

Oxford University Cave Club

Risk Assessment

Reviewed and **changes** made by SGR, June 2026

The risks involved in cave exploration appear extensive and serious. However, serious accidents are rare. This document outlines measures that can be taken to minimise the risks associated with particular hazards. The OUCC **Safety Policy** and **Standing Orders** describe in more detail the measures that should be taken to reduce the number of incidents and to reduce the severity of any that may occur. The **Standing Orders** also give information about the steps to be taken should a caving group suffer an accident or incident, or if a group is overdue from a caving trip.

This document can only give guidelines, as the severity and the likelihood of risk will vary markedly for different trips, weather conditions and members of the team, may change while you are underground and because one incident can readily lead to others (see section 1). This concatenation of associated risks means that a standard “likelihood x severity” assessment for individual risks may severely underestimate the overall risk, and is not appropriate for caving. The Risk Assessments that count are those that arise from the judgments you make of the severity and the likelihood of the different risks, separately and in combination, before and during a particular trip.

This document will be updated or altered as and when problems are highlighted, and after consultation between club members, other cavers and bodies such as the British Caving Association, British Cave Research Association and the OU Sports Federation.

The Risk Assessment is divided into **five** sections:

1. **Pre-trip considerations**
2. Problems which can occur after an adverse incident.
3. Hazards specific to the cave environment.
4. Hazards in cave location / return from cave.
5. Hazards associated with use of equipment such as transport, ropes, ladders, lamps, SRT kit, catering.

Pre-trip Considerations

(this section is in draft form, and will be developed further in discussion with OUSF)

The likelihood and severity of an adverse event occurring on underground, or while on the surface journey to/from the cave, as detailed in in pages 3 onwards, can be reduced by a pre-trip assessments. These need not be formally written down; normally they will occur by:

- in the days prior to projected departure to the caving region, assessment by the meeting leader and others of likely weather conditions, levels of experience of cavers and drivers, etc. (as in 1-4 below);
- while in the caving region, group discussion prior to deciding on the trips and teams for the day;

Pre-trip assessments should take into consideration:

1. Local weather conditions that might affect the difficulty and safety of the trips under consideration. This should include not only the current and forecast weather, but also conditions over the preceding days that might affect underground water levels, etc.
2. The experience and abilities of potential team members.
3. If a lengthy or arduous trip is planned on the last day of a meeting, possible effects on drivers' capabilities on the return journey.
4. Leaving a call-out (locally and/or with an appropriate contact) for an appropriate time, giving details of the trip planned, starting time, team members and (if appropriate) details of transport used.
5. Actions by non-trip members on the meeting in case of a trip's call-out time being missed:
 - a. Their experience and local knowledge; consultation with other experience cavers present (e.g. local club members)
 - b. Initial actions (e.g. check cave entrance / location of transport to the cave)
 - c. Means of calling for assistance if needed –who to call (ultimately: 999, police or cave rescue). Take account of local mobile signal strength and location of landline phone connections.

Problems which may occur after an adverse event

This section is put before the others because it is very important to recognise that *any* initial incident in a caving trip can have knock-on effects far more serious than the incident itself. Even a serious fall on an entrance pitch in a cave near to a road may result in quick and effective rescue: a sprained ankle deep within a cave may lead to a slow exit, light failure, a fall, injury, etc. A tightening spiral of exhaustion, hypothermia and further incidents/injuries can ensue. This makes it impossible to assign meaningful “severity & probability” factors to risks.

