

6.4.4 MODULE 1 VERTICAL SKILLS SURFACE CHECK**OUTLINE****Written Paper**

Use and technical specification of ropes, fall factors, personal equipment for SRT and ladder and lifeline, abseiling, self-lining and lowering.

Practical

Surface check of personal SRT skills, belaying, knots, improvised techniques, self rescue skills for SRT and ladder/abseil, self lining and lowering.

CHECK LIST

1. Describe packing rope for both use and storage. Explain importance of stopper knots in bagged ropes.
2. The following knots should be demonstrated and their applications/limitations explained at some time during the assessment:

| | |
|----------------------------------|---|
| Fig 8 loop | Overhand loop (including double overhand) |
| Bowline | Double bowline |
| Triple Fig 8 (for joining ropes) | Double fisherman's / Barrel knot |
| Fig 8 on the bight | Alpine / Cavers Butterfly |
| Double blood knot | Fig 9 loop |
| Clove Hitch | Bowline on the bight / triple bowline |
| Thomson Knot | Tape knot |
| Prusik knots | Italian hitch (including locking version) |
3. Emergency Rope skills. Waist belaying with and without anchors. Direct belaying using rock anchors (no krabs).
4. Use and limitations of handlines. Check use of assisted (2:1) handline / lifeline for protecting descent and ascent with use of friction / directional karabiner.
5. Demonstrate the following and explain the logic behind both techniques and items of equipment:
 - a) Personal vertical equipment with appropriate lengths for safety cords / cowstails and foot loops.
 - b) Standard SRT personal progression techniques:

Use of cowstails for protection and to test an abseil device.

| | |
|-----------------------|----------------------------|
| Changeover down to up | Changeover up to down |
| Pass rebelay down | Pass rebelay up |
| Pass deviation down | Pass deviation up |
| Pass knot down | Pass knot up |
| Down (reverse) prusik | Negotiate an aid traverse. |
 - c) Show ability to vary friction with a descender to suit 11mm / muddy ropes as well as new 9mm ropes.
6. Improvised SRT
 - a) Demonstrate 2 methods to continue ascending following failure of a foot ascender in mid pitch.
 - b) Demonstrate 2 methods of continuing ascending following failure of body ascender in mid pitch.
 - c) How can a slipping ascender be improved?

- d) Improvised abseiling and locking off.
 - e) Prusiking using knots with cord and tape.
7. Demonstrate belaying / lifelining with a safety rope, using the following, giving the pros and cons of each method:
- a) Italian hitch
 - b) Belay plates
 - c) Autolock descender (e.g. Stop)
 - d) Pulley / jammers
 - e) Self locking belay devices in common use by climbers (e.g. Grigri).
 - f) Other relevant method(s).
- In each case hold a fall, lock off and release.
- Demonstrate how each system may be converted to a haul, and how a pulley / jammer may be converted to a lower.
- Holding falling cavers on double lifeline - with and without suitable anchor points.
8. Describe common problems associated with lifelined abseils and ladder climbs and demonstrate how to deal with them. Appropriate methods for lowering and also immediate hoisting to deal with all contingencies including abseiler suspended by lamp cable snagged on a rock protrusion on a pitch.
9. Demonstrate an effective method of self-lining up a ladder climb and deal with contingencies such as ladder failure.
10. a) Demonstrate safe methods of rigging and group organisation for a pull through abseil trip.
b) Demonstrate rope retrieval systems for pull through trips.
c) Describe common problems associated with pull-throughs.

11 Rescue

Explain the significance of "Suspension trauma." Demonstrate / explain the most useful techniques giving the pros and cons of the following. Describe the contexts in which each of the tasks below might be either a) sound b) unsound judgment. (Note tasks b) - f) have a casualty stuck mid rope.)

- a) Haul systems to evacuate a casualty up a pitch (casualty not already attached to the rope)
 - (i) Mechanical advantage system
 - (ii) Counter balance
- b) Pitch head lower, using spare rope.
- c) "Snatch" rescue (abseil off with casualty using spare rope) quickly releasing casualty from his / her rope or cutting casualty's rope). Speed and effectiveness in this task is viewed as a critical area of competence for the candidate. The ability to abseil with a casualty past rebelay and deviations is necessary.
- d) Demonstrate pitch head hoisting principles with and without a spare rope using 2 different methods.
- e) Mid rope lower, using spare rope.
- f) Mid rope rescues (no spare rope), rescuer abseils off with casualty:
 - (i) Using dead lift or using MAO system - foot loop / pulley
 - (ii) Using counter balance / mechanical advantage system
- g) Demonstrate / explain techniques for the evacuation of a casualty along straightforward and more technical traverses.

