**FQM LIMITED**

**Working at Height**

1. **PURPOSE**

The purpose of this procedure is to define a safe system of work covering the planning, risk assessment, execution, monitoring and review of working at height operations carried out at all [COMPANY NAME] sites.

The overall aim is to reduce the risk of incidents occurring that could cause harm to people, the environment, assets and/or reputation.

The process described within this procedure has been developed to comply with the Working at Height Regulations 2005.

1. **SCOPE**

The Work at Height Regulations came into force in April 2005. The regulations apply to all workers in the UK. The regulations set out a simple hierarchy for managing and selecting equipment for work at height. This should be used to assist in making the appropriate decision for Work at Height. Always start by questioning the need to carry out Work at Height, step 1, and progress through the hierarchy as required.

1. **AVOID – AVOID WORK AT HEIGHT WHERE PRACTICABLE.**
2. **PREVENT** – Use work equipment or other measures to prevent falls where Work at Height cannot be avoided.
3. **MITIGATE** – Where the risk of a fall cannot be eliminated, use work equipment or other measures to minimise the distance and consequences of a fall should one occur.

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| **HIERARCHY (in Order of Priority)** | **METHOD of FALL PROTECTION and PREVENTION** | **EXAMPLE** |
| **1** |  AVOID |  NONE | Is the work at height actually required. Design out the need for work at height by performing the operation from an area not designated as Work at Height. |
| **2** |  PREVENT | COLLECTIVE PROTECTION | Fabricate walkways, handrails or suitable forms of edge protection. |
| **3** | COLLECTIVE PROTECTION | Use of scaffold, cheery picker or scissor lift. |
| **5** | WORK RESTRAINT | Work restraint lanyard i.e. No fall potential. |
| **5** | MITIGATE - Use PPE to minimise fall distance and consequences | WORK POSITIONING | Work positioning techniques (with fall arrest back-up). Rope access techniques (using competent personnel). |
| **6** | FALL ARREST | Fall arrest techniques (lanyards, inertia reels etc.). Safety nets. Soft landing systems (e.g. airbags). |

The Work at Height Regulations also requires duty holders to ensure:

* All work at height is properly planned and organised.
* All work at height takes account of weather conditions that could endanger health and safety.
* Those involved in work at height are trained and competent.
* The place where work at height is done is safe.
* Equipment for work at height is appropriately inspected and maintained.
* The risk from fragile surfaces are properly controlled.
* The risks from falling objects are properly controlled.
1. **INTRODUCTION**

Work at height involves all work activities where there is a need to control the risk of falling from a distance liable to cause personal injury. This is regardless of the work equipment being used, the duration of the work, or the height of the work. Examples of Work at Height include but are not limited to:

* Working on a scaffolding or from a mobile elevated work platform (cherry picker).
* Climbing permanent structures such as vessel masts.
* Using ladders, stepladders or kick stools.
* Using man riding baskets.
* Working close to excavations or opening where someone could fall in such as dry dock ledges.
* Working on the back of a lorry.
* Access to and egress from such places of work.

Whenever practicable, Work at Height should always be avoided as the risk of serious injury exists from even the smallest fall from height.

Where avoidance is not practicable, Work at Height must be effectively managed i.e. properly planned: appropriately supervised; and carried out in a safe manner. Suitable precautions must be taken where there is a risk of injury from a fall, irrespective of the height of the work task being carried out. There is no “Two Meter Rule”.

1. **RESPONSIBILITIES**
* **Operations Managers** are responsible for:
	+ Implementing the requirements of this procedure at their specific sites and ensuring all employees follow this working at height procedure.
	+ Overall accountability for working at height at their site.
	+ The co-ordination of all working at height operations carried out on site via daily Planning Meetings.
	+ Ensuring any deviations from this procedure are risk assessed and formally approved and recorded together with a copy of the risk assessment and any necessary additional precautions.
	+ Ensuring all scaffolding erected on-site is by an approved supplier.
	+ Appointing suitable persons to take responsibility for performing the functions of competent people as required by this procedure during working at height operations.
* **HSE Manager** is responsible for:
	+ The implementation of this procedure at all [COMPANY NAME] sites and ensuring all employees follow this working at height procedure.
	+ Ensuring personnel on site that have been sufficiently trained or are deemed competent to carry out working at height operations.
	+ Organising any refresher training for the above personnel.
* **Foremen/Chargehands** are responsible for:
	+ Ensuring, as suitable responsible persons, that working at height operations are carried out and followed as set out in this procedure.
	+ The co-ordination of all working at height operations carried out on site via daily Planning Meetings.
	+ Carrying out a toolbox talk prior to any working at height operations commencing.
* **All Employees** are responsible for:
	+ Working to and following the requirements of this procedure and associated Risk Assessments.
* **H&S Advisors** are responsible for:
* Checking all working at height operations are being carried out under the requirements of this procedure.
* The filing, for reference, of all completed permits to work.
* Ensuring all harnesses are certified and checked on a six-monthly basis.
1. **PROCEDURE**
	1. **Competency and Training**

