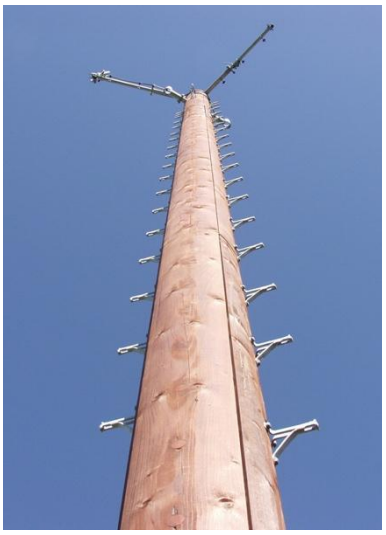
Mast & Tower Safety Group

Guidance Note GN-018

Risk Assessment and Method Statements

(RAMS)



1 Introduction

Regulation 3 in the Management of Health and Safety at Work Regulations 1999 requires employers to undertake a 'suitable and sufficient' assessment of the risks which may prevail for their employees or any other persons who may be affected by work activities. It should be a systematic investigation of the risks involved identifying the persons or equipment affected, the control measures required and any high-risk individuals. Regulations 4 and 5 also require effective health and safety arrangements to be implemented along with any preventive and protective measures that are deemed necessary; these are best set out in method statements. Regulations 4-6 of the Work at Height Regulations 2005 reiterate the requirements. These are all legal obligations. Amongst other relevant legislation is included the Provision of Work Equipment Regulations (PUWER) and the Lifting Operations and Lifting Equipment Regulations (LOLER).

2 Purpose

The purpose of this document is to provide guidance for the preparation of *Risk Assessments and Method Statements* for work at height on rooftops or mast and tower structures with the aim to ensure there is a safe system of work. Example proforma templates are provided in the Annex to this Guidance Note.

3 Scope

This Guidance Note relates to *Risk Assessments and Method Statements* (RAMS) as required for mast and tower climbing, rooftop work and where there may be radio frequency (RF) hazards. It provides general requirements for RAMS documents and what aspects should be considered. It is primarily intended for climbing work but may be used for activities using scaffold towers, mobile elevated working platforms (MEWPs) or with lowerable masts; but it does not include information on how to erect or operate such equipment. For example, while RAMS need to cover lifting operations, this document does not include information on the use of lifting tackle, lift plans and inspections.

4 General

All RAMS documents are to be specific to the structure, its location and the task to be carried out. Generic RAMS are only suitable for use as a template which is adapted accordingly to make it specific. They should address all planned work activity to be undertaken as part of the task (particularly at height), but not just simply include catch-all references to all types of activity. For example, the procedures for use of a cherry picker or a winch are not required unless they are actually to be used. Such information can clutter the documents.

Relevant design, inspection and maintenance information for the structure is to be made available to a climbing team in advance of any climb along with other installation information such as a residual hazards log. This is then used by the competent person preparing the RAMS to ensure they are specific to the structure and its location. For climbing activities, RAMS documents should be accompanied by a suitable and sufficient Rescue Plan for which guidance is offered in MATS GN 008. All these papers should be submitted to the permit issuing authority for their agreement well in advance of the proposed climb.

The roles and responsibilities will vary depending on the organisation and its standard procedures. Key parties include:

- Structure owner or a nominated manager to control access and implement a permit system
- Climbing supervisor or person in charge of climbing activities and the task. This person has ownership of the RAMS documents for any particular climb for which he is in charge.

The protocol is such that these two roles must not be performed by the same person.

5 Task Risk Assessments

The purpose of a task risk assessment (RA) is to identify hazards and risks to which a work team may be exposed, and then to apply appropriate measures to mitigate the risks to an acceptable level. The assessment should also consider anyone else who may be affected whether part of the work activity or not, e.g. 3rd party bystanders or the general public. When briefed to the team, the RA allows them to be

fully aware of all potential hazards or other issues that may affect their tasks. Any precautions or control measures required of the RA should be included in the method statement to ensure there is a safe system of working at height, for both the climbing activities and the task to be undertaken. This also allows the team to demonstrate to others that they have undertaken a suitable assessment, which may then serve as a measure of competence to undertake the climb, as judged by the permit issuer. In the event of an accident, it will be required as evidence by an investigation, and if the risk assessment is not suitable and sufficient, a prosecution is highly likely.

