

<b>Document title</b>	Lifting Operations		
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## Lifting Operations

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## 1. Purpose and Scope

Cellnex UK owns masts, towers and other structures which support broadcasting transmission and other types of antennas. Cellnex UK also operates antennas on structures controlled by other operators and by customers.

The installation and maintenance of this portfolio requires heavy lifting operations to be carried out. It is therefore necessary for strict standards and controls to be applied in respect of the competence and capabilities of the people carrying out certain lifting operations and to the procedures and equipment used. The purpose of this document is to set out the Cellnex UK policy and the minimum standards to be applied by employees, contractors and others carrying out lifting operations on Cellnex UK owned and managed premises. The requirements also apply to lifting operations carried out by Cellnex UK on third party sites.

## 2. Definitions

Lifting operations are defined as any “operation concerned with the lifting or lowering of a load”. Lifting Equipment is defined as “work equipment for lifting or lowering loads and includes its attachments used for anchoring, fixing or supporting it”.

Examples of the types of Cellnex UK lifting equipment and operations covered include:

- A passenger lift;
- A rope and pulley used to raise tools and equipment;
- Vacuum lifting crane;
- A scissor lift;
- Mobile elevated work platform;
- Ropes and harness used for climbing or work positioning during climbing broadcast and telecommunications structures;
- An automated storage and retrieval system;
- Fork lift truck;
- Hoists e.g. klystron
- Vehicle tail lifts and cranes;
- Hooks, eyebolts, chains, ropes, shackles, harness, fall arrest systems; anchor points.

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### 3. Roles, Responsibilities and Authorities

#### Delivery Managers

Those managers who have control over lifting activities, whether employees or contractors are responsible for ensuring that:

- The persons carrying out the lifting operations are competent to do so and any company contracted to undertake such operations have been approved.
- Suitable and sufficient lifting equipment is available for the activity.
- All lifting activities, including emergency arrangements are adequately planned and controlled to minimise any risk.
- A Cellnex UK Site Attendee is appointed to oversee the work where necessary.
- Risk assessments, method statements and permits to work are completed where required and any information regarding risks are passed onto the persons undertaking the works.
- All examination and testing of equipment is undertaken and recorded.

#### Climbing Team Leader

Team leaders must always be in charge of the planning and execution of lifting operations. They have responsibilities additional to those that apply to individual team members, which include:

- Ensuring the persons undertaking the task have evidence of competence,
- Reviewing risk assessment and method statement,
- Giving a briefing to all concerned with the job regarding any site specific risks and the proposed safe system of work to be employed (as per method statement),
- Ensuring the equipment to be used is suitable and has been inspected,
- Setting up adequate safety zones on the ground i.e. ensuring that adequate signage is displayed to notify persons entering site of the lifting operations,
- Protecting the safety of other parties who enter the site,
- Ensuring that the job is carried out in accordance with the method statement and risk assessment, and any deviations are notified to the appropriate personnel

#### Cellnex UK Site Attendee

Where appointed responsibilities include:

- Ensuring the Contractor is in possession of a valid Authority to Proceed,
- Ensuring the Contractor doing the work is the Contractor named on the Authority to Proceed (i.e. not a sub-contractor, who may not be an approved climbing company),

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- Ensuring the team is adequately skilled and equipped to carry out the task (this may include asking to see the proof of competence),
- Ensuring the Contractor sets up an adequate safety regime, including signs and hard hats for visitors where appropriate,
- Ensuring the contractor only uses suitable robust anchor points i.e. for attachment of winches,
- Issuing permits to work where required.

### Individuals

Individuals are responsible for:

- Not deviating from the method statement and risk assessment without notifying the Cellnex UK Site Attendee,
- Preventing falls of tools, equipment and objects,
- Using only authorised, inspected equipment,
- Knowing their personal limits and not using lifting equipment unless they are competent to do so.

## 4. The Procedure

Every lifting operation involving lifting equipment must be properly planned by a competent person and this plan must be formally recorded in a lifting plan (or specific method statement) that is commensurate with the complexity of the lift and the risk associated i.e. the plan for a helicopter lift will contain much more detail than a lift involving a fork-lift truck.

All lifting plans should include:

- The weight of the load to be lifted
- Details of what lifting equipment will be used and how it will be configured/located i.e. berthing plans or site diagrams
- Details of the relevant competent people involved with the lift i.e. slingers, banksmen
- Details of the control measures required to minimise site specific risks
- For lifting operations on tall masts and towers the lifting plan should also include:
- Drawings/annotated photographs in both plan and elevation showing the position of winches, pilot wires, rigging blocks etc. The installation/landing height must be clearly shown as well as fleet angles of the winch wires. Any building or other structure that may impair the vision of the winch driver should also be included.
- Details of the exclusion zones and fenced off areas to protect winch bonds etc.

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## 5. Inputs & Outputs

### 5.1. Selection of Equipment

Proper planning of lifting operations is a combination of two parts;

- a. Initial planning to ensure that lifting equipment provided is suitable for the range of tasks that it will have to carry out;
- b. Planning of the individual lifting operations so that they can be carried out safely with the lifting equipment provided.

