SG19:17

A Guide to Formulating a Rescue Plan

NASC
NATIONAL ACCESS & SCAFFOLDING CONFEDERATION

1. INTRODUCTION

The legal requirement for rescue is specified in the 'Work at Height Regulations 2005' and require every employer in selecting work equipment for use in work at height to take account of the need for easy and timely evacuation and rescue in an emergency.

Scaffolders may need to be rescued from height for a number of reasons, for example operatives who have suffered a heart attack on a working platform and those who have injuries as a result of slips/trips or pulled muscles. However, this guide focuses on those suspended in a harness following a fall.

Since the introduction of SG4 and the widespread use of fall arrest equipment, consideration needs to be given to what procedure should be followed if a scaffolder falls and is suspended in their harness, possibly some distance away from the anchorage point and structure. A scaffolder suspended motionless in a harness could soon start to suffer from physiological problems due to restricted blood circulation in the legs. This can lead to symptoms such as faintness, breathlessness, sweating, nausea, unusually low heart rate and ultimately unconsciousness. It is essential that systems of work and rescue plans, appropriate to the workplace, are set up so that no one will be in a position where they are likely to suffer from this condition, and appropriate rescue facilities should always be on hand to enable an immediate and safe rescue should the need arise. A good place to start is to ensure that the harness chosen is suitable for the work to be undertaken, is a good fit and is comfortable. (Refer to NASC Guidance SG16:14 Management of Fall Protection Equipment.)

If a person falls and is suspended in their safety harness, restriction of movement or loss of consciousness must be anticipated, so they must be rescued extremely quickly. The aim should be to keep the post fall suspension time to a minimum by getting the person back to a position of safety as soon as possible.

It is important to note that the NASC has no recorded instances of scaffolders having suffered any ill effects resulting from being suspended in a harness. However, there have been 17 reported incidents over the last 7 years of scaffolders falling whilst wearing a harness. The harnesses had all been secured to a suitable anchor point and in most cases they were conscious and able to recover themselves by climbing back onto the structure. Nevertheless it is essential that the employer addresses the possibility that rescue might be required and a rescue plan is developed.

The majority of scaffolding work involves the erection of independent tied scaffolds, and should someone fall whilst attached to this type of scaffold, rescue should be straightforward. If the faller is both conscious and uninjured they are most likely to be able to recover themselves and/or be rescued by their workmates.

NOTE: Scaffolders who need to use a harness should never work alone.

If, however, the faller is injured, unconscious and/or suspended in mid-air, rescue is going to be more difficult to achieve. Therefore, a suitable rescue procedure must be considered at the planning stage of each individual job and form part of the site and job specific risk assessment.

Before starting work scaffolders should be given training, which is recorded by their employer, covering the appropriate rescue procedure and rescue equipment provided for the type of structure they are working on, so they are immediately aware of what action to take and who to contact in the event of an emergency, thus effecting a rescue as quickly as possible. It is essential that periodic refresher training is carried out at appropriate intervals. Training should be repeated if circumstances change significantly on site e.g. new personnel, design changes, new equipment introduced etc. Refresher training should be provided on a regular basis to prevent skill fade.

2. RISK ASSESSMENT/RESCUE PLAN

The following points need to be taken into consideration by the employer when preparing the risk assessment and rescue plan prior to commencement on site:

- Can the work at height be avoided?
- What types of scaffold structure are to be provided?
- Can falls be prevented?
- Collective protection takes priority over personal protection
- Has the correct choice of personal fall protection equipment been selected?
- Has the principal contractor or client taken responsibility to make provision for rescue as part of their emergency arrangements? (NB planning for emergencies on site should be a collective effort between the client/principal contractor and any specialist sub-contractors involved in work at height.)
- All parties should be absolutely clear about their own and others responsibilities regarding rescue
- Are your scaffolders capable of carrying out a rescue without putting themselves or others at risk and without specialist equipment?
- Are your scaffolders aware of the importance of swift action, the possible effects caused by suspension and what to do if rescue is required?
- Is the specialist equipment identified in the rescue plan available and are your scaffolders or others trained to use it?
- Does the selection of personnel and supervision match the complexity of the work to be undertaken?
- Scaffolders and Supervisors should receive appropriate training and awareness in rescue procedures and how to plan and formulate an effective rescue plan.
- Alternative rescue planning for high level works can also include the example shown in Appendix 1. This type of rescue planning must be subject to full risk assessment and be understood by all involved.