Before undertaking any work at height, personnel must have appropriate information, instruction, and training and or be deemed competent to work in a safe manner. It is the responsibility of the company to ensure that any personnel who are required to work from height on any Dales Marine services site, have the necessary competence. Training shall be provided through the induction process, communication of risk assessments, on-line IOSH training and or external training provider. Competency will be evaluated by the employees industry experience and monitoring of the employees work methods, work planning and safety awareness.

* 1. **Risk Assessment**

All work at height is required to be risk assessed in line with the company risk assessment procedure xx-OP-001 Hazzard Identification and Risk Assessment. The hierarchy for managing and selecting equipment for work at height should be used to assist in determining the controls required to ensure work at height is conducted safely. The following flowchart should be used to determine which control measures to employ in order to carry out a work at height activity safely.

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* 1. **Equipment**

**Collective Measures of Protection (Guardrails, Toe-Boards, Working Platforms etc.)**

Guardrails should be positioned so that a person cannot fall over, under or between them.

Working platforms can be defined as any platform used as a means of access to or egress from a place of work. It includes any scaffold, suspended scaffold, cradle, mobile platform, trestle, gangway and stairway.

All working platforms should, rest on a stable surface which is suitable to support the structure and any loads intended to be placed upon it and be prevented from inadvertently moving, if a wheeled structure.

When erecting, modifying or dismantling a working platform and its supporting structure it should be done, by a competent person, in such a way to ensure it remains stable and avoids accidental displacement.

A working platform and its supporting structure must never be loaded in a way to give rise to a risk of collapse.

**Scaffolding (Including Aluminium Systems)**

* Scaffolding is a temporary structure which allows access and egress for persons to work areas, and which provides support for the materials used in construction, maintenance, repair or demolition work.
* The erection, dismantling and alteration of scaffolding must be carried out by competent persons under competent supervision.
* All materials used in scaffolding construction must be in a good condition and be inspected by a competent person on each occasion before use. A suitable “Scafftag” should be attached to all scaffolding detailing whether the scaffold is safe to use and if so, the maximum loading permitted.
* Scaffolding must be securely supported or suspended, and where necessary braced to ensure stability. Unless constructed as an independent scaffolding, it must be rigidly connected to the vessel or structure (not to pipework).
* Loose articles and materials must be kept to an absolute minimum on scaffolding platforms; all necessary precautions must be taken to prevent objects falling from scaffolds, e.g. by the use of toe-boards.
* During dismantling of scaffolding, tubes and fittings shall not be dropped to the deck/ground but always carefully lowered. Tubes shall be stacked flat and fittings collected into bags or containers.

Aluminium scaffold can be used on Dales Marine Services sites providing certain criteria, training, management and application is adhered to.

* Personnel must be PASMA trained and competent in the erection, dismantling and understand the capabilities of a scaffolding system.
* Pre-use and weekly inspections are carried out in accordance with standard procedures.
* Wooden scaffold boards not to be used on aluminium scaffold.

**Inspection of Scaffolding**

* Scaffolding shall be inspected by a competent person before it is first used and then at least once every seven days. It shall be inspected following any alterations and also if it is has been exposed to weather conditions likely to affect its strength or stability.
* Details of inspections must be recorded by the contractor.
* “Scaftags” shall be used on all scaffolding structures, whether complete or part complete/dismantled to indicate that the scaffolding is or is not safe to use. Tags must be positioned prominently at access points to scaffold structures.
* When scaffolding is incomplete (whether partly erected or dismantled) or considered to be unsafe for any reason, the “scafftag” must be pulled and displayed as “Do Not Use”. In addition, access to the scaffold shall be barriered off as soon as practicable.