Factors you should consider when selecting lifting equipment so that it is suitable for the proposed task include;

- The load to be lifted;
- Its weight, shape, centre of gravity, availability of lifting points;
- Where the load is presently positioned and where it will be positioned after the lifting operation;
- How often the lifting equipment will be used to carry out the task;
- The environment in which the lifting equipment will be used;
- Choose the right accessory for lifting is it Marked with SWL and does it have an inspection and examination report;
- Check the anticipated path of the load to make sure that it is not obstructed;
- Prepare a suitable place to set down the load;
- Is the load within the SWL of the Lifting equipment does the equipment have an in date inspection and examination report;
- Can you cone or barrier of a safe area to work;
- Is there a means of communication between the operator of the equipment and a banksman on the ground;
- If Loads are to be suspended can you ensure that access to the danger zone is prevented;
- Can the load or carrier to be lifted be attached and detached safely and our the fixings compatible;
- Are there any overhead power lines, telephone lines;
- Trench work and excavations;
- Underground services, drains or sewers; When planning the lift and carrying out the site survey please use the check list form.

### 5.2. Safe Working Loads/Working Load Limits

Safe Working Loads (SWL) are considered to be the breaking load of a component divided by an appropriate factor of safety giving a 'safe' load that can be lifted or carried i.e. a higher factor of safety is required for man-carrying operations than for general lifting.

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The term Working Load Limit may be marked on some equipment instead of SWL. A general definition of WLL is 'the maximum mass or force which a product is authorized to support in general service when the pull is applied in-line, unless noted otherwise, with respect to the centre line of the product i.e. the WLL of a component is specified by the manufacturer.

If the WLL is thought of as an assessment of the maximum load an item could lift under ideal conditions, the SWL can be thought of as being a derating of WLL, following an assessment by a competent person of the maximum load the item can sustain under the conditions in which the item is being used.

A range of SWLs can be specified for the same equipment when used in different configurations and under different conditions. For example a sling with a WLL of 2t when choked will have a SWL of 1.6t. If the sling was to be used in high temperatures the SWL would have to be further down-rated. Wherever possible, the actual value of the WLL should be marked on the equipment. Where the equipment can be used in different configurations, the different SWLs should be marked. If marking is not possible a coding system can be used which easily provides the user with the necessary information.

Examples of such a system may include colour coding or attaching some form of label. If there is a significant hazard arising from the use of the certain types of lifting equipment, they should be provided with appropriate devices such as rated capacity indicators and rated capacity limiters. Equipment which the safe working load can vary within its operating radius includes:

- Any crane which has a jib which can be raised or lowered
- A mobile crane or forklift truck with telescopic jib
- Mobile elevated working platform

When changing the operating radius to corresponding variations in the SWL your risk assessment may indicate the need for a load limiting device to stop the operation if the SWL is in danger of being exceeded or an indicating device which clearly shows the operator the radius and the corresponding SWL. This provides visual and or audible warning if the safe working load for any radius is in danger of being exceeded. Examples of equipment where the configuration can affect the SWL include:

- A fork lift truck fitted with attachment ( such as drum clamp or crane jib
- Fitting a fly jib to a crane
- Using a mobile crane with outriggers in position or free on wheels
- A telescopic reach truck
- An excavator used as a crane
- A jib of a crane that can lift loads at various operating radius
- Any lifting beam with multiple lifting points

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The lifting machinery should be clearly marked with information about how the configuration affects the SWL. This can be in the form of an indicator plate, chart or certificate, which is readily available to the operator.

Where the safe working load of a piece of lifting equipment is not known then you should ensure that this equipment is not used until this value is determined. The manager must contact the manufacturer or supplier or alternatively arrange for the equipment to be thoroughly examined by a competent person. Only if the weight of the load is equal to or less than the SWL of equipment and attachments should it be lifted.

### 5.3. Weather

Whilst mist, fog, low level cloud, rain etc. will not automatically prevent lifting operations taking place on masts/towers, the ground crew must be able to see the 'landing' location on the structure at all times. Rigging and lifting operations should not proceed during heavy rain due to decreased visibility and reduction in operative concentration levels.

Prior to lifting operations taking place, a specific risk assessment must be carried out which identifies recommended maximum wind speeds in which the operation can be carried out.

The acceptability of wind conditions will be dictated by the nature of the wind i.e. gusting, steady, and size and shape of the load. The larger the surface area presented to the wind the greater the effect the wind will have on the load and consequently on the stability of the lifting equipment.

Though weather forecasting services can provide a general idea of the expected wind conditions on a day to day basis for a particular area, they cannot provide an accurate indication of the prevailing wind conditions at Cellnex UK sites. Therefore, where lifting equipment or the load may be affected by high wind, appropriate devices must be used to detect dangerous situations and allow measures to be taken to cease using the equipment.