RESCUE PLANNING FLOW CHART

Rescue planning must form an integral part of the job and must not be reliant on the emergency services.

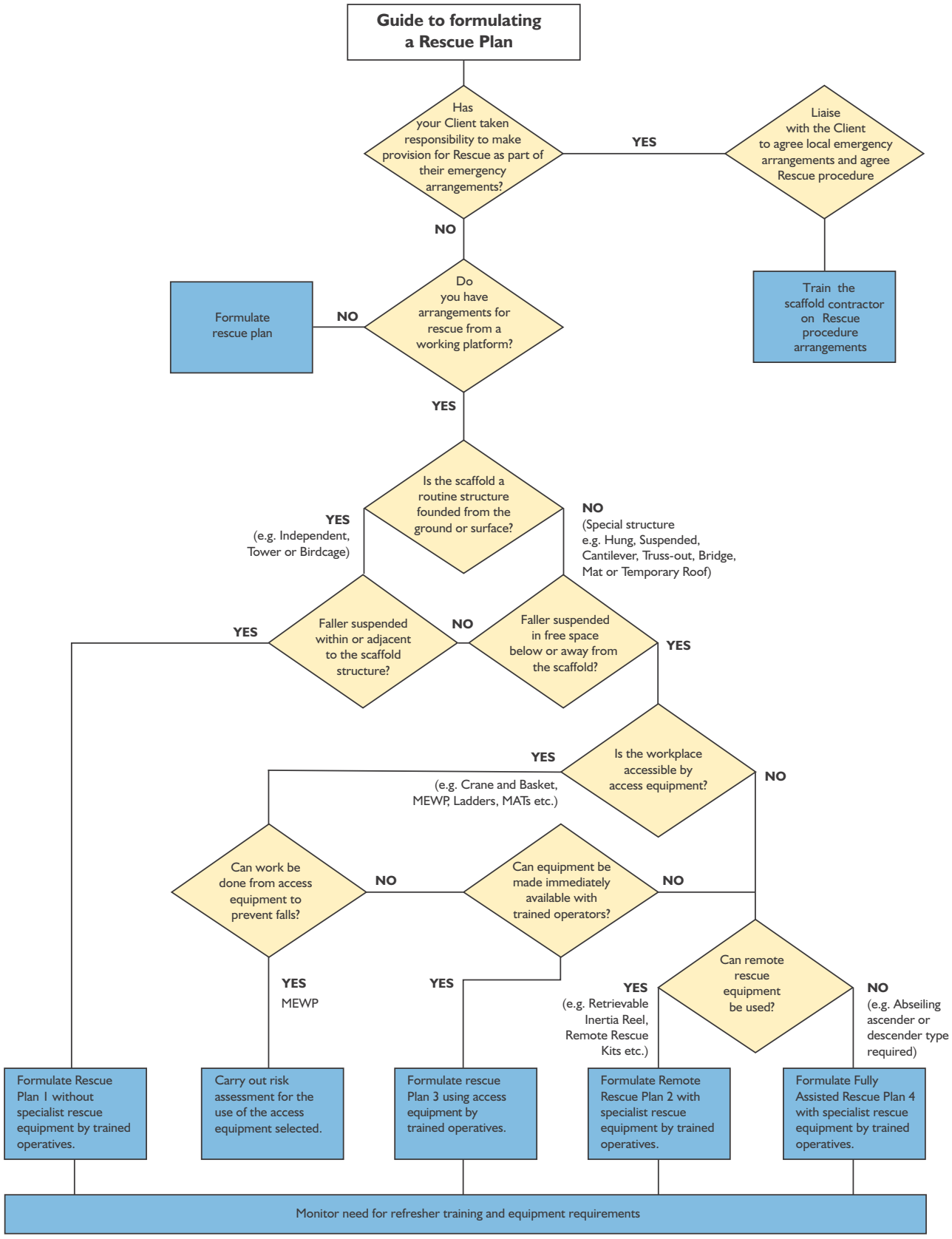
When planning for rescue, consideration should be given to the type of situation from which a casualty may need to be recovered, and the type of fall protection equipment which the casualty would be using.

Manufacturers provide various types of suspension relief equipment for use by a suspended person. This type of equipment is only suitable for conscious and able casualties. They are not an alternative to rescue.

The rescue planning flow chart offers guidance on the steps to be taken in preparing a procedure/plan for the rescue of someone injured on a working platform or suspended in a harness following a fall.