The RA is a written or printed document prepared by a competent person and must be specific to:

- Location (e.g. environmental factors, access or security issues)
- Structure (e.g. height, form, other equipment, residual hazards)
- Task and the work to be undertaken

It must clearly identify this information and describe the task to be carried out. The assessment must take into consideration the information provided by the structure owner, regarding matters such as existing fitted equipment, the condition of the structure and residual hazards.

All hazards are to be identified along with who may be affected and how, and they are to be evaluated for severity and likelihood of occurrence. This information should be listed in a schedule to which control measures are then added aiming to mitigate the risks to acceptable levels. Identified hazards should be managed using the hierarchy: Avoid, Prevent and Mitigate in accordance with the Work at Height Regulations.

Regarding who may be affected, this includes anyone from employees and contractors to customers and the general public, or put simply anyone who could be affected by the work activities.

Risks arise from hazards at the site, structure, its installed equipment, the nature of the work, the people engaged, materials used and environmental factors, examples of which are shown below:

- People falling from height
- Being struck by objects that may fall from height
- Equipment fitted to the structure:
  - Radio Frequency (RF) transmissions and electromagnetic fields (radar, antennae & cables)
  - Electrocution – live power cables, lighting and powered hoists
  - Noise due to warning sirens or public address systems fitted to the structure
  - Machinery, hoists, winches (fitted or temporary)
  - Liquid storage tanks (water, fuel, confined spaces, drowning, fumes, fire)
  - Sharp edges
- Nature of the structure – height, condition, load capability, type (tower/guyed mast)
- Access – ladders, fixed fall arrest systems, man-riding systems, rope/abseiling work, working platforms
- Fragile surfaces (mainly rooftop situations)
- Non-compliant installations, e.g. low handrails and trip hazards
- Weather – wind, sun, heat, cold, wind chill, rain, ice, lightning, light levels (avoiding darkness)
- Local environment – flora, fauna, accumulated bird droppings, noise, dust, emissions from adjacent facilities (e.g. chimneys, exhaust vents) or other atmospheric pollutants
- Site location, its remoteness, accessibility and any local features such as steep slopes, poor/ uneven ground, being overgrown, other adjacent assets or installations and 3rd party property
- Availability of emergency services and how they can access the site
- Buried services for excavation work, ground anchors to fix winch equipment or for heavy plant
- Type of work – size and weight of equipment to be installed, height, lifting operations, paint, flammable or other hazardous substances (COSSH)
- For lifting work, there is a wide range of equipment and techniques, for which the risk assessment will need specific detail for any proposed systems (hoists, pulleys, winches, derricks, craneage)
- Trainees, apprentices or occasional climbers
- Health and fitness of climbers

Suitable mitigation may include:

- Adopting the hierarchy principles of the Work at Height Regulations:
  - Avoid the need to work at height at all or reduce the time need to be spent at height
  - Provide measures to prevent a fall, either collective(preferred) or for individuals
  - Provide measures to minimise a fall and its consequences
- Permit system with control measures detailed
- Drop zone and use of a ground-person as a safety coordinator
- Tool tethering
- Isolation and use of RF monitors
- Work equipment – safe operating instructions, inspection and certification
- Structure information and certification
- Utility services information and ground surveys
- Climber training, qualifications and experience
- Climber logbook information, including medical fitness
- Suitable clothing and PPE
- Documented method statement to set out a safe system of work
- Climbing supervisor to monitor activities of the other climbers
- Meteorological info, weather forecasts and weather monitoring during the climb
- Forward plan where possible, to carry out work in challenging locations during the summer months

Not all the above are always required, while in some cases, all are required and more.

The assessment identifies the required precautionary measures to be taken as part of the task. An example is provided as an Annex herein. The object of this example is to provide a tool to identify and quantify the risks, which can then inform what needs to be in the method statement. Risk assessments can be reviewed at any time and must be reviewed when circumstances change; reviews can be immediately prior to or even during a climb (also known as a dynamic risk assessment). A dynamic risk assessment is not a substitute for a documented assessment which is required prior to issuing a permit to climb. Records of risk assessments should be kept for reference and audit purposes.

6 Task Method Statements

In full consideration of the risk assessment and the identified hazards, the method statement is to set out a "safe system of work" (SSOW) that again is specific to the task, structure and location. It requires effective planning, organisation, control and monitoring along with a review of the preventive and protective measures.

As a health & safety method statement for a SSOW, it should not include technical details or specifications for the work, unless relevant to the safety of the climb (eg. weight of equipment).