Where possible an anemometer should be fitted to the structure or lifting equipment (i.e. crane) to indicate wind speeds above ground level. Where this is not possible hand-held anemometers should be used i.e. by climbers on a structure or by crane operators at ground level.

The manager or supervisor for the lift must make themselves aware of the maximum wind conditions that the lifting equipment can be used in.

### 5.4. Competence

Only competent persons must use lifting equipment. A competent person is someone who has the appropriate practical and theoretical knowledge and experience of lifting equipment operations.



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### **Winches**

Only ‘nominated operators’, can operate winches unsupervised within Cellnex UK. Nominated operators who:

- Have attended a suitable training course (within the last 3 years) that covers the type of winches that will be used within Cellnex UK;
- Can demonstrate prior experience of operating the type of winches used within Cellnex UK;
- Have attained C3 climber status.

In order to maintain competence levels within the business, additional persons who have undertaken the mandatory training, can operate winches under the direct supervision of a ‘nominated operator’. To become a nominated operator, an individual must be observed operating various winches by a nominated operator who will make an assessment and report.

A list of all nominated operators must be kept by the Accreditation Team.

Contractors and third party operatives operating winches whilst working for on behalf of Cellnex UK must be able to demonstrate that they are competent i.e. have received training, assessment etc.

### **5.5. Communications**

Good communications are vital during lifting operations particularly on tall masts and tower work.

When lifting loads up a tall structure (in excess of 30m) the primary method of communication between the winch driver and the men landing the load should be by radio. Two radios must be available each end of the link in event of a radio failure. The winch driver should use a radio with head phones as it is not possible to operate the winch safely with one hand.

When the load or cradle is nearing its landing point (approximately 10m from the mast) then the winch driver must be constantly guided in by radio. If contact is lost then the winch driver must immediately stop the winch. No attempt must be made to lift the load again until contact is re-established.

The secondary method of communication can be by hand signals but only in cases where there is very clear vision of the landing point i.e. when the landing point is no more than 100m above the ground and weather conditions are favourable.

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If there is a complete radio communication failure then mobile phones could be used if available and the load / cradle talked up. If there is no way of re-establishing contact then the cradle / load must be lowered back down to the ground. Care must be taken to ensure that all is clear of the mast face and/or aerials.

During man-riding operations air klaxons must be carried in the basket as an emergency back up in case of a complete communication failure.

When using radios, frequencies should be used that will not be accessed/affected by other signals in the vicinity. Radios must be tested for correct operation within shielded man- riding baskets prior to lifting.

When hand signals are to be used as a means of communication i.e. for crane lifts, the signaling protocol must be agreed between all parties prior to the lift. Only competent signalers should be used.

There should be tool box talks each day on what is being carried out and who is responsible for what etc.

#### 5.6. Local Conditions

Attention must be paid to the local conditions, particularly underground cables and overhead power lines, where plant such as mobile cranes are to be used.

The recommended minimum distance from an energised line carried on poles is 9m plus the length of the crane jib or other overhanging part of the plant (this distance increases to 15m for lines carried on pylons). The owner of the energised line may impose a greater distance, particularly for higher voltage lines.

In cases where closer approach is likely, contact must be made with the Local Electricity Distribution Company to isolate the line or to provide goal posts etc. to prevent the plant getting into a position where contact /arcing may occur.

#### 5.7. Designing for Lifting Operations

Designers risk assessments must consider how designed component will be handled and lifted. Where necessary, dedicated lifting points should be provided on the component and be suitably marked. Weights of components must be marked on technical drawings or on the component itself to aid with the planning of lifting operations.

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When designing new structures or new antenna systems for structures, the designer must ensure that lifting operations can be carried out safely in future. On existing structures consideration must be given to the positions of permanent lifting blocks at ground level to ensure that they can still be used following implementation of the proposed design.

Where possible new designs must also consider existing free apertures on the structure that are used for 'landing' of the man-riding basket. Where new systems will impinge on the landing aperture or where they are positioned in such a way that the pilot bond will come into contact with them, a dedicated lifting jib should be included as part of the design.

The Rigging Group should be consulted where proposed designs may affect current arrangements.

## 5.8. Erection Winches

The majority of winches (technically lifting machines are known as hoists) used within the industry are hydraulically driven drum or twin capstan winches.

Care should be taken when laying the bond on to drum winches so that the bond is not damaged through uneven spooling and cutting down through other layers on the drum.

When planning lifting operations the amount of bond layers likely to be taken up on the winch drum and the effect this has on the SWL of the winch must be considered. The winching capacity is dependent on the quantity of bond on the drum due to increased torque on the hydraulics, therefore the following guide applies:

- Bond Drum Empty- 100% Winch Capacity
- Bond Drum Half Full- 50% Winch Capacity
- Bond Drum Full- 33% Winch Capacity

In addition to this, the winch lifting capacity will be reduced by approximately 10% per pulley due to friction losses.