**Collective Safeguards for Arresting Falls**

Collective safeguards for arresting falls include nets, mats and inflated devices that are designed to catch a falling person. When using this type of equipment, a risk assessment must have demonstrated that the work activity can be performed safely with the safeguard in place. This risk assessment should have taken into account additional hazards such as weather etc.

All personnel should have received adequate training specific to the safeguards, including rescue procedures.

The safeguards shall be of suitable and sufficient strength to arrest the fall of any person who is liable to fall.

When using this equipment, the manufacturer’s instructions should be followed.

**Ladders**

The use of ladders should be assessed to demonstrate that alternatives are not justified because of the low risk and/or the short duration of the job, or unalterable features of the work site make alternatives hazardous in themselves. The standards for temporary access ladders (scaffolds etc.) is Tuffsteel Ladders, but wooden ladders can be used for specific locations/applications.

**Control of Ladders**

* Wooden ladders must not be painted or treated in any way that would hide or conceal any defects.
* Wooden ladders with metal reinforcing stiles and/or rungs must not be used near exposed live equipment.
* Ladders should be inspected before use for damage or deterioration.
* Any ladders found to have damage or deterioration should immediately be taken out of service and marked “Do Not Use”.

**Safe Use of Ladders**

Safe working procedures with the respect to the use of ladders should consider the following:

* Ladders must be of sound construction and suitable for the purpose or the job which is to be done. They should be long enough for the job and must not be lashed or spliced together to obtain extended height.
* Ladders must be well maintained, clean and free from oil and grease.
* Any surface on which a ladder rests must be stable, level and firm, strong enough to support the ladder and any load that may be placed upon it. Ladder stiles must not be propped up or packed for support under any circumstances.
* Ladders should be sited in such a place that they are not causing a hazard or placed anywhere that they may be struck or dislodged. Barriers should be placed around the foot of the ladder as added protection where necessary.
* Ladders should not be placed or lent against any fragile surface or fitting.
* Ladders should be sited clear of any hazardous materials.
* Ladders should be set, as near as possible, at an angle of 75$°$ (1 meter out to 4 meters up).
* When in position a ladder must extend at least I meter above the landing place, or above the highest rung reached by the foot of the person using it.
* When in use ladders should be securely lashed at the top and wedged at the foot or held in position by a second person.
* Ropes or lashing which are used to secure a ladder must be in good condition.
* Ladders must not be secured by their rungs; lashings should be around the stiles, or ladders ties should be used.
* Lashing or clamping ladders at the mid-point will make them safer and help to prevent sway, particularly with ladders that are over 6 meters in height.
* Ladders which have metal reinforcing must be used with the reinforcing on the underside of the rungs.
* When climbing or descending a ladder, both hands must be kept free for holding onto the rungs.
* Only one person should be on the ladder at any one time.
* Tools and materials required for work can be carried in a shoulder bag, on a special belt, or be hoisted up or lowered afterwards, provided this complies with local site rules.
* Tools not in use should be hooked or otherwise secured to the ladder.
* Ladder rungs must not be used to support scaffold boards for use as a working platform.
* Care should be taken when carrying ladders to prevent injury to other persons and/or damage to equipment. Normally a short ladder may be carried comfortably by one person but longer ladders should be carried horizontally by two people.

**Inspection of Ladders**

Routine inspection of ladders should be undertaken on a regular basis of at least once every 3-6 months. During the inspection of ladders, attention should be paid to the following potential defects:

* Warped stiles.
* Excessive cracks/splintering.
* Excessive wear and tear, particularly at the head or foot of the stiles.
* Broken, missing, lose or worn rungs, particularly where they connect to the stiles
* Mud or grease on the rungs.
* Rungs supported solely by nails, screws, spikes etc.
* Decayed timber, or the corrosion of fittings.
* Condition of any ropes, cords, pulleys, hinges and other fittings.

**Safe Use of step Ladders**

In addition to the above guidance for the safe use of ladders, the following points should be considered with the respect to the use of stepladders:

* The treads, hinges, bolts, screws and fixing must be sound and secure.