The key aspects are: people, equipment, materials and environment (PEME), but not necessarily in that order. For example, as an environmental aspect, the weather forecast needs to be checked early in the process and prior to receiving the permit to climb. The process of communication, control and supervision is also important. The method statement needs to include:

- Location of the site with confirmation of the building or structure to be accessed, its height and details of any fixed access or fall arrest systems
- Description of the task to be carried out, giving the sequence of work and listing any equipment to be installed, its size, weight and other materials to be used; together with the required precautions to ensure the work is undertaken in a safe manner.
- Description of control and emergency measures.
- Competence of the people involved in planning and carrying out works with named supervisors.

- Details of how the RAMS have been communicated to the works team and signatures of acceptance from managers, supervisors and workforce.
- The proposed members of the climbing team are to be listed along with their roles in the team, in particular who is the supervisor and who are named as rescue climbers, and if there are any apprentices. Some work will disallow apprentices to be part of a climbing team.
- Details of all climbing equipment and personal protective equipment (PPE), along with noting the fixed fall arrest system (if any), so the climbers know what they need to attach to and what fall arrest PPE they require.
- List of the required tools and equipment to carry out the work, and how their safe use is ensured (eg. tool tethering).
- Lifting work – As for the risk assessment, the method statement will need to give specific details of any lifting operations to clearly set out a SSOW, including all lifting equipment and techniques to be used along with who is to control and supervise this work.
- Any limitations on work activities, such as wind speeds for lifting, visibility in fog or minimum light levels (more relevant at times of shorter daylight hours in winter).
- Along with acknowledging the need to check the weather forecast prior to the climb, the local site environment needs to be confirmed stating how this is addressed, as it may be a remote location with difficult access, and on soft or sloping ground. Alternatively, it may be in a built-up or industrial area with other hazards presenting risks to 3rd party assets or the general public.
- The means to gain access to the structure needs stating, including details of site boundaries and how close emergency services can get to the site.
- How a safe working area will be established and controlled on the ground, describing the means to cordon-off suitable areas around the structure (drop/exclusion zone) along with any temporary signage that may be required.
- The means of communication, particularly where the working height is beyond the range of vocal communication; and a means to contact key personnel away from the site.
- Some work will require sketches or drawings such as to illustrate temporary works. These may need to be substantiated by calculations to confirm adequacy of anchor points for winching either in the ground or on the structure. Crane berthing plans and details of underground services may also be required.
- Where equipment is to be installed or changed, the adequacy of the structure to support the load needs to be checked and certified by a competent person in advance.
- Other activities include monitoring of the work and climbing activity and for potentially changing weather. Control and supervision of high risk work must be stated, such as to set out responsibilities for lifting operations.
- Means to trace and locate buried services
- Any precautions and control measures identified by the risk assessment such as isolations, use of RF monitors, buried services information, checking of climber logbooks etc.
- Responses for every risk identified in the RA, setting out how each is addressed to ensure a SSOW.

7 Emergency and Rescue Plans

In support of the RAMS, the Work at Height Regulations also require "*planning of work to include planning for emergencies and rescue"* at Regulation 4(2). Advice on mast and tower rescue is given in MATS Guidance Note GN 008. In addition, a proforma template is included as an Annex herein.

8 Annexes

Example templates are included as follows:

- Risk Assessment (blank)
- Method Statement (blank)
- Emergency and Rescue Plan (blank)

9 Related documents

HSG 65 – Managing for health and safety

HSE INDG 163 – Risk Assessment guide - http://www.hse.gov.uk/pubns/indg163.pdf

Workplace (Health, Safety & Welfare) Regulations, incl HSE ACOP L24

Work at Height Regulations 2005

Provision of Work Equipment Regulations (PUWER) incl. HSE ACOP 22

Lifting Operations and Lifting Equipment Regulations (LOLER) incl. HSE ACOP L113

MATS GN 008 – Mast & Tower Rescue

MATS GN 012 – Climbing Masts and Towers

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The information in this document does not absolve contractors 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.

Mast, Tower & Rooftop Safety Programme Part A - Task Risk Assessment					Task Risk Assessment No:	
For use with:	**Task Work Method Statement No:**		**Task Emergency & Rescue Plan No:**		**Permit No:**	

This Task Risk Assessment is to be completed by the individual or organisation proposing to carry out the work & is to be read in conjunction with all the above associated documents. A Risk Assessment in another format may be supplied but must contain all the elements identified here & be acceptable to the AP(WaH).