When using a winch with a fairlead pulley for lifting operations on masts/towers, the wire bond must not be routed direct from the winch to a single pulley block mounted at height on the structure as bending of the wire bond around the fairlead pulley will eventually cause damage to the bond. Where possible, the wire bond should be routed through a pulley at the base of the structure up to an upper pulley and down to the load.

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All winches used for lifting operations must:

- Have a minimum of two independent braking systems in case of any failure, one of which will be the gearing and the secondary may be a drum brake etc.
- Have a 'Deadman' operating lever i.e. one that springs back to neutral when the operator releases pressure and cannot be left automatically engaged. All levers must be adequately signed to indicate function.
- Not be capable of freewheeling. If the winch has clutch system that allows the drum to freewheel it must be disabled by being padlocked in the engaged position. All winch bonds must be driven on or off.

Some winches have a back-up system that allows the load to be lowered by manually pumping off the hydraulic brakes in the event of a breakdown. This operation must only be carried out by an experienced operator; for man-riding operations the preferred option is to lower the pilot bond into the structure.

Where winches are to be used for man-riding operations, the winch should be marked with the SWL applicable to that task i.e. a winch with a SWL of 2 tonnes for general lifting can lift a maximum of 1 tonne for man-riding operations. Where the winch has an automatic cut-out system, this should be set to take the differing factors of safety into account (10:1 for man-riding and 5:1 for equipment lifting).

Winches must legally be load tested when new and following any major overhaul or modification. Though not a legal requirement, Cellnex UK will also carry out a load test every four years. The load test for a power winch is the SWL + 25%. This test lift must be done over a full revolution of the gear box and working parts (usually a lift of about 2 metres).

Winches must be attached to a suitable anchor system whilst in use which is equal in capacity to the SWL of the winch.

Operators must be protected from the working parts of winches. Fixed guards must not be removed whilst the winch is in operation. If guards prevent the operator from seeing the bond whilst spooling etc. then the guards should be redesigned to allow visibility.

Exhaust gases from winches should be routed away from the operator position though care must also be taken to prevent fires arising from hot exhausts and fuel sources i.e. dry grass.

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## 5.9. Capstan Winches

The most common capstan winch used within the industry is the A B Chance 1000lbs winch manufactured in the USA. These winches are test loaded by their UK suppliers (AUS of Huddersfield and CBS of Oakham) and stamped with a SWL of 450kg.

The following rules must be adhered to when using capstan winches:

- The Capstan unit must be tested, issued with a certificate and stamped with a SWL.
- All electrical connections must comply with UK regulations and the unit must be PAT tested.
- Every Capstan must have a rope grab fitted. It is not permitted to use the unit without one. It is also not permitted to use the unit at any time for either lifting or lowering without the rope in the grab.
- The Capstan must have a carrying handle/rope preventor which prevents the rope coming off the end of the drum if the capstan accidentally moves on its anchor point.
- The Capstan unit must be anchored to either the structure or another approved anchor point. Capstan winches must not be attached to vehicle tow bars unless a purpose-designed bracket is used. Gate posts, feeder gantries etc. must not be used.
- The correct size and type of rope must be used at all times
- All operatives must be properly trained and be certified every three years.
- The load being lifted, on the Capstan must not exceed the SWL at any time. Strict attention must be paid to this and the additional load exerted by block friction must be taken into consideration. This can be up to 10% per block.
- Capstans MUST not be used for lifting personnel.
- Where Capstans are used to lift a load to a height in excess of 40m, suitable communications systems must be setup to control movement of the load.
- The contractor must provide a proper method statement when lifting steel stating anchor points, weights of the loads and height of the lift.

## 5.10. Lifting Derricks

The installation and use of derricks is very specialised and must only be carried out by competent people; derricks must only be installed and used by C3 climbers within Cellnex UK.

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All derricks must be specifically designed for the job they are intended for i.e. rail or clamped collar systems, and derrick design must be accompanied by comprehensive calculations. Prior to use, derricks must be subject to a structural test load to SWL + 25%.

Derricks must not be used without consultation with the Cellnex UK structural design team to ensure that the structure the derrick will be anchored to can safely withstand the forces the derrick and the load to be lifted will impose. The rig must not be altered during installation or use, without approval from the Cellnex UK structural design team.

### 5.11. Helicopter Lifts

Helicopter lifts may be carried out by or on behalf of Cellnex UK for the installation of antennas/structural components where access to the site/structure would be difficult using conventional means. The person responsible for the planning of the helicopter lift must provide written justification for the choice of method; helicopters must not be used where the job can be done using a safer alternative. Time at risk should be taken into account as a factor when comparing methods i.e. derrick use may increase the amount of work at height required on the structure.

All helicopter operations involving underslung loads (USL) must be approved by the Civil Aviation Authority in the UK. When planning such operations, Civil Aviation Publication No.426 (CAP426) must be adhered to.

Helicopter operations must only be carried out by competent companies with the required level of insurance. The pilots used for Cellnex UK helicopter lifts must have extensive experience of undertaking external cargo sling cycles (ECS) i.e. in excess of 10000 ECS cycles. Persons planning the helicopter lift must satisfy themselves that the pilot to be used has attained this level of competency.

