



Cliff Inspection Safe Working Practices

The work of cliff inspection and the removal of dangerous portions of cliff is a very skilled and precise operation. For this reason, the men employed must be trained and experienced in this specialist work. No operation may take place before a full and thorough risk assessment has been completed.

The following procedures are to be strictly observed:-

1. All practicable precautions are to be taken in carrying out work to safeguard health and safety of employees and other persons who may be affected in the execution of the work. No cliff face work shall be undertaken unless all the employees involved have been trained and are completely physically fit at the time.
2. When carrying out work in places where the public have access, all practicable precautions are to be taken to ensure that the public are not exposed to hazards.
3. High visibility clothing is to be worn at all times whilst climbing or working on cliff faces.

4. Eye Protection

Suitable eye protection must be worn when drilling rock for breaking or blasting.

5. Warning Signs

Standard warning signs 'Danger - Men Working on Cliff', 'Danger - Blasting' are to be conspicuously placed to advise the public at all points at which they could possibly approach the site where the works are taking place.

6. Equipment

Prior to commencing the work, all equipment must be examined for defects. No work is to proceed using equipment which is in any way defective. All equipment is to be examined by a competent person. All inspections and examinations must be recorded by the competent person. Any damaged or defective equipment is to be immediately replaced. Equipment withdrawn is to be scrapped or repaired.

7. Harness, helmet and boots

A harness must be worn in all circumstances, also safety helmets and steel toe-capped boots.

8. Preliminary inspection of cliff face

Examine the cliff face from the ground identifying which areas are to be worked on and determining:-

- 8.1 access for ease of getting up and down the face;
- 8.2 height of cliff and particularly whether the ropes will be long enough if abseil is required; and
- 8.3 presence of any apparent loose rock.

9. Ground anchors

Where regular cleaning down of vertical cliff faces is undertaken, concrete anchor blocks are provided with a metal ring. These are firmly founded in the ground and at a safe distance from the cliff edge, or alternatively cemented in the rock and are to be used at all times. Where permanent ground anchors are not available, establish suitable anchors from either a ground stake or multiple natural belays using large rock spikes, trees, pitons and slings.

10. Cutting of vegetation

If the top of the cliff is overgrown with vegetation, this must be cut away to give a clear sighting from the anchor points to the edge of the cliff.

11. Procedure for descent

11.1 Face Man's Procedure

Attach to main anchor the rope required for the descent. The face man attaches himself to the rope using a 'Clog Figure of Eight' and Screwgate Karabiner approximate breaking strain 3,000kg which in turn is attached to his Whillans Harness. This is sufficient for descent. However, should he wish to stop half way down he must also employ the use of a back-up consisting of troll super blue tape (breaking strain 2,700kg) threaded through the harness, rope attachments, clipped onto the Karabiner on the Whillans Harness. Only when the face man is ready for abseil should the main rope be thrown over the cliff edge. The face man will descend carefully selecting his footholds.

11.2 Top Man's Procedure

The top man **must** be stationed at the anchorage point. He is responsible for the safety of the belay and the safety of the man working on the face. Various view points must be established for communication with the face man. Normally one would attach an 'extended belay' running parallel with the climbing/abseil rope which should allow either a visible or hearing facility. If neither is possible, then once the face man has arrived at a suspect point the top man would take the easiest route to attain some sort of vantage point for communication. When both men have to leave the face, a third look-out must be located at the top. When these methods are unsatisfactory, portable radio will be used. During the descent the top man will observe closely the effects on the ropes and equipment under strain. He will take action if necessary to remove sharp stones from under the abseil rope, untwist slings and deal with any other contingencies which may arise.

The top man will keep a wary eye out for people straying too close to the area and take action by informing the face man to stop while he has to deal with this or any other problem.

Once the ground is reached, the top man will either take up the equipment or abseil down under direction to stop at a particular area which is suspect to enable the mate to know what the situation is.

12. Procedure for stopping on the face

Set up the abseil as for the descent. The face man will use ascenders attached to his harness with a set of slings, to use as 'etriers' (tape ladders) should the need arise.

If the face man wishes to stop, in reality it means being suspended from the abseil rope. His action is to attach the ascender to the rope, then un-clip the back up (see para 11) and attach this to the ascender. He will then be perfectly safe to move around on the rope.

To continue the descent: he will take up the slack rope until the Figure of Eight is tight to his harness. Un-clip the back up and attach this back to the harness as previously described. Take off the ascender and clip it back to the harness. Then carry on the descent in the normal manner until reaching the ground, whereupon he will remove the Figure of Eight from the rope and inform the top man that the rope is clear.

13. Procedure for ascent

This is a procedure which is not often carried out on cliff inspections. It is very demanding on the man and on the rope and gear. Equipment consists of Clog Ascenders (Cloggers) which slip onto the 11mm ropes. The clogger can be pushed up the rope without it sliding down; it can only be released from the rope by manual means.

First of all, a 'fixed rope' is required, safely anchored at the top and tensioned at the bottom which enables the face man to move up without the rope riding up (see para 9).

The following three methods of ascending should be adopted depending on the type of face:-

13.1 Steep Slopes with Loose Rock

This method is a combination of climbing but with the facility of a clogger attached to the rope and harness which is pushed up whilst scrambling up the face. In the event of a landslip the clogger would arrest the face man's fall.

13.2 Overhangs on Sheer Cliff Faces

The face man must fix two cloggers which are attached to tape foot slings to the rope. He stands in the slings and by transferring his weight alternatively from one to the other, moving up the unloaded sling each time and then stepping up, he ascends the rope. A further precaution is to attach a Karabiner and sling from the clogger back to the harness, so if the climber overbalanced he would not fall off the rope.

Alternative 2

Another method is to attach a sit sling and foot loop only (this requires practice). However the advantage of this method is that the face man is left in a comparatively comfortable resting position in a harness, plus a free leg to push off against the cliff face.