Problem / Consequent issues	Contributory factors / Adverse events	Measures to reduce risk and minimise worsening situation
<p>Exhaustion May lead to errors of judgement, increased risk of injury, increased risk of hypothermia. (exhaustion / exposure syndrome)</p>	<ol style="list-style-type: none"> 1. Lack of personal fitness appropriate to environment 2. Not enough food before / during trip. 	<p>Selection of trip taking into a/c weather, capabilities of team, etc.</p> <p>Personal fitness & experience Cave within limitations of group Mutual assistance over difficult terrain Appropriate clothing Adequate food & liquid prior to trip Food taken on trip Appropriate group size. Appropriate callout time</p>
<p>Hypothermia May lead to errors in judgement, incapacity, worst case death</p>	<ol style="list-style-type: none"> 1. Any event which causes immobility or slow progress through cave. 2. Getting wet 3. Exhaustion 4. Ill health 	<p>Selection of trip taking into a/c weather, capabilities of team, etc.</p> <p>Cave within limitations of group Appropriate group size. Appropriate clothing. Survival bag / extra clothing / food Reasonable attempts to stay dry Adequate food & liquid prior to trip Awareness of symptoms of hypothermia Warm dry clothes available immediately after trip If serious call cave rescue First aid training Appropriate callout time.</p>
<p>Injury Any incapacitating injury underground is extremely serious and potentially fatal. Greatly increased risk of hypothermia to victim and team</p>	<ol style="list-style-type: none"> 1. Exhaustion 2. Hypothermia 3. Light failure 4. Carelessness 5. Rock fall 6. Personal fall 7. Equipment failure 8. Poor personal technique. 	<p>Personal fitness Experience. Avoid injury. First aid training. First aid kit carried & more extensive kit above ground. Appropriate group size. Appropriate callout time.</p>

Hazards of the cave environment

Hazard	Associated risks	Measures to reduce risk
Darkness	<ol style="list-style-type: none"> 1. Unable to progress or exit 2. Falling ⇒ injury <p>(1) and (2) leading to cold, etc.</p>	<p>Good working lamp. Spare light source/+ batteries Whistle to attract help Survival bag/food/clothing carried. Appropriate call out time Appropriate group size.</p>
Cold	<ol style="list-style-type: none"> 1. Hypothermia 2. Exhaustion 	<p>Appropriate clothing Good prior intake of food and liquid. Survival bag/food/extra clothing</p>
Water	<ol style="list-style-type: none"> 1. Hypothermia 2. Trapped by rise in levels 3. Drowning 	<p>Check weather forecast. Prior knowledge of particular system. Avoid unnecessary contact with water. Appropriate clothing/survival bag. Monitor water levels continuously Appropriate call out time.</p>
Constricted areas	<ol style="list-style-type: none"> 1. Getting stuck 	<p>Prior knowledge of system. Caution exercised; know your limits Appropriate call out time.</p>
Uneven terrain with sudden drops	<ol style="list-style-type: none"> 1. Falling ⇒ injury 2. Strenuous / slow movement ⇒ hypothermia and exhaustion 	<p>Cave in groups. Caution exercised at all times. Use of aids where appropriate. Appropriate call out time.</p>
Loose rocks	<ol style="list-style-type: none"> 1. Strike ⇒ injury 2. Crushing ⇒ injury 3. Collapse ⇒ trapping (hypothermia/exhaustion) 	<p>Wear helmet. Avoid hazardous areas if possible. Prior knowledge of system. Regular review of journals / noticeboards and consultation with other cavers. Food, spare light, survival bag, extra clothing carried. Cave in groups. Appropriate call out time.</p>
Complex Systems	<ol style="list-style-type: none"> 1. Getting lost → Group split up 2. Lamps run out 3. Hypothermia/exhaustion 4. Unable to exit 	<p>Prior knowledge of system. Consult survey. Stay together. Carry whistles, spare lights, survival equipment. Appropriate call out time.</p>
Noise (Waterfalls, echoes)	<ol style="list-style-type: none"> 1. Communication difficult. 	<p>Carry Whistles. Awareness of calls or signals for pitches.</p>
Poor air quality	<ol style="list-style-type: none"> 1. Headaches 2. Breathing difficulties, unconsciousness, death 	<p>Prior knowledge of system; avoidance of all reported areas. Immediate exit if problems encountered.</p>

Surface hazards in cave location / return from cave

Hazard	Associated risks	Measures to reduce risks
Darkness Cold Uneven terrain with sudden drops	As for cave environment	As for cave environment, plus Familiarity with route to / from cave. Carry map and compass (can be left in cave entrance) Stay together. Carry whistles, survival kit, food. Have appropriate clothing for surface. (can be left in cave entrance)
Bad weather	1. Getting lost 2. Group splits up 3. Hypothermia/exhaustion	As above