Helicopter lifts must be meticulously planned and regular meetings of all involved parties must take place leading up to the lift to ensure that necessary approvals are gained, a safe method of work is agreed and all risks are adequately controlled. Method statements and risk assessments must be produced for the work and these must be formally reviewed by a member of the SHE Department prior to the lift.

A comprehensive briefing involving all parties must take place on the day of the planned lift to ensure that all activities are properly coordinated and responsibilities are well defined. When all parties are satisfied that the lifts can commence safely, the Cellnex UK Helicopter Lift Project Manager, the Helicopter Contractor Representative and the Airworks' Contractor Representative will sign off the declaration form, which will be retained by Cellnex UK.

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## 5.12. Cranes – Types of Lifts

Cranes are to be used wherever it is safe and practical to do so for mast and tower work in preference to winches and derricks. The use of cranes reduces the time spent rigging structures and eliminates the imposition of loads onto the structure.

Cellnex UK lifting operations using a crane can be managed through either the contract lift method or the hire and use method. Whichever method is used, for any lifting operation using a crane there must be one person nominated as the 'appointed person'.

### Contract Lifts

A Contract Lift (Contract Plant Hire Association) is a turn key operation arranged with a specialist lifting contractor selected as competent to carry out the proposed lifting operation. The lifting contractor provides the following services to complete the lifting operation safely:

- The Appointed Person.(who must not be the crane driver)
- A crane that is suitable for the task
- Suitable lifting equipment.
- Competent driver, slingers, signalers.
- Ensure the safety of personnel not involved in the operation.
- Survey and provision of safe system of work documentation including berthing diagrams etc.
- Under a contract lift it is the responsibility of Cellnex UK to provide the lifting contractor with all known information about the load and the location of the lifting operation in writing.

### Hire and Use Lifts

Cellnex UK (or the user organisation) hires a Crane and Competent Driver to work under the control of an Appointed Person nominated by Cellnex UK.

Cellnex UK must ensure it has suitable insurance cover for the Lifting Operation i.e. all-risk insurance for hired in plant.

The crane Hire Company has a duty to ensure that when a mobile crane is hired out, physical evidence accompanies it, such as a copy of the last examination report. Cellnex UK employee should ensure that this evidence is checked/available.

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### The Appointed Person

The Appointed Person shall be adequately trained and experienced. A general 'Crane Appreciation Course' does not provide the level of training required. Appointed Persons must have undertaken the CITB 'Appointed Persons Lifting Operation' Course or equivalent.

- Description of the task to be undertaken using the crane (the lift plan)
- Details of the load(s) to be lifted. Weight, overall dimensions and CG.
- Maximum height to which the load is to be lifted
- Maximum radius to which the crane will operate during the load lifting
- Crane details
- Site surface and sub-surface conditions
- Use of outriggers
- Confirm the crane and all lifting equipment have been properly tested, examined and inspected.
- The associated risk assessment

The duties but not the responsibilities of the Appointed Person may be delegated to another person where considered appropriate e.g. the banksman may control a light lift on the day of execution. The crane driver must not be appointed to be in control of the Lifting Operation but can stop the lift at any time for safety reasons.

### Organising and Planning

For a standard crane lift i.e. crane under 150 tons, installing a new cabin onto a plinth on the ground then the lift can be controlled and managed using RAMS. In the following circumstances:

- Use of crane above 150 ton
- Complex lifts i.e. crane working at maximum capacity, difficult access, poor ground conditions
- Where road and footpath closures are required

The work should be controlled and managed by the Cellnex UK project manager in accordance with the following.

When a contract, that will involve the use of a crane, is awarded to a contractor, Cellnex UK Project Manager will establish a planning group that will be responsible for formulation and review of a safe system of work for the crane lift. This group will include but will not be limited to:

- Cellnex UK Project Manager
- Cellnex UK Safety, Health and Environment Manager/Advisor
- Principal Contractor Project Manager
- Principal Contractor Safety Advisor
- Crane Agent/Supplier Representative



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Supervising Riggers, Designers and Community Liaison Representatives will also be involved where required.

The Cellnex UK Project Manager will organise an initial meeting involving the group members listed in to establish where necessary, which additional people need to be involved and to set expectations for the project. A Crane Lifting Preparation Checklist will be formulated by the planning group which will include tasks that need to be completed leading up to the crane lift(s).

The Principal Contractor Project Manager will liaise with the Crane Representative and document a safe system of work in the form of risk assessments and method statements.

The duration and frequency of subsequent meetings will be proportional to the complexity of the task, but there must be sufficient meetings of the planning group to assure all members that the required tasks have been completed prior to the day of the crane lift. Task progress will be recorded on the Crane Preparation Checklist which will be updated following each meeting.

The Cellnex UK Safety, Health and Environment Manager/Advisor will review and comment on the submitted RAMS for the crane lift in a timely manner in order that the Principal Contractor can sufficiently address the issues raised.