Structure Ref No:		**Location of Structure:**		**Description & height of structure:**		**Precise work to be carried out:**	

Task Hazards (not limited to examples given below)	**Potential Consequences**	**Likelihood** a	**Severity** b	**Risk Rating** a x b	**Control Measures necessary to reduce Risks to tolerable levels**	**Revised Risk Rating**			**Standard/ Specification or Type of equipment to be used and Risk Owner (if not the PiC)**
						Likelihood a	**Severity** b	**Risk Rating** a x b	
Falls from Height									
Falling Objects									
Structural Failure / Fault									
Access & Egress (Site & Structure)									
Radiation									
Electrical									
Mechanical									

Weather Conditions									
Noise/Vibration									
Fragile Surfaces									
Birds (Psittacosis/ Nests/ Attack)									
Manual Handling									
Lifting Operations									
Public/ Bystanders									
Communications									
Structure (Sharp edges)									
Fitness & Aptitude for Working at Height									
COSHH/Asbestos									
Other hazards									
Other …..									
Produced by:	**Name:**				**Signature:**				**Date:**

Reviewed by AP (WaH):	**Name:**	**Signature:**	**Date:**
Agreed by PiC:	**Name:**	**Signature:**	**Date:**
Briefed to ….	**Name:**	**Signature:**	**Date:**
Briefed to ….	**Name:**	**Signature:**	**Date:**
Briefed to ….	**Name:**	**Signature:**	**Date:**
Briefed by:	**Name:**	**Signature:**	**Date:**

Mast, Tower & Rooftop Safety Programme Part A - Task Risk Assessment	GUIDANCE NOTES

1. These guidance notes have been produced to assist assessors in completing a Working at Height Risk Assessment.

2. The assessment is to be undertaken by a competent person who is able to identify and assess the risks associated with the task, location & structure.

3. The assessor is referred to the Work at Height Regulations 2005.

4. This Risk Assessment is to be specific to the structure, its location and the task to be carried out.

5. All identified risks are to be addressed by the task method statement.

TABLE 1	**Likelihood of Injury**	
Likelihood (a)	**Criteria**	**Rating Value**
Most Unlikely	Probability close to zero	**1**
Unlikely	Injury a conceivable occurrence	**2**
Likely	High possibility of injury	**3**
Most Likely	Injury probable	**4**

TABLE 2	**Severity of Injury**	
Severity (b)	**Criteria**	**Rating Value**
Trivial	Injuries that could be treated by local First Aiders from a First Aid box	**1**
Slight	Injuries that may require more expert treatment at a medical centre/ hospital A&E department	**2**
Serious	Injuries involving urgent hospital treatment	**3**
Major	Injuries involving major trauma or death	**4**

TABLE 3	Risk Rating & Action Required	
Risk Rating (a x b)	**Action Required**	
1 or 2	Existing control measures may be considered adequate	A low rating does not make any risk insignificant. All risks are relevant and are to be addressed by the task method statement.
3 or 4	Consider introduction of additional controls or supervision	
6 or higher	Additional controls are required in the Safety Programme & Permit to Climb	
*The **Risk Rating** is determined by multiplying the **Likelihood** by the **Severity (a x b)***		

Mast, Tower & Rooftop Safety Programme Part B Task Work Method Statement	Work Method Statement No:	

For use with:	Task Risk Assessment No:		Task Emergency & Rescue Plan No:		Permit No:	

NO PERSON IS TO CLIMB UNLESS THERE IS NO OTHER REASONABLY PRACTICAL WAY OF EXECUTING THE TASK

This Work Method Statement is to be completed by the individual or organisation proposing to carry out the work & is to be read in conjunction with all the above associated documents. A Detail Sheet in another format may be supplied but must contain all the elements identified here & be acceptable to the Authorised Person (Work at Height).		
Reference Number of Structure to be climbed:		
Precise location of Structure to be climbed: (preferably including map reference)		
Description and height of structure (e.g. Tower, Mast, Rooftop etc):		
Precise route & access to structure (Identify any gates / ACD's / doors / vehicular limitations):		
The precise work to be carried out is: (NO other work is to be carried out without: prior notice, revision to this documentation or AP(WaH) agreement.		
Is the task Routine or Non Routine Work?		
Date and duration of task:	Date	Task Duration

The following are the minimum numbers of personnel necessary to execute this task safely (tick appropriate boxes for role)

Proposed team members (List names)	Climber Grade (to be stated)	Person in Charge	Climbing Team	Rescue Team	Non-climb role (coord)	First Aid trained