NOTE:

As stated earlier in this guidance, rescue may be required for reasons other than falls from height when wearing personal fall arrest equipment. In these circumstances the likelihood of a rescue being required can be equally applied to other trades working at height or in inaccessible places.



As part of any rescue procedure, consideration should be given to contacting the emergency services if assistance or first aid is required.

In such cases, principal contractors should take this into account when drawing up their emergency arrangements for the site and in some cases may have to consult with/carry out practice drills with the emergency services.

For working in confined spaces refer to NASC Guidance SG21:17.

3. PRE RESCUE ACTION

Before work commences, the scaffold contractor should verify that the rescue plan is appropriate and achievable, especially with respect to the path of a casualty and suitable anchor points.

As soon as a fall takes place the scaffold team must put the rescue plan into effect, and inform the site management and the emergency services in case specialist attention is required. If able to do so, the suspended scaffolder should be encouraged to use the following techniques to reduce the risks:

- If the person is un-injured and fully conscious, they should be encouraged to mobilise all four limbs, i.e. by flexing the leg muscles, until they can be brought to a position of safety. This will help to maintain circulation.
- Frequent 'pumping' of the legs against a firm surface will also activate the muscles and improve blood circulation.
- If the harness is equipped with a suspension or foot loop, this will help to provide support and facilitate muscle pumping.
- A member of the team should continuously monitor the suspended scaffolder reassuring them at all times and if necessary talking them through the process.

4. POST RESCUE ACTION

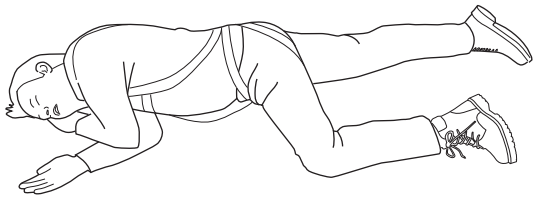
Following any suspension where a scaffolder has been rescued and is fully conscious and mobile:

- if the operative has been rescued promptly by his colleagues, or has self-rescued and no injuries were sustained before, during or after the fall; and
- provided there was no medical reason for the fall ie a seizure or other sudden loss of consciousness

  then there is no need to detain them, call an ambulance or refer them to hospital. However, the operative should be seen by a first aider until satisfied they have fully recovered (max 30 mins).

  or:

  If the patient is unconscious or semi-conscious, they are best attended by a competent first aider who should ensure that the emergency services are called immediately. They should then ensure the airway is open, the patient is breathing and only then place the patient in the traditional recovery position until the emergency services are in attendance.



- Advise the ambulance service that the patient needs to be treated for orthostatic shock or intolerance, which should be treated similarly to crush injuries.
- Following a fall, any fall protection equipment should be quarantined for inspection as part of the accident investigation process. (Refer to NASC Guidance SG16:14 – Management of Fall Protection Equipment – Section 14.)

EXAMPLE RESCUE PLAN NO. 1
WITHOUT SPECIALIST RESCUE EQUIPMENT

In the event of a person falling from an independent, tower, birdcage scaffold, or any other structure where there is access adjacent to the suspended person then the guidance below is to be followed:

1. PLANNING
   - Employer to carry out a risk assessment for the task and ensure a suitable rescue plan is prepared
   - Ensure that all members of the scaffold team have received training and instruction on the safe system of work, including rescue and emergency arrangements, as part of their training.
   - Management to ensure work is properly monitored and supervised.

2. RESCUE PROCEDURE
   - The first priority MUST be to recover the suspended Scaffolder from suspension as quickly as possible, without endangering, unnecessarily, the safety of the rescuer(s) or the casualty.
   - Inform the Emergency Services and Site Management as soon as practicable to make them aware that there is an emergency situation and to request assistance.
   - If conscious, can the suspended Scaffolder recover themself or assist in their own rescue?
   - Can they climb back on to a platform?
   - Can they support themselves on part of the structure so that they are not solely supported by the harness e.g. get a foothold on a tube?
   - If conscious, can the suspended Scaffolder take steps to reduce the risk of further injury until rescued? e.g.
     – Encourage them to keep all four limbs moving to aid blood circulation, by flexing the leg muscles.
     – Transferring body weight from one side to the other.
     – Make use of foot support straps, if available.
   - Colleagues can move to, or create, a working platform at a position adjacent to the casualty, clip-on to the guardrail, ledger or other suitable anchorage point, and assist them to get onto the working platform. If the casualty is unconscious, then they must be manoeuvred manually on to the platform. Note: If the lift is a not boarded, then the rescuer(s) should create a temporary platform a minimum of 4 boards wide, to facilitate the rescue. Where guardrail protection is not provided the rescuer(s) must be clipped on at all times.
   - Once the casualty is on a safe platform, their fall arrest equipment can be released or the lanyard cut from the anchor point to which it is attached, if it is safe to do so.
   - If unconscious or semi-conscious, the casualty is best managed in the traditional recovery position and steps taken to ensure their airway is open.
   - Where possible, the remaining Scaffolder(s) should assist the emergency services by providing safe access to the casualty e.g. positioning a ladder, installing temporary guardrails, securing the platform boards etc.
   - The Emergency Services should then make their way to the casualty to administer treatment and make an assessment as to their condition before deciding on the next steps to be taken to get the casualty to ground level, using either the site emergency response team, or the external emergency services.

