

RESTRICTED

ANNEX O TO CHAPTER 18

CAVING

(PARA 18.075 REFERS)

GENERAL

1. Caving is a challenging activity recognised as meeting the criteria for adventurous training (as defined within AGAI Vol 1 Ch 11 and JSP 419), recreation or sport as defined within Games and Sports in the Army.
2. These instructions apply equally to:
 - a. All caving conducted at EL Wings or specialist AT centres/wings and Phase 1 training establishments including AFC (H).
 - b. Caving carried out under the auspices of the Combined Services Caving Association (CSCA).
 - c. All other caving activities by Service personnel, MOD civilians, or civil servants not covered by Paragraphs 2.a and 2.b.
3. All caving activities are to be subjected to a risk assessment and, where appropriate a site-specific risk assessment. The responsibility for ensuring that all equipment is fit for use, instructor/student ratios are met and that training is conducted safely¹ lies ultimately with the senior instructor/leader conducting the activity. Policy clarification is available from the chain of command or the publications identified at Paragraph 1 to this Annex.

Deep Water

4. Defining 'deep-water' could easily become prescriptive; however, using the Risk Assessment, combined with personal knowledge of the cave a less prescriptive and more informed decision can be made. Leaders/instructors must bear in mind that cavers/individuals have drowned in relatively shallow water (as little as knee to waist high water). The term "deep water" is used to describe a body of moving or static water that exceeds the waist height of the shortest person present and/or is moving at a speed faster than the slow walking pace of the shortest person present. Deep water is not to be entered by any non-swimmer and ought to be avoided by swimmers, not only because of the risk of drowning, but also because immersion will increase the risk of hypothermia.

NON-SWIMMERS² ARE NOT PERMITTED TO ENTER DEEP WATER

UNDERGROUND SWIMMING

5. No person is permitted to swim underground whilst caving unless he/she has passed the recognised Joint Service Adventurous Training Swimming Test (JSATST) or, from 1 Apr 05, the revised Military Swimming Test (MST). **(Personnel who have passed the pre-1 Apr 05 MST are still required to pass the JSATST in addition).**

¹ IAW current instructor/leader limitations as published in leader/instructor report.

² A non-swimmer is defined as any person who has not passed the post-Apr 05 MST or JSATST.

RESTRICTED

6. Swimming will often be the quickest and easiest method of crossing deep water; however, it is potentially the most dangerous. If swimming is planned the leader must ensure that:
- a. No person is permitted to swim underground whilst caving unless he/she has passed the JSATST/Revised MST. Notwithstanding any documented swimming test, if there is any concern about an individual's ability to swim it is the responsibility of the leader/instructor to conduct the test in a local swimming pool. If an individual fails this test they are NOT PERMITTED to swim or enter deep-water underground.
 - b. A personal buoyancy aid must be worn when swimming underground. The buoyancy aid is to have a Certificate of European (CE) mark of approval and be rated at 50 or 80 Newtons, appropriate to the individual's bodyweight, and checked by the instructor/leader before activities start.
 - c. In caves where conditions are likely to involve prolonged exposure to cold and/or water (as indicated in the cave guidebook, where available) then wetsuits are to be worn by each member of the party.
 - d. All equipment is able to float this will usually require that the equipment is packed in watertight containers or sealed dry-bags.
 - e. The majority of caving equipment is heavy and will cause the cavers to quickly sink. Tests have shown that a 3-mm wetsuit provides only limited buoyancy to compensate for the weight of a standard SRT kit. Therefore, if swimming in a wetsuit is planned a buoyancy aid must still be worn.

BOATS

7. The use of inflatable boats is rarely necessary and will be limited to expedition caving. A large tyre inner tube will normally suffice. Due to the fact that boats can easily be punctured and inner tubes are very unstable, buoyancy aids are to be worn when using boats or inner tubes underground.

EMERGENCY SWIMMING

8. In an emergency it may be necessary to swim in "thermal" caving clothing, without a CE approved personal buoyancy aid. The leader must consider the following points:
- a. If the swim is short, use a releasable safety rope attached to each person in turn so that they can be pulled to safety if they get into difficulty.
 - b. Use equipment such as dry bags; drink bottles or bivi bags to make improvised floatation devices. Extreme caution must be exercised, as loss of this emergency buoyancy in a critical situation may be fatal.
 - c. Remove boots before swimming. The weight of footwear has a detrimental effect on a person's ability to swim.
 - d. Remove harness and loosen clothing to allow free flow of water (which will increase the risk of hypothermia). The action of swimming tends to cause water to collect within the oversuit/outer clothing, which increases negative buoyancy and greatly restricts movement.
 - e. Equipment carried is not to be attached to the caver. It must be easily discardable if the caver gets into difficulty.
 - f. Cold water will rapidly cause fatigue, and hypothermia will be a major factor to consider prior entering the water. It may be worth removing relatively dry warm under suits prior to the swim and placing them inside a waterproof bag for the duration of the swim. If fibre pile or fleece suits get saturated they provide little or no thermal insulation and must be removed and wrung out to expel as much water as possible to reduce the risk of subsequent hypothermia.

RESTRICTED

9. The collection of water in sealed cuffs (arms), sealed ankles or boots (legs) or the upper body when a tight caving belt is worn also increases the potential for negative buoyancy. The time lapse between entering the water to negative buoyancy is dependent on how long the water takes to fully saturate the clothing. This can differ according to the movement of the individual in the water and how watertight the oversuit is at neck, cuff and leg. Tests have been conducted to determine the risk of negative buoyancy in outdoor pursuits. The results are detailed in the following Table:

Ser	Clothing and equipment	Sink/Float	Time to sink	Reserve of buoyancy	Comment
(a)	(b)	(c)	(d)	(e)	(f)
1	Fibre pile undersuit PVC oversuit belt and harness	SINK	1 min 36 sec	Nil	Movement in the water will decrease time to sink.
2	As above with the addition of full SRT kit	SINK	1 min 05 sec	Nil	
3	Neofleece and full SRT kit	SINK	1 min 56 sec	Nil	
4	3mm wetsuit and full SRT kit	Float		<2 kg	Very little reserve
5	5mm wetsuit and full SRT kit	Float		4 kg	Very buoyant

FAST FLOWING WATER

10. Fast flowing water is a serious hazard. Crossing relatively shallow fast moving water may cause a caver to be swept off their feet and into deep water or over a pitch head. Personal knowledge of a particular cave system may indicate that there is little risk. However, extreme care must be taken in an unfamiliar cave system. If the leader is concerned about the risk of crossing water they must use a traverse line, safety rope or avoid the crossing altogether. If carrying a 'tackle sack' it is not to be attached to the caver by its hauling line; one strap is to be taken off a shoulder so that the sack can be quickly discarded if the caver finds himself or herself in difficulty in deep water. In all cases, controls identified in the generic or site-specific risk assessments are to be followed.

FREE DIVING SUMPS

11. Subject to a site specific risk assessment only experienced cavers are to undertake free diving sumps or restricted ducks. The leader must already be experienced in passing the particular sump in question. All members of the party must be swimmers and are to be suitably dressed in a wetsuit. If the water is particularly cold the leader is also to consider the use of a wetsuit hood and goggles. Cavers should get fully immersed in the water prior to diving the sump to remove any air trapped in the clothing and to accustom the caver to the cold water. Only sumps up to 5m (16') are to be attempted by free diving.

RESTRICTED

ANNEX P TO CHAPTER 18

OTHER CHALLENGE ACTIVITIES INVOLVING WATER

(Para 18.076 refers)

GENERAL

1. This Annex sets out general guidelines for those challenge activities involving water which are not covered in the other annexes to this Chapter and are not accredited as JSAT activities. Many of these water activities also involve rock environments, and the hazards associated with those environments. There are a number of different names given to the range of combined water and rock activities, including:

- a. Sea level traversing (primarily a dry, rock climbing activity).
- b. Coasteering (usually a coastal, wet activity often involving swimming and/or jumping from a height into water).
- c. Canyoning (usually a wet activity, which traditionally involves the descent of a steep watercourse and sometimes involving technical rope work).
- d. Adventure swimming (another name for Coasteering or a non-technical variation of canyoning).
- e. Gorge walks; ghyll scrambles or scrambles (which can be wet, dry or alternating).
- f. River running (swimming down white-water rapids with or without flotation devices such as body boards or inflatable aids).

This list is not exhaustive; this Annex provides generic guidance, which can be applied to most situations involving combined water and rock activities. Activities known as bridge jumping, bridge swinging and bungee jumping are **not** to be undertaken as challenge activities.

Risk Assessment and Accident Prevention

2. Leaders of challenge activities involving water are to ensure that a risk assessment is undertaken by a competent person, covering those risks that are reasonably foreseeable, and that identified controls are followed. This includes assessing and planning for contingencies arising from foreseeable changes. Factors to be considered on every occasion an activity takes place include the site-specific hazards and the hazards associated with the route to and from the venue where the activity is taking place. When producing a generic risk assessment for combined water and rock activities, the following are to be considered:

- a. **Impact with a solid object.** This includes rocks falling from above, falling onto rocks, jumping/ falling onto submerged objects, jumping from a height into water, and being swept against something solid.
- b. **Drowning.** This includes being trapped under water, repeated submersion in stopper waves or sea swell, suddenly rising water e.g. 'freak waves', flash floods and dam releases, and slowly rising water, e.