On the day of the crane lift, the Principal Contractor Project Manager or nominated deputy will carry out a briefing which all operational participants in the crane lift must attend. The briefing will include as a minimum:

- Introductions of key personnel i.e. crane signal person to lead rigger etc.
- Points of contact and chain of command
- Roles and responsibilities
- Access restrictions, protection of third parties
- Viewing areas and facilities
- Sequence of operations including timings
- Task methodology
- Weights of new and existing equipment
- Any proposed change to the method statement and how the change is being controlled
- Emergency arrangements including lift abort procedure
- Opportunity for all to raise issues or concerns
- All participants must sign a task briefing sheet to indicate that they have received and understood the briefing.

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Immediately prior to the crane lift task, the Cellnex UK Project Manager, Principal Contractor Project Manager and Crane Representative will review and amend the Crane Preparation Checklist so that the task status is accurately reflected. When all three parties are satisfied that the lift can commence, they will sign off the checklist which the Principal Contractor will keep; copies must be sent to Cellnex UK and the crane representative.

### 5.13. Ground Anchors

Many of the Cellnex UK tall mast sites have permanent dedicated lifting blocks or lifting saddles on stay anchor blocks that can be used for lifting activities and where possible these dedicated lifting points should be used.

Lifting saddles and anchor blocks are inspected for condition and structural integrity on a one, two or five year basis. However, they may only be used after pre-use inspection and test has been carried out to confirm that they are suitable to take the loads (imposed during the proposed work). This may constitute a pull-test using an item of plant i.e. telehandler and suitable load-cell i.e. piab. Lifting saddles that are found to be damaged must not be used and must be reported to Site Management. Damaged saddles must not be re-bent into shape as this weakens the steel and will result in failure.

Where permanent anchors cannot be used, temporary systems such as sledges and weights should be used. Duckbill anchors are acceptable as long as the ground conditions are suitable, they are installed correctly and tested before use.

The use of non-dedicated lifting points is only acceptable where dedicated permanent or temporary anchor points cannot be used. Anchoring to gate posts, feeder poles, trees etc. is not acceptable. The person responsible for the lift must satisfy themselves that anchor points are capable of taking the loads that will be imposed before use.

### 5.14. Rigging Accessories

When selecting rigging blocks, it is important to recognise what the SWL stamped on the block relates to. The SWL stamped on UK pulley blocks relates to the load that can be lifted but the SWL stamped on American made/style pulley blocks relates to the resultant load that the eye can take. For example:

- UK Pulley Blocks. (Ansell Jones)
- Stamped with 3 tonne SWL- load on the eye is 6 tonne when 3 tonne load applied
- USA Pulley Blocks (Crosby Blocks, Gunnebo Johnson)
- Stamped with 8 tonne SWL- load on the eye is 8 tonne when a 4 tonne load applied

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American style blocks can usually be distinguished as the whole side of the block opens out and the block comes fitted with a head shackle. UK blocks usually have a gate and hook.

Lightweight pulley blocks, rope friction devices etc. that are more commonly used as part of a personal rescue kit must not be used for lifting/lowering of equipment unless stamped with a SWL by the manufacturer.

When winch bonds run up the outside of the structure to the head pulley block a back-up pulley block should be used in the case of failure.

A load cell must be used on all pilot bonds between the tirror and the anchor block to ensure that excessive loads are not imposed on the structure and the relevant safety factor for the rigging equipment is not exceeded. The load cell must also have a SWL based on a minimum 5:1 safety factor. The reading on the load cell must not exceed the safe working load of the weakest component in the rig at any time (the maximum load on a pilot wire is usually when the basket or load is two thirds of the way up the structure).

Crosby clamps and wire stockings must be included as part of the lifting equipment inspection regime. Wire stockings must not be used for joining ropes and bonds together. Where used for lowering feeders wire stockings should be protected against snagging and where possible a secondary system for securing the feeder to the bond should be used.

The minimum diameter wire that should be used for winch or pilot wire is 13mm diameter. The minimum size rope, i.e. Polypropylene, Staplespun, Nelson lay etc. used for lifting and rigging winch bonds must be 16mm.

Ropes used for lifting must be identifiable and the SWL must be known. Where possible, details should be displayed on the rope i.e. through heat shrink sleeves. Where this is not possible, an alternative robust system for ensuring rope traceability must be used.

All rope connections must be spliced together, not knotted. Where rope splicing takes place on site it must only be carried out by a competent person.

Stay Wire Grips often referred to under the generic terminology 'Come-Along' clamps, Klein clamps etc are clamps designed to pull steel wire bonds and rely on tension in the system for correct operation, If used in a lifting operation rather than merely a ground level pull, these clamps must only be used in conjunction with a robust secondary backup attachment such as steel wire slings and 'Crosby' clamps. Rope lashings are not considered an adequate backup.