If stepladders are the chosen method of access, then the following restrictions apply:

* Work should be of short duration.
* Light work only.
* Stepladder should be in good condition, placed on a level footing and fully extended during the work.
* A second person footing the stepladder should be utilised where possible.
* 3 points of contact when ascending/descending.
* Do not overreach.
* Do not work off the top two steps.
* Keep both feet on the same step throughout the task.

**Fixed Vertical Access Ladders**

Fixed vertical access ladders can be defined as any permanent ladder used for vertical access (including those fitted with a back scratcher) and/or any temporary vertical access ladder arrangement.

In order to establish the best means of fall protection the Hierarchy of Fall Prevention and Protection should be referred to (see section 2.0 Scope). Consideration should be given to the frequency of use, height and location of ladder when assessing the fall potential.

The Hierarchy states that the first consideration should be to eliminate the requirement to use the ladder. E.g. can equipment be moved to a lower level to prevent the requirement to use the ladder for access?

If this is not possible, however an alternative access is available e.g. a stairway, then signs should be erected advising that the ladder is for emergency access/egress only and the alternative access should be used.

If the provision of alternative access is not feasible then an appropriate fall protection system should be implemented. Possible means of protection include fixed rail type fall arrest or an inertia real and lifeline.

**Rope Access Equipment**

Where it is not possible to work from existing permanent structures and the use of a scaffolding work platform is not appropriate, a range of mobile access equipment and rope access equipment may be used subject to completion of a suitable and sufficient risk assessment.

In such circumstances a specialised outside contractor will be brought onto site to carry out the work task, no Dales Marine Services employees will undertake any work be means of Rope Access Equipment. The following conditions will apply to all operations involving the use of Rope Access Equipment:

* All equipment should be fully certified in accordance with the relevant legislation.
* The contractor’s safety procedures must be approved by the company HSE Manager and adhered to at all times during such operations.
* All operations must be carried out under a Safe System of Work.
* Warning notices must be posted indicating overhead work in progress and barriers erected if necessary.
* Radio communications should be established with the main Operations Office.
* Weather conditions must be considered.
* Personnel involved in rope access operations must be trained, competent and adequately supervised. Particular attention should be paid to emergency and evacuation procedures.

**Fall Protection equipment**

When an individual may be exposed to a fall that can cause injury, the person may be required to use fall protection systems to reduce personal injury in the event of such a fall. The Risk Assessment will identify this.

These systems contain a body harness, lifeline, lanyard, connector and anchorage point. They include:

Work restraint: a system consisting of the equipment used to prevent a person from reaching a position from where a fall could occur.

Fall arrest: a system used to stop a worker from hitting a solid surface, should a fall occur.

**Inertia Reels**

Two types of inertia reel systems can be utilised when working at height.

Use of retrievable fall arrest block that would be commonly used for over the side work or on multiple levels.

Use of light weight fall arrest block that would be commonly used for inboard work where no risk of an increase in height is likely to occur; using portable ladders (inboard), and mobile elevated work equipment.

**Anchor Points**

Wherever available a dedicated tested anchor point, e.g. certified lifting point should be used. British Standard Guidance states that for single person use, an anchor point with a minimum static strength of 12kN should be used for a personal fall system that could be called upon to arrest a fall. Where completed scaffolding is to be used as an anchor point during work at height, the static strength can be obtained from the “Scafftag” and should be checked before use.

Where uncertified steelwork is to be used as an anchor point during work at height e.g. handrails, pipework, bulwarks, steelwork and/or beams, the most substantial and robust anchor point must be chosen. If there is any doubt regarding the suitability of any anchor point then the Operations Manager will seek clarification on the suitability of the anchor point through an independent Inspection Engineer.

If no suitable anchor points are available, then the possibility of creating a certified anchor point will be explored. This can be achieved by welding for e.g. a padeye to the vessel hull, this anchor point will then have to be certified by an independent Inspection Engineer.

**Equipment Storage and Issue**

When not in use, fall protection equipment shall be stored in a clean, cool, dry area, away from chemicals, corrosive elements, sunlight/UV and/or temperatures that could have an adverse effect on the integrity of the equipment.