IMPORTANT!

When an operative has suffered a fall and is suspended in their harness, the suspension time should be kept to a minimum by getting the person back to a position of safety as soon as possible.

Following any suspension where a scaffolder has been rescued and is fully conscious and mobile:

- **if the operative has been rescued promptly by his colleagues, or has self-rescued and no injuries were sustained before, during or after the fall; and**
- **provided there was no medical reason for the fall ie a seizure or other sudden loss of consciousness**

then there is no need to detain them, call an ambulance or refer them to hospital. However, the operative should be seen by a first aider until satisfied they have fully recovered (max 30 mins).

or:

If the patient is unconscious or semi-conscious, they are best attended by a competent first aider who should ensure that the emergency services are called immediately. They should then ensure the airway is open, the patient is breathing and only then place the patient in the traditional recovery position until the emergency services are in attendance.

EXAMPLE RESCUE PLAN NO. 2
WITH SPECIALIST REMOTE RESCUE EQUIPMENT

In the event of a person falling from a cantilevered/suspended scaffold or any other structure where there is no access adjacent to the suspended person then the guidance below is to be followed:

1. PLANNING

   - Employer to carry out a risk assessment for the task and ensure a suitable rescue plan is prepared
   - Specify work equipment or specialist rescue equipment that ensures an efficient rescue without placing the rescuers in danger e.g. use of access equipment, retrievable inertia reels, specialist pole based systems.
   - Provide the selected rescue equipment, ensure it is in good order **and readily available at the workplace**.
   - Ensure that all members of the working party have received training and instruction covering the safe system of work, including the rescue and emergency arrangements established, and have taken part in simulated rescue exercises as part of their training.
   - Management to ensure the work is properly monitored and supervised.

2. RESCUE PROCEDURE

   - The first priority MUST be to recover the suspended Scaffolder from suspension as quickly as possible, without endangering, unnecessarily, the safety of the rescuer(s) or the casualty.
   - Inform the Emergency Services and Site Management as soon as practicable to make them aware that there is an emergency situation and to request assistance.
   - If conscious, can the suspended Scaffolder take steps to reduce the risk of further injury until rescued? e.g.
     – Encourage them to keep all four limbs moving to aid blood circulation, by flexing the leg muscles.
     – Transferring body weight from one side to the other.
     – Make use of foot support straps, if available.
   - Colleagues facilitate the rescue using the remote rescue equipment provided. In accordance with the manufacturers instructions and training received.
   - The casualty should then be raised or lowered to a poition of safety, whichever is easiest, and wait for specialist treatment.
   - If unconscious or semi-conscious, the casualty is best managed in the traditional recovery position and steps taken to ensure their airway is open.
   - Where possible, the remaining Scaffolder(s) should assist the emergency services in providing safe access to the casualty e.g. positioning a ladder, installing temporary guardrails, securing the platform boards etc.
   - The Emergency Services should then make their way to the casualty to administer treatment and make an assessment as to their condition before deciding on the next steps to get the casualty to ground level.

IMPORTANT!

When an operative has suffered a fall and is suspended in their harness, the suspension time should be kept to a minimum by getting the person back to a position of safety as soon as possible.

Following any suspension where a scaffolder has been rescued and is fully conscious and mobile:

- **if the operative has been rescued promptly by his colleagues, or has self-rescued and no injuries were sustained before, during or after the fall; and**
- **provided there was no medical reason for the fall ie a seizure or other sudden loss of consciousness**

then there is no need to detain them, call an ambulance or refer them to hospital. However, the operative should be seen by a first aider until satisfied they have fully recovered (max 30 mins).

or:

If the patient is unconscious or semi-conscious, they are best attended by a competent first aider who should ensure that the emergency services are called immediately. They should then ensure the airway is open, the patient is breathing and only then place the patient in the traditional recovery position until the emergency services are in attendance.