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### 5.15. Radio Frequency

When working on MF sites fibre slings must not be used i.e. for main head blocks or pilot wire anchors and a minimum of a 16mm wire sling must be used. In addition to the sling, overhead line earths or a suitable equivalent must be connected by a competent person to reduce the build-up of RF.

Lifts in the vicinity of sites with Medium Frequency or high power electromagnetic fields must be planned in consultation with the Cellnex UK RF Safety team. Measures must be taken to minimise the risk of pick up in the lifting equipment/load, where the length of conductive elements corresponds with that of the MF wave length and to avoid RF interference with the cranes computerised systems. There have been such cases of interference at a few Cellnex UK sites, e.g. Droitwich and Brookmans Park.

Digital load cells must not be used on masts where there are live aerials as RF affects the digital readings.

### 5.16. Man-Riding Equipment

Lifting equipment, which is designed for lifting persons, must be appropriately and clearly marked that it is for lifting persons. In addition any carrier, suspended personnel basket or car of a passenger lift should clearly display the maximum number of persons to be carried, and the SWL must be clearly indicated on the carrier. Lifting equipment which may be inadvertently used for lifting people but which has not been designed for this purpose should be clearly marked that it should not be used for lifting people.

The term carrier may be used to describe the following;

- The car of a passenger lift;
- The cage of a construction site hoist;
- A platform on a mobile elevating work platform;
- A cradle suspended from crane or building;
- A bosuns chair
- Harness, rope, slings, used to lift or support people.

Where carriers have access doors they must not open outwards and should be fitted with a device to prevent inadvertent opening. Edge protection should be fitted with a slip-resistant floor. Carriers must be fitted with devices to prevent free-fall, which should be independent from the suspension to prevent the carrier falling in the event of failure of the primary means of support. If a person becomes trapped in a carrier they should be able to summon assistance i.e. through a telephone or radio link within the carrier, or the fitting of an alarm bell or klaxon which can be used to summon help. These devices should be regularly inspected by a competent person to ensure they function properly.

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An emergency means of lowering the carrier to a safe position may be appropriate to deal with a user who has become trapped, though where this is not possible, self-rescue equipment such as a rope ladder could be provided. There is a need to ensure that the use of such equipment does not make the carrier unstable thereby increasing the risk to the user. The use of emergency lowering and self-rescue equipment may only be appropriate where potential users have received training and are competent to use it.

### Setting Up

There must be a visual check carried out on the winch, chair and Musson Fall Arrestor before use each day.

The chair must also be run to at least half of its running height before being used for carrying personnel each day.

Once the mast has been rigged to the required level and the system tested, the winch driver should mark the bond and put a reference peg in front of the winch. This is to prevent the chair accidentally being driven into the head block.

Wherever possible, man-riding rigs should have back up slings fitted to provide an increased level of safety.

### Man-riding Baskets

All man carrying cages or cradles must have a sign stating the SWL of the basket. The number of persons that can be carried will be dictated by the SWL of the fall-arrest device i.e. 545kg on a greasy bond.

All cages/cradles must have a solid floor, kicker plates and meshed sides to prevent anything falling out.

### Fall Arrest

A Musson Fall arrest device must be installed as part of the man-riding rig where possible. Where it is proposed that a Musson device will not be used, the person planning the works must provide the Cellnex UK SHE Department with written justification for the proposals. Concessions may be granted by the SHE Department after consultation with Rigging Group, where:

- a) The rig will be used for carrying out work on the stays i.e. stay-greasing; or
- b) There is insufficient space on the structure to 'land' the man-riding basket when the Musson device is in place; or
- c) An alternative device is used (that prevents the basket from falling).

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Where a Musson device is not used, winch and pilot bonds with an enhanced safety coefficient must be installed and a full inspection of the man-riding rig must be carried out on a daily basis.

The Mussons fall arrest device must only be installed by trained, competent people.

### Emergency Arrangements

The Musson fall arrest device is designed to lock onto the pilot wire primarily in case of a winch failure and the basket running away. However, the unit may also accidentally engage by a sudden jerk on the winch wire i.e. bond slippage following a build-up of turns at one end of the winch drum.

If the Musson fall arrest device locks onto the pilot wire, the following action must be taken:

- The personnel in the basket must liaise with the ground crew immediately to determine the cause of the brake engaging. No attempt must be made to release the brake on the device until the cause of the brake 'firing' has been determined.
- If it is found that the brake has engaged accidentally then it can be released with the hydraulic hand pump (which must be carried in the basket at all times).
- Before doing this it may be necessary to take up on the winch to ensure that it has the full load. The unit can then be re-set and the cage lowered to the ground.
- If there is any doubt as to why the Musson fall arrest has fired, the brake must not be released. The basket must be lowered into the mast using the tirfor so that the personnel can get out onto the structure and anchor the cage off.
- Care must be taken to ensure that the winch and pilot wires do not touch live antennas as there is a risk of burning the wires through RF. Where necessary, the ground crew must liaise with the Cellnex UK switching engineer to ensure that live antennas are switched off.
- If the Musson device locks on a tubular mast the basket should be lifted up to the nearest platform either with another winch or Tirfor so that the personnel can exit the cage. Where the area is free from high levels of RF, personnel may exit the basket using a rescue kit (which must be held in the basket) if the length of the rescue rope is sufficient to reach ground level or a work platform.

