the movement of the trusses.

The route should be reviewed prior to transporting the trusses and an assessment made if any obstacles (such as lamp posts or scaffold) will affect the ability of the operator to manoeuvre the telehandler and load safely.

The maximum load of trusses that can be transported via a telehandler from a truss rack or delivery vehicle to a plot is 600 kg. The weight of all trusses installed on site should be known by site management and detailed in the lifting plan. This is the maximum load, but this may need to be reduced depending on the span/pitch of the trusses, potential obstructions, gradients/cross slopes and capabilities of the machine.

The tyre pressures should be within +/- 5% of the maximum stated by the manufacturers and be checked prior to moving the load.

The telehandler should be driven at no more than 7 mph with no sharp turns or manoeuvres
The operator should have full vision from the driving position and the trusses suspended from the forks so that the lowest point of the truss (top chord overhang) is within 500 mm (+/- 150 mm) of the ground.

A banksman should be available, where there are obstacles to full visibility, to provide appropriate signals to the operator and ensure no other persons are affected by the movement of the trusses

Trusses should not be moved when wind speeds at ground level are forecast to be or exceed 7 m/s or 16 mph. This should be assessed by the use of an anemometer and/or weather reports for the area.