EXAMPLE RESCUE PLAN NO. 3
USING ACCESS EQUIPMENT

In the event of a person falling from a scaffold or any other structure and is suspended by their personal fall protection equipment, then the guidance below is to be followed:

1. PLANNING

- Employer to carry out a risk assessment for the task and ensure a suitable rescue plan is prepared. Consider if the workplace is accessible by access equipment.
- Can the work be carried out from a safe platform to prevent a fall from occurring?
- Specify the access equipment being considered to facilitate a rescue and ensure it is suitable e.g. Mobile Scaffold Tower, MEWP, Crane Basket, Lift-truck and man-basket etc.
- Provide the selected access equipment, ensure it is in good order **and is readily available at the workplace** e.g.
  – Crane Basket dedicated for rescue purposes only and positioned within the working envelope of the crane. The basket is slung and immediately ready to be connected to the crane. Systems established for regularly checking the equipment so that it is maintained ready for use in an emergency.
- Ensure that all members of the working party have received training and instruction covering the safe system of work, including the rescue and emergency arrangements established, and have taken part in simulated rescue exercises as part of their training.
- Management to ensure the work is properly monitored and supervised.

2. RESCUE PROCEDURE

- The first priority MUST be to recover the suspended Scaffolder from suspension as quickly as possible, without endangering, unnecessarily, the safety of the rescuer(s) or the casualty.
- Raise the alarm and inform the Emergency Services and Site Management as soon as practicable to make them aware that there is an emergency situation and to request assistance.
- If conscious, can the suspended Scaffolder take steps to reduce the risk of further injury until rescued? e.g.
  – Encourage them to keep all four limbs moving to aid blood circulation, by flexing the leg muscles.
  – Transferring body weight from one side to the other.
  – Make use of foot support straps, if available.
- Nominated and trained operators to facilitate the rescue by using the access equipment provided, this includes:
  – Positioning the access equipment beneath the suspended casualty.
  – If unconscious, ensure the casualty's weight is supported, and the casualty's primary fall protection equipment is released, e.g. removing the lanyard or cutting the lanyard using a safety cutter, which reduces the risk of accidental injury.
  – If conscious, the casualty may be able to assist by climbing into/onto the access equipment.
  – The casualty can then be slowly and carefully lowered to the ground, or wait on the platform, for specialist treatment.
- If unconscious or semi-conscious, the casualty is best managed in the traditional recovery position and steps taken to ensure their airway is open.
- When the casualty is on a platform above ground level, the remaining Scaffolder(s) should, where possible, assist the emergency services in providing safe access to the casualty e.g. positioning a ladder, installing temporary guardrails, securing the platform boards etc.
- The Emergency Services should then make their way to the casualty to administer treatment and make an assessment as to their condition. If the casualty is on a platform above ground level the emergency services must decide on the next steps to take to get the casualty to ground level.

IMPORTANT!

When an operative has suffered a fall and is suspended in their harness, the suspension time should be kept to a minimum by getting the person back to a position of safety as soon as possible.

Following any suspension where a scaffolder has been rescued and is fully conscious and mobile:

- **if the operative has been rescued promptly by his colleagues, or has self-rescued and no injuries were sustained before, during or after the fall; and**
- **provided there was no medical reason for the fall ie a seizure or other sudden loss of consciousness**

then there is no need to detain them, call an ambulance or refer them to hospital. However, the operative should be seen by a first aider until satisfied they have fully recovered (max 30 mins).

or:

If the patient is unconscious or semi-conscious, they are best attended by a competent first aider who should ensure that the emergency services are called immediately. They should then ensure the airway is open, the patient is breathing and only then place the patient in the traditional recovery position until the emergency services are in attendance.