Hazards specific to equipment

Hazard	Associated risks	Measures to reduce risks
Transport	1. Accident due to unfamiliarity with vehicle 2. Accident due to driver tiredness	1. All drivers of hire vehicles undergo OUSF assessment 2. Two drivers whenever possible for journeys over 3hrs duration; Frequent breaks encouraged; Appropriate cave trips (length, start time, grade) for driver and others on “return day”.
In-situ gear	1. Failure of fixed belay points (rock anchors, P- hangers, etc.) 2. Failure of fixed aids (handlines, slings, fixed ropes and ladders, etc)	Review of journals / notice boards regarding condition of in-situ gear. Condition of fixed belays checked before use. Multiple belays used where appropriate. Fixed aids used with caution, or replaced.

<p>Rope</p>	<ol style="list-style-type: none"> 1. Belay failure due to poor rigging 2. Rope failure due to rubbing (poor rigging) 3. Rope failure due to weakening from prior usage (abrasion, shock, etc.) 4. Rope failure due to weakening from poor storage (chemical or UV attack) 5. Rope too short for pitch <p>A) All could lead to falls resulting in injury or death. B) Rope failure can entrap those below pitch.</p>	<p>A) 1, 2. Riggers have appropriate experience and competence. All cavers check rigging before use. 3, 4. Rope and belays checked before usage. 3, 4. Rope and belays correctly maintained. 4. Rope to be stored and transported appropriately 5. Ensure knot in end of rope.</p> <p>B) Carry whistles, spare lights, survival equipment. Appropriate call out time.</p>
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<p>Ladders</p>	<ol style="list-style-type: none"> 1. Belay failure due to poor rigging 2. Ladder failure due to weakening from prior usage (severe bending, shock, etc.) 3. Ladder failure due to weakening from poor storage (chemical attack) 4. Climber exhaustion leads to fall. 5. Poor climbing technique leads to fall. 6. Fall not held by lifeliner 7. Falling climber pulls off lifeliner. 	<ol style="list-style-type: none"> 1. Riggers have appropriate experience and competence. All cavers check rigging before use. 2, 3. Ladder and belays checked before usage. 2, 3. Ladder and belays correctly maintained. 3. Ladder to be stored and transported appropriately 1-5. Lifeline always used to protect climber, either self-lined, or lined by other caver. 4,5: Personal fitness and experience. 6. Lifeliner uses appropriate technique. 7. Lifeliner properly attached to belay.
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<p>Rigging</p>	<ol style="list-style-type: none"> 1. Rigger not attached and falls when rigging. 2. Rigger not attached and falls when derigging 	<p>1, 2 Riggers should be attached either by cowstails to a suitable attachment point or must be attached to a properly rigged traverse rope by a hand jammer 1, 2 Riggers should when possible rig traverse lines to pitch heads from a reasonable distance from the pitch head so they are always attached when above the drop 1,2 Riggers have appropriate experience and competence</p>
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Lamps	Failure (see darkness)	Spare lights carried. Long-life LED lamps preferred. Spare batteries carried. Defective lamps reported, taken out of use.
Personal Equipment (Clothing, helmets, boots, etc.)	<ol style="list-style-type: none"> 1. Inappropriate clothing =>Hypothermia. 2. Inappropriate or worn equipment. => Failure=> injury/death 	Proper maintenance of personal gear Pre caving checks.
Personal SRT kit	<ol style="list-style-type: none"> 1. Failure of harness / cowstails, etc. => injury/death. 2. Failure or loss of ascenders, etc. => may slow or prevent exit. (hypothermia/exhaustion) 3. Poor technique => fall, injury/death. 4. Poor technique may slow or prevent exit. (hypothermia/exhaustion) 	<ol style="list-style-type: none"> 1,2. Frequent inspection and good maintenance of personal equipment. 3,4 Personal competence in SRT. 2,4 Carry whistles, spare lights, survival equipment, first aid kit. 2,4. Appropriate call out time.
Catering	<ol style="list-style-type: none"> 1. Cuts 2. Scalds/burns 3. Fire 4. Food poisoning 	<ol style="list-style-type: none"> 1,2. Normal caution exercised. 1,2. First aid kit available 3. Fire extinguisher available. 4. Good hygiene.