The required climbing/access equipment is to be listed here, including: Personal Protective Equipment, Fall Protection Equipment, Work Restraints, Rescue Equipment, any specialist access equipment, RF monitors or other work equipment, eg. for lifting & lowering operations. (List the equipment and persons to whom it is provided)	Equipment	Qty	To whom provided

ISOLATION MEASURES 1: Electrical Energy System risks. **The following sources of electrical energy, stored pressure & potential energy are to be isolated for the duration of this task:** **(The precise point of isolation is to be noted here & for complex isolations a schematic is to be appended to this Safety Programme).**	
ISOLATION MEASURES 2: Radiation Hazard risks. **The following sources of Radiation are to be isolated for the duration of this task:** **(The precise point of isolation is to be noted here and for complex isolations a schematic is to be appended to this Safety Programme).**	
Other specific safety precautions to be taken particular to THIS site and THIS task: **(e.g. Traffic Controls / Access Controls).**	

The sequence of how the work is to be carried out: (add rows to suit)

Serial	Pre Climb:
01	
02	

03	
04	
05	
06	
07	
08	
09	
Serial	**During the Climb:**
01	
02	
03	
04	
05	
06	
07	
08	
09	
Serial	**Post Climb:**
01	
02	
03	
04	
05	
06	
07	
08	

Produced by:	Name:	Signature:	Date:
Reviewed by AP (WaH):	Name:	Signature:	Date:
Agreed by PiC:	Name:	Signature:	Date:

Briefed to:	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:

	Name:	Signature:	Date:
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	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:
By:	Name:	Signature:	Date:

Mast, Tower & Rooftop Safety Programme Part C Task Emergency & Rescue Plan	Task Emergency & Rescue Plan No:	

For use with:	Task Risk Assessment No:		Task Work Method Statement No:		Permit No:	

IT MUST BE REMEMBERED THAT THE ONSET OF SUSPENSION SYNCOPE CAN OCCUR WITHIN 5 MINUTES OF A FALL

This Emergency & Rescue Plan is to be completed by the individual or organisation proposing to carry out the work & is to be read in conjunction with all the above associated documents. An Emergency & Rescue Plan in another format may be supplied but must contain all the elements identified here & be acceptable to the AP (Work at Height).

RESCUE DETAILS

How is the rescue to be carried out? *(Delete if not applicable):*	In-Team Rescue	Using Emergency (Fire & Rescue) Services

USING CLIMBING TEAM RESOURCE TO RESCUE THE INJURED CLIMBER ***(Delete section if not applicable):***

Names of Rescue Team members:	Expiry date of rescue training	Trained on (name of rescue equipment)
Is the nominated PiC a rescue climber?	Yes / No	
If 'Yes' who is the Nominated Rescue/Safety Coordinator? *(The Safety Coordinator does not have to be a trained rescue climber but must be able to coordinate & take the appropriate action detailed in this plan should it be required)*	Name:	

RESCUE TEAM EQUIPMENT

Equipment to be used for the rescue:	
Location of rescue equipment:	
Date of last formal inspection of rescue equipment:	

Are Rescue Team in date with rescue training / practice? (Evidence to be produced)	YES / NO	Expiry date:	

Are the Rescue Team trained on the specific rescue equipment? (Evidence to be produced)	**YES / NO**	**Expiry date:**	
FIRST AID TRAINED PERSONNEL: (List names)	**Level of Training / Practice**	**Date**	
First Aid Equipment available & supplied by:			
Location of the First Aid Equipment:			

AVAILABILITY OF EMERGENCY MEDICAL SERVICES:

Which Medical Emergency Services are to be used? ***(Delete as applicable)***	**Establishment/ site (on site)**		**Local Authority (off site)**	
Medical Emergency Service contact details:	**Tel No:**		**Radio :**	
Meeting Point with Emergency Medical Service:				
Who will meet Emergency Medical Service:				

Serial	SEQUENCE ACTIONS TO BE TAKEN IN AN EMERGENCY (incl. means to manage suspension syncope)
01	
02	
03	
04	
05	
06	
07	
08	
09	
10	
11	
12	
13	
14	

15	

Produced by:	Name:	Signature:	Date:
Reviewed by AP (WaH):	Name:	Signature:	Date:
Agreed by PiC:	Name:	Signature:	Date:
Agreed by Nominated Rescue/Safety Coordinator (If PiC not acting in that role):	Name:	Signature:	Date:

Briefed to:	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:
	Name:	Signature:	Date:
By:	Name:	Signature:	Date: