



Mast and Tower Safety Group

promoting safety and best practice

Guidance Note

GN-012

Climbing Masts and Towers



MATS Group Guidance Note

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1 Purpose

The purpose of this document is to provide safety guidance to consider when climbing and working on telecommunications and broadcast masts and towers.

2 Scope

The guidance given within this document is restricted to climbing and working on masts and towers using PPE and other equipment which should be 'standard issue' for telecommunications and broadcast climbing parties. Masts and towers situated on rooftops are covered within the scope.

This guidance does not cover the use of abseil, rope access or boatswains chair equipment or the use of cherry-pickers and other man-riding equipment.

Working outside the scope of the activities covered within this guidance would require fuller consideration of the hazards and associated risks involved.

3 Training Requirements

The training requirement for any person climbing telecommunications or broadcast masts and towers is as specified in MATS Guidance Note GN-001.

4 Risk Assessment

A risk assessment should be in place for the task and it should be carried out by a competent person. Ideally, generic climbing risk assessments will be added to and made 'site specific' following site survey. However if a survey is not carried out the risk assessment should be amended on site by the lead climber following identification of any additional significant or unusual hazards.

A site specific method statement will also be required where the site provider requires one or when the risk assessment identifies the need for the works to be undertaken in a specific way or following a particular sequence to ensure it is done safely e.g. dismantling.

5 Environmental Conditions

The weather forecast should be checked prior to any climbing taking place and a decision should be made as to whether to mobilise to site based on this. However, as conditions are very changeable and localised (particularly on hilltop locations), the climbing team should be sufficiently competent to assess the ongoing conditions and be empowered to cease the climbing activities if they feel it is unsafe to continue. Climbing should not be undertaken in heavy snow, when ice has accumulated on the structure or where there is a threat of electrical storms.

Climbing in the hours of darkness should only be carried out in accordance with MATS Guidance Note GN-010.

6 Concurrent Working

Concurrent working is where two or more parties are undertaking independent tasks (i.e. not the same package of works) at height on the mast or tower, or where one company is undertaking work at height on the mast or tower whilst another company works at ground level within the 'drop-zone'.

Concurrent working is only permissible in exceptional circumstances. Such work can only be permitted where all other reasonable alternatives have been considered, a suitable and sufficient risk assessment has been carried out and when an individual or company has been given the responsibility to control the proposed operations.

7 Accompaniment

No climber may ascend any structure unless a second person, competent and equipped to climb either accompanies that person on the structure or retains visibility and in contact from ground level.

For climbing activities above 120m, there should be a minimum of three competent and equipped climbers on site (all three persons remaining in contact with one another through radio etc). One of these climbers may remain at ground level but there should be a minimum of two climbers on the structure at all times. There should never be more than 75m distance between climbers on the structure at any time (this is to ensure quick identification of and reaction to any climber that requires attention).

Regardless of the height of the climb, some tasks will require additional resource to be carried out safely; the risk assessment for the task should determine this.

8 Drop Zones

Climbers should take all reasonable precautions to prevent objects from falling from height e.g. use of closable bolt bogs, tethering of hand tools etc. Climbers should never 'bomb' or throw objects from height.

Despite the above precautions, there may be a small residual risk of falling objects, so people at ground level should be further protected.

A 'drop-zone' is an area at ground level in which it is foreseeable that items would land if they were dropped or if they were to fall from a structure.

For guidance on the size of drop-zones, refer to the MATS Group Guidance Note GN-013.

9 Personal Protective Equipment

The following is the minimum PPE required by mast and tower climbers:

- Climbing helmet with chinstrap to CE EN397 or CE EN12492
- Footwear with firm sole, ankle support and clear defined instep
- Full body harness
- Shock absorbing twin-leg lanyard
- Work positioning device
- Fixed fall-arrestors appropriate to portfolio, e.g. latchway, railok
- Personal RF Monitor.

10 Anti-Climb Devices

Access up the ladder on masts and towers may be restricted through the use of ladder plates, locked trapdoors etc. Climbers should ensure that they can remove or unlock anti-climb devices prior to attending site. Anti-climb devices should not be bypassed through use of a portable ladder or other technique unless express permission is given by the owner of the structure and a risk assessment is carried out on the alternative access arrangement.