All employees will be issued with a personal safety harness on commencement of employment with the company. In all cases a record shall be maintained to monitor the use and inspection of this equipment. Personal safety harnesses will be stored in employee’s lockers.

**Cleaning, Inspection, Maintenance and servicing**

Prior to use all equipment should be visually inspected by the user for any visible, wear, deterioration or damage and ensure all equipment is in a serviceable condition.

Fall protection equipment should be cleaned regularly. The frequency will depend upon the conditions in which it is being used. Deposits of dust, mud, grease etc. should not be allowed to accumulate to such an extent that performance and strength would be adversely affected.

Equipment found or suspected to be damaged or unserviceable in anyway shall not be used until the service agent has carried out necessary repairs. The equipment should be taken out of use and taken to the main store for return to the service agent.

Any personal harness found or suspected to be damaged or unserviceable in anyway shall not be used. They should immediately be returned to the site H&S Advisor to be taken out of service. The site H&S Advisor will issue the employee with a new personal harness.

Blocks, like all mechanical devices, require periodic servicing to ensure that they remain in a safe working condition. An authorised service agent or the manufacturer must carry out all servicing.

All blocks must have a load indicator on (to be able to tell if a fall has occurred on the equipment). In the event of a block being subjected to a shock loading it must immediately be removed from use until it has been examined, repaired if necessary and re-set by an authorised service agent.

All equipment in use during a fall must be immediately be removed from use until it has been examined and repaired if necessary.

**Rescue Plans and Equipment**

If working at height cannot be eliminated, then measures shall be set up to reduce the risk to as low as reasonably practicable. The need for a rapid and effective rescue is particularly important where a delay may have serious consequences to the individual due to the damaging effects of the fall and the pressures applied to the body from a harness.

Prior to undertaking work at height, a suitable and sufficient risk assessment shall be carried out detailing the rescue plan that shall be used in the event of an incident occurring. Generic procedures may be developed however; these shall be amended for relevance to that specific task prior to work commencing. All involved parties shall be made aware of the rescue plan, to ensure a rapid and effective rescue is possible. This will be done through the toolbox talk carried out prior to the work commencing.

Refer to xx-ERP-003 Work at Height Rescue Plan.

Example areas to consider prior to undertaking work at a height.

* The location of the work
* Access for the emergency teams
* Provision of communication equipment
* Number and experience of work team
* Any surrounding hazards e.g. working in close proximity to hot pipes, electricity cables, etc.
* First aid provisions on site
* Means of raising the alarm
* Availability of equipment such as crane with man basket, cherry pickers and/or scissor lift for rescue

The findings of these questions should be communicated to all involved in the task during the toolbox talk.

Personnel who are wearing a harness for work at height must ensure that it is fitted with suspension trauma straps. The purpose of these is to prolong the allowable suspension time for a conscious person who has experiences a fall from height. Personnel should be trained and competent in the use of suspension trauma straps.

* 1. **Dropped Objects**

Where necessary suitable steps must be taken to prevent the fall of any material or object. If it is not reasonably practicable, you must ensure that no one is injured by anything falling.

If the workplace contains an area in which there is a risk of someone being struck by a falling object or person, you must ensure that the area is clearly indicated and that (as far as reasonably practicable) unauthorised people are unable to reach it by erecting barriers etc. as required.

* 1. **Fragile Surfaces**

Work should not take place on or near a fragile surface unless it is not reasonably practicable to complete the work another way.

Any building or surface with a fragile roof, e.g. PVC sheeting, etc., must be marked with a prominent warning notice affixed to the approaches of the areas of fragile roofing. Persons must not step on any part of such a roof, and where persons must gain access to such a roof, crawling boards must be used. If crawling boards cannot be used then a properly constructed scaffold shall be erected.

Any roof which is regularly frequented by personnel for any purpose must be fitted with a guard rail and toeboards to prevent falls.

A roof with a pitch of more than 30$°$ must also be fitted with secure crawling boards in addition to guard rails and toeboards if used for access.

Note: Permanent guard rails, toeboards and safe access must be provided where flat roofs are used as storage or laydown areas (fragile roofs must not be used for storage).

If a risk remains to the worker then these risks must be minimised as for any other fall from height.

* 1. **Cherry Pickers and Mobile Elevated Work Platforms (MEWP)**

When using MEWP a safety harness must be worn and attached to a secure anchor point at all times. The safety lanyard must be restricted to a length where it is not possible for the wearer to climb from the platform basket/cage. The only exception to this rule is when working over water, see section 4.8 working over water. Do not sit stand or climb on the MEWP guard rails.

Only trained, certified and competent personnel are authorised to operate MEWPs. Do not overload the platform, there should be no more than two people within the basket/cage at any one time.

When moving around the site and or dry dock area the MEWP hazard lights should be turned on, the vehicle horn should also be sounded when approaching blind corners and entering workshop areas. Operators should have a clear view of the direction of travel, if this is not possible then a banksman should be used as a guide. Check for overhead obstructions such as power lines or other possible hazards prior to commencing work or moving around the site and or dry dock area.

Keep tools to a minimum inside the MEWP to prevent the risk of dropped objects. Safety signs and barriers should be put in place to establish a safe working zone and prevent unauthorised personnel encroaching into the work/operating area of vehicles.

Do not use MEWPs in adverse weather conditions such as high winds.

* 1. **Working Over Water**

When work is performed over water (i.e. outside the protection provided by safety barriers, fencing or beyond the edge of the quayside), then other precautions shall be provided.

Temporary platforms, scaffolding, MEWP, crane with man basket, safety sheets or nets shall be used, if practicable.

When working over water a safety harness should be worn to prevent falling and also a flotation device should be worn at all times.

If working from a MEWP or crane with man riding basket then flotation device and a safety harness should be worn and connected to an anchor point when manoeuvring the equipment into position. The harness should then be disconnected from the anchor point when in close proximity of the water.

If there was to be a failure in the equipment and the man basket or MEWP were to fall into the water and sink, the flotation device could restrict or hamper an attempt to detach the safety harness from the anchor point.

* 1. **Decommissioning Work**

While undertaking the decommissioning of vessels a large portion of the work will involve work at height. The decommissioning of a ship is a constantly changing environment with new risks and hazards occurring on a daily basis as work progresses.

The very nature of the job is to remove edge protection and steelwork/superstructure creating spaces where a fall from height into an area below deck level is extremely likely to occur if safety procedures are not put in place and followed.

As work progresses the level of risk increases, and as such the preventative measures must also rise to control this risk. Personnel are required to wear a safety harness during all steelwork/superstructure removal work and this harness should be fixed to a secure anchor point. If an anchor point is not available in the working area then a hole should be cut in steelwork to be used as a secure anchor point. If an employee is removing edge protection while the vessel is still afloat then a flotation device should also be used work while carrying out this work.

Edge protection such as the vessel bulwark should be left in place for as long as possible. As the superstructure is removed, the final section should be cut at 1 meter above the deck level leaving an edge protection round the entire deck area. While this is not vital during the first stage of work with the vessel still afloat, it will provide more safety once the vessel is taken to the dry dock for the second stage of the decommissioning process. If edge protection has to be removed prior to the vessel entering dry dock, then this should be replaced by a fixed welded handrail 1 meter in height with a second rail at the half way point to prevent a fall under the handrail.

As deck areas are opened up for the removal of machinery, then a fixed welded handrail 1 meter in height with a second rail at the half way point should be put in place to prevent a fall from height. A clear walkway should be made for personnel to safely move around the vessel deck to gain access to work areas. If there are areas that have been left without edge protection, then access to these areas should be prohibited with fixed barriers preventing encroachment within 2 meters of the unprotected area.

All edge protection will eventually have to be removed and this should be done in a sequential controlled manner. As edge protection is removed there will be a reduction in safe anchor points for safety harnesses to be fixed to. A hard wire should be run along the length of the vessel to fixed anchor points to allow personnel to connect their harnesses, this will not prevent a fall form the deck level but it will prevent a fall to the level bellow and therefore reduce the risk of serious injury.

Toolbox talks must be carried out by the decommission manager on a daily basis highlighting the work that will be undertaken that day and the safety measures that will be in place. If there is any change in the works schedule for that day then a follow up toolbox talk should be held to cover these changes and additional risk created.

1. **REVIEW**

This procedure will be reviewed regularly, at a minimum on a yearly basis, at the annual management meeting. Additional review maybe required due to changes in legislation, operations, technology, personnel etc.