EXAMPLE RESCUE PLAN NO. 4
FULLY ASSISTED WITH SPECIALIST RESCUE EQUIPMENT

In the event of a person falling from a cantilevered/suspended scaffold or any other structure where there is no access adjacent to the suspended person, where they are suspended in free space and a safer form of rescue cannot be justified, then the guidance below is to be followed:

1. PLANNING

   - Employer to carry out a risk assessment for the task and ensure a suitable rescue plan is prepared.
   - A fully assisted rescue plan MUST only be considered as a last resort as it may expose rescuers to unnecessary danger.
   - Specify the specialist rescue equipment and techniques that will ensure an efficient rescue, suitable for the foreseen conditions e.g. descender equipment can only be used to lower the rescuer down to the casualty and then to ground level. A descender/ascender device will allow the rescuer to lower themselves to the casualty and either ascend back to the safe platform or descend to ground level.
   - Provide the selected rescue equipment, ensure it is in good order **and readily available at the workplace**.
   - Ensure that all members of the working party have received training and instruction in the safe system of work, including the rescue and emergency arrangements established, and have taken part in simulated rescue exercises as part of their training.
   - Management to ensure work is properly monitored and supervised.

2. RESCUE PROCEDURE

   - The first priority MUST be to recover the suspended Scaffolder from suspension as quickly as possible, without endangering, unnecessarily, the safety of the rescuer(s) or the casualty.
   - Inform the Emergency Services and Site Management as soon as practicable to make them aware that there is an emergency situation and to request assistance.
   - If conscious, can the suspended Scaffolder take steps to reduce the risk of further injury until rescued? e.g.
     – Encourage him to keep all four limbs moving to aid blood circulation, by flexing the leg muscles.
     – Transferring body weight from one side to the other.
     – Make use of foot support straps, if available.
   - Colleagues facilitate the rescue by using the rescue equipment provided, in accordance with the manufacturers instructions and training received, this includes:
     – Deploying the rescue equipment from a safe anchor point within the structure (e.g. ledger)
     – The rescuer lowering himself to a position adjacent to the casualty.
     – Securing the casualty by attaching their harness to the rescuers, e.g. using a karabiner to connect between the 'D' rings of both harnesses.
     – Once secured to the rescuer, the rescuer supports the weight of the casualty and releases the casualty's primary fall protection equipment, e.g. removing the lanyard or cutting the lanyard using a safety cutter, which reduces the risk of accidentally cutting the rescue line.
     – The rescuer then slowly and carefully, raises or lowers the casualty to a position of safety, whichever is easiest, to wait for specialist treatment.

     Note: The rescuer should try to reassure the casualty and advise them of the procedure at each stage.
   - If unconscious or semi-conscious, the casualty is best managed in the traditional recovery position and steps taken to ensure their airway is open.
   - If the casualty is located on a platform, the remaining Scaffolder(s) should assist the emergency services in providing safe access to the casualty e.g. positioning a ladder, installing temporary guardrails, securing the platform boards etc.
   - The Emergency Services should then make their way to the casualty to administer treatment and make an assessment as to their condition before deciding on the next steps to get the casualty to ground level.

IMPORTANT!

When an operative has suffered a fall and is suspended in their harness, the suspension time should be kept to a minimum by getting the person back to a position of safety as soon as possible.

Following any suspension where a scaffolder has been rescued and is fully conscious and mobile:

- **if the operative has been rescued promptly by his colleagues, or has self-rescued and no injuries were sustained before, during or after the fall; and**
- **provided there was no medical reason for the fall ie a seizure or other sudden loss of consciousness**

then there is no need to detain them, call an ambulance or refer them to hospital. However, the operative should may advise them to avoid standing and to sit down for a while until satisfied they have fully recovered (max 30 mins).

or:

If the patient is unconscious or semi-conscious, they are best attended by a competent first aider who should ensure that the emergency services are called immediately. They should then ensure the airway is open, the patient is breathing and only then place the patient in the traditional recovery position until the emergency services are in attendance.

APPENDIX 1 – HANGING TUBE RESCUE FOR HIGH LEVEL WORKS

In the event of a fall the same procedure will be used as detailed above, including the following.

Fig 1:

Fig 2:

Team mates (using double lanyards) will lower a system standard (or a tube with a butt on the end) beside the fallen operative and secure it in position.

Fig 3:

This is done so the fallen operative can stand on the tube (to give sufficient time to arrange for the fallen operative to descend to the ground later by ladder or ascend).

Fig 4:

This is done so the fallen operative can stand on the tube (to give sufficient time to arrange for the fallen operative to descend to the ground later by ladder or ascend and – as previously documented – go to a place of safety and seek medical attention).

Alternatively, a metal ladder can be lowered into position and secured in position (fixed with single clips and doubles on top, possibly with a tube fixed through under the metal rung), prior to instructing the fallen operative to ascend the secured ladder and move to a place of safety, before the removal of the lanyard, as detailed above).