Some mast and tower ladders do not start at ground level which serves as a form of 'anti-climb' and therefore a portable ladder may be required to get access to the fixed ladder. When a portable ladder is used it should be footed whilst the first climber secures it in position (through tying into structure). Climbers should not attach to portable ladders via their twin lanyard as the ladder will not arrest the fall. Where frequent access to the structure is required in order to complete the task, the climbers should install a retractable safety line system or similar to protect them when using the portable ladder and when transitioning to the fixed ladder.

11 Use of Fixed Fall-Arrest Systems

Fixed fall-arrest systems, of either rigid rail or wire construction, are permanently installed on access ladders or modified face bracings and are used by climbers to maintain 'attachment' to the structure. Where fixed fall-arrest systems are installed they should be used by all climbers accessing the structure unless there is a specific task required such as structural inspection where alternative

climbing protection should be used. As far as is practicable, climbers should ensure that a visual inspection of the system is carried out from ground level to ensure integrity before use of the system. Where inspection tags or plates are positioned these should be observed, adhered to and updated where appropriate.

12 Hooped Ladders

Hooped ladders are not considered an effective means of preventing a fall from height and therefore should not be relied upon in isolation. Where a hooped ladder is in place with or without a fixed fall-arrest system, the climber should employ twin-lanyard techniques to maintain suitable attachment to the structure (fixed fall arrest system should not be used with hooped ladders due to potential for hoops to interfere with operation of fall-arrest system in the event of a fall).

13 Twin Lanyard Climbing Technique

Twin lanyard climbing technique is used extensively on masts and towers to provide a means of 'attachment' to the structure where control measures further up the work at height hierarchy cannot reasonably be implemented.

When climbing or working at height from an 'unprotected' position, the climber should ensure that at least one lanyard is attached to a suitably robust anchor point at all times- thereby ensuring that in the event of a fall the climber will be 'arrested' before hitting the ground.

Lanyards should contain an energy absorbing system which minimises likely forces on the body to <6kN.

Climbers should ensure that lanyard hooks are only attached to undeniably robust anchor points and not studs, feeder clamps, some handrails etc which may fail in the event of a significant applied force. Lanyards should not be 'choked' or attached to vertical anchor points e.g. ladder stiles, due to the lateral forces imposed on the lanyard hook gate. Lanyards should be attached at as high a point as possible on the structure in relation to the climber to limit the potential 'fall-factor'. As a rule, lanyards hooks should never be below the climber's knee level.

Use of the twin-lanyard technique over significant heights is fatiguing and may increase the likelihood of a fall so adequate rest should be regularly taken during the climb, either at purpose-made rest platforms or through attachment of the work positioning device. A specific risk assessment should be undertaken on any climb in excess of 45m where twin-lanyard technique will be used.

14 Alternative 'Attachment' Techniques

Those responsible for planning work at height should ensure that additional equipment is available for climbers so that alternative techniques to the use of twin-lanyards can be employed where necessary. Drop-lines with slide attachments, abseil equipment or retractable lines should be considered as an alternative to lanyards when ascending/descending the faces of large structures; such techniques are less fatiguing on the user and less prone to human-error (through misplacing of lanyard).

Where the faces of large open structures need to be traversed, it is not acceptable for the climber to 'attach' by lanyard to the structural member at their feet (which they then traverse along on foot or by shuffling along on bottom). Ropes should be dropped from above or a horizontal safety line should be set up to attach to.

15 Platforms

Climbers do not need to 'attach' to the structure when working within and on a fully protected platform, i.e. enclosed by a guard rail at least 910mm high with an intermediate guard rail positioned so that any gap does not exceed 470mm. Climbers should attach to the structure whenever the access trapdoor to the platform is open.

16 Related MATS documents

- MATS Group Guidance Note GN-001 – Work at Height Training

- MATS Group Guidance Note GN-005 – Medical requirements for climbing masts and towers
- MATS Group Guidance Note GN-008 – Mast and Tower Rescue
- MATS Group Guidance Note GN-010 – Working at Height in Darkness
- MATS Group Guidance Note GN-013 – Drop Zones

17 Legislation

The Work at Height Regulations 2005

Management of Health & Safety Work Regulations 1999

The information in this document does not absolve contract ors or suppliers from their responsibility to identify and comply with all relevant legislation, regulations and legal standards nor does it take precedence over laws, regulations and external standards