The Trainer / Assessor is encouraged to make a record of evidence and his / her judgement against the above items as evidence of his / her recommendation on assessment.

6.4.5 MODULE 2 EXTENDED CAVING DAY CHECK LIST

Note that checks of equipment, weather and flooding, conservation and access are made in all modules involving practical work in caves.

OUTLINE**Written Paper**

Weather and flooding, emergency situations.

Practical

Surface navigation techniques.

Extended caving trip to cover survey interpretation, causes and effects of flooding, geology and cave formation, cave hazards, emergency rope work. Check of emergency and survival measures, dealing with incidents.

CHECK LIST**1 PRE-TRIP AND SURFACE CHECKS**

Weather / Flooding
 Weather forecast and sources
 Stream levels (present and anticipated)
 Run off conditions
 Effects of bad weather - surface
 Clothing for the surface
 Access
 Access procedures, public relations with landowners / other users.
 Site status (SSSI, RIGS)
 Regional Caving Council access arrangements (general knowledge of).
 Country Code awareness conservation- surface
 Surface Navigation and Trip Organisation
 Navigation - Surface strategies for poor visibility
 Grid references, Scales, Bearings, Distances by timing, Distances by pacing
 Destination notes, Cancellation of destination
 Cave Rescue call out procedure
 Interpretation of Guidebook / Survey / topo information
 Underground Gear check
 Clothing and personal equipment check
 Underground gear - rope / krab / sling / etc.
 Emergency Equipment (appropriate for the trip)

2 UNDERGROUND CHECKS

Conservation
 Vulnerability assessment of speleothems / deposits
 Practical conservation measures and actions during the trip
 General knowledge e.g. Regional & National Cave Conservation strategies, cave conservation and management plans
 Risk assessment of Underground Hazards
 Squeezes
 Unstable areas / boulder chokes
 Force of streams

Pollution
Weil's disease
Radon gas
Loose slippery rocks
Holes
Deep water
Low airspace passages
Free-diveable sumps
Awareness of flooding
Evidence / speed of flooding
Fixed aids, Digging / shoring activities.
Survey / guide book interpretation:
Symbols
Underground interpretation
Effective route finding
Cave Environment
Basic surface geology
Bedding/joints
Passage development with regard to above.
Cave development - phreatic and vadose
Cave deposits & sediments
Temperatures / draughts
Flora and fauna
Formations
Technical Skills
Handlines / position of leader
Unprotected climbs - position of leader
Suitable knots / belay points
Emergency lifeline: rope only - stance / direct belaying (rock anchors)
Italian hitch
Climbing calls
Assisted handline
Hoist
Improvised harness - rope only / other (slings & krabs)
Accident / Emergency Procedures
Emergency bivouac skills and equipment
Incident organisation
Rescue call out strategy
Hypothermia: Awareness, Treatment / action
Light failure
Cancellation of destination & overdue problems
Cave Rescue call out procedure
Difficulty of rescue (discuss)
Statistics / common rescue incidents
Leadership / judgment: General
Following an incident

The Trainer / Assessor is encouraged to make a record of evidence and his / her judgement against the above items as evidence of his / her recommendation on assessment.

6.4.6 MODULE 3 RIGGING IN VERTICAL SYSTEMS CHECK LIST

Note that checks of equipment, weather and flooding, conservation and access are made in all Modules involving practical work in caves.

OUTLINE**Written Paper**

Principles of rigging for SRT and ladder, abseil and "Pull through" techniques. Choice and use of appropriate vertical caving equipment for these techniques.

Practical

Rigging for SRT in a classic vertical system, SRT self rescue incident, rigging for ladder (SRT for the leader, one pitch only).

CHECK LIST**1 THEORY**

General rigging principles:

for SRT

for ladder and lifeline (double lifeline & using SRT for the leader)

for lifelined abseiling

for abseil pull through trips

Working loads, impact forces, loads on anchors and effect of failure of an individual anchor. Principles of loading anchors

Bolt anchors / hangers: Placements, assessing suitability of, strength and properties.

2 PRE-TRIP AND SURFACE CHECKS

Weather / flooding

Weather forecast and sources

Stream levels (present and anticipated)

Run off conditions

Effects of bad weather - surface

Clothing for the surface

Access

Access procedures, public relations with landowners / other users.

Regional Caving Council access arrangements (general knowledge).

Country Code awareness conservation - surface

Surface Navigation and trip organisation

Navigation - Surface strategies for poor visibility

Grid references, Scales, Bearings, Distances by timing, Distances by pacing

Destination notes, Cancellation of destination

Cave Rescue call out procedure

Interpretation of Guidebook / Survey / topo information, route selection.

Underground Gear check

Clothing and personal equipment check

Underground gear - rope / krab / sling / etc.

Emergency Equipment (appropriate for the trip).

3 UNDERGROUND CHECKS

Conservation

Practical conservation measures and actions during the trip

Practical rigging

Effective rigging for SRT allowing for ease and safety of progression for others.

Installation of traverse lines, rebelay (single & twin bolt) and deviations

Effective rigging for safe lifelined ladder climbing

Rigger protection

Traverse lines for aid and protection.

Use of natural anchors

Use of multiple or shared anchors

Use of "Y" anchors

Hangers - choice and correct usage

Alignment of forces

Checking and using self-drilling, expansion and resin anchors

Tightening bolts

Use of spreaders / tethers

Use of slings (rope or tape)

Use of krabs / maillons

Transportation of ladders

Coiling / uncoiling of ladders

Joining of ladders

Care of excess ladder

Ease of access to ladder.

Ability to deal effectively with an SRT incident (with & without spare rope)

The Trainer / Assessor is encouraged to make a record of evidence and his / her judgement against the above items as evidence of his / her recommendation on assessment.

6.4.7 MODULE 4 VERTICAL SKILLS INSTRUCTING (2 DAYS) CHECK LIST

Note that checks of equipment, weather and flooding, conservation and access are made in all Modules involving practical work in caves.

OUTLINE**Written Paper and Course Preparation**

SRT instructing progressions, optimising safety, avoiding and dealing with problems. Preparation of appropriate information pack for the course including clothing and personal equipment, practical arrangements and outline programme for the Module.

Practical

The candidate is to design and run a 2-day vertical skills course for a less experienced group of adult cavers. The group (min 3, max 5) must have some prior caving experience; the candidate is required to extend the group's caving skills accordingly (e.g. general caving skills, SRT progression, pitch rigging, etc). The following components must be present: surface training or skills check in SRT progression, a minimum of 4 hours spent underground during the 2 days, use of a multipitch venue (at least 3 pitches), cave flooding and weather awareness briefing to the group. Information to enhance understanding and care of cave environment and access briefings essential. Use of assistant at discretion of candidate

CHECK LIST**1 GENERAL CHECK LIST**

Suitability of outline programme.

Pre course information pack; clothing and equipment, practical arrangements, insurance, risk information.

Evaluation of client competencies during surface and underground practicals.

Effectiveness of instructing style.

Use of feedback from client group.

Appropriateness of skills taught and training progression.

Use of suitable venues.

Suitability of clothing and personal equipment of group.

Suitability of vertical equipment.

Leadership style / rapport / sensitivity to group.

Effectiveness of group management / supervision, control and safety above and below ground.

Effectiveness of instruction in theory areas as appropriate.

Effectiveness of input with regard to education about the cave environment / conservation / access / weather / history / etc.

Ability to distinguish between rigging and supervisory roles underground.

Effective and appropriate use of any assistant leader(s).

Appropriate emergency kit.

Destination / rescue call-out arrangements.

2 PRE-TRIP AND SURFACE CHECKS FOR CAVING SESSIONS

(Information / input on these areas to client group as appropriate)

Weather / flooding

Weather forecast and sources

Stream levels (present and anticipated)

Run off conditions

Effects of bad weather - surface

Clothing for the surface

Access
Access procedures, public relations with landowners / other users.
Regional Caving Council access arrangements (general knowledge).
Country Code awareness conservation - surface
Surface Navigation and trip organisation
Navigation - Surface Suitable strategies (including return in poor visibility)
Destination notes, Cancellation of destination
Cave Rescue call out procedure
Interpretation of Guidebook / Survey / topo information
Underground Gear check
Clothing and personal equipment check
Ropes and rigging gear check
Emergency Equipment (appropriate for the trip)
Conservation
Vulnerability assessment of speleothems / deposits
Group management / guidance to achieve exemplary standards
Practical conservation measures and actions during the trip
General knowledge e.g. Regional & National Cave Conservation strategies

The Trainer / Assessor is encouraged to make a record of evidence and his / her judgement against the above items as evidence of his / her recommendation on assessment.