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- Once the basket is on the ground the Musson fall arrest device must be taken off the pilot wire and the brake linings inspected for any wear. The unit must be de-activated and made safe before an inspection is carried out. If there is any sign or doubt of damage to the brake linings then the unit must be returned to Musson Engineering for inspection and re-certification.

### 5.17. Mobile Elevated Work Platforms (MEWPS)

These devices (also known as “Cherry Pickers”) may be used within Cellnex UK for panoramic surveys, mounting antennas on the side of buildings etc.

MEWPS must only be operated by competent persons who have undertaken an IPAF approved training program. Users of MEWPs i.e. any person being transported to height by a competent person, do not require IPAF training but must have received training in the use and inspection of harnesses and rescue techniques.

Users of MEWPS within Cellnex UK must be attached to the baskets designated anchor point by means of a suitable fall-protection device. This attachment may be through a fall arrest lanyard only if the MEWP and basket anchor point is rated to take the loads imposed by a fall and if the work taking place is at a height in excess of 5m. Otherwise a work restraint device (which is shorter than fall arrest lanyards) must be used. MEWP operators must not lean out of or leave the MEWP basket when working at height.

A rescue plan including actions to take in the event of equipment power failure must be included as part of the safe system of work for any task involving a MEWP.

### 5.18. Mobile Lifting Equipment

Mobile lifting equipment used within Cellnex UK includes forklift trucks, klystron hoists, pallet shifters etc. Only competent persons must operate mobile lifting equipment. For larger items of plant such as fork-lift trucks and telehandlers, operators must have carried out training with a recognised training provider within the previous 3 years.

The use of smaller items of mobile lifting equipment such as pallet shifters, lifting frames etc. is useful in order to minimise manual handling risks.

The operator of such equipment does not require formal training but their line manager must ensure that a risk assessment is in place for its operation and that the operator has access to it as well as the operating instructions.

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### 5.19. Fixed Lifting Equipment

Fixed lifting equipment is lifting equipment that is integral in some way to its surroundings i.e. trolleys which run along rigid structural joists or beams that are fixed within the structure. Such lifting equipment may be found within Cellnex UK crypts and other places where frequent lifting operations are undertaken.

Fixed lifting equipment often incorporates a chain operated or motorized hoist for lifting and lowering loads. As with smaller items of mobile lifting equipment, operators of fixed lifting equipment must

### 5.20. Examinations and Checks Pre-use Checks

Cellnex UK employees who use lifting equipment must have received appropriate training, information and instruction so that they can carry out pre-use checks on the lifting equipment. The user or operator are the best placed to identify faults or damage to equipment. These checks will pick up faults due to day to day wear and tear and malfunction of safety-related equipment. If any defects are found the operator must report the defect to their Line Manager or competent person to take the appropriate action to rectify it. A trained operator carrying out the checks should be able to identify damage to lifting ropes, lanyards, accessories, harnesses, distortions to shackles and other faults which could affect the safe operation of the lifting equipment or accessories. All lifting accessories should be stored in conditions that do not lead to damage or deterioration.

#### Thorough Examination and Inspection

Thorough examinations, carried out by competent persons are required at several points during the life of lifting equipment;

- Before it is put into service for the first time
- After installation and before being put into service
- After assembly in a new site or location
- After equipment failure, modification, repair or maintenance completed
- Involvement in an accident or dangerous occurrence
- After a significant change in conditions of use and long periods not in use
- Where lifting equipment is being used to lift persons or any accessory for lifting persons at least every 6 Months and in the case of other lifting equipment at least every 12 Months or,
- In accordance with an examination scheme set by the manufacture
- Each time that exceptional circumstances, which are liable to jeopardise the safety of the lifting equipment, have occurred and if appropriate for the purpose is inspected by a competent person at suitable intervals.



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Anyone using lifting equipment and lifting accessories should be able to ascertain that it has been thoroughly examined and is likely to be safe to use i.e. the equipment should be colour coded to reflect its inspection status. It is important that when used outside its normal place of work the equipment is accompanied by appropriate evidence that the thorough examination has been carried out; this would normally be a copy of the last examination report.

If Cellnex UK receives or uses lifting equipment from another organisation, evidence must be obtained that shows when the last thorough examination was carried before it is used.

Any equipment found to be defective must be quarantined until repaired or disposed of.

#### 5.21. Records

Contractors and site sharers must ensure that records of statutory tests and inspections for all lifting equipment being used are readily available on site. This can be through paper records or a suitably accessible electronic database.

When structures are rigged, records for weekly inspections of all lifting tackle must be kept. The competent person undertaking these inspections must ensure that records are well kept and legible.

#### 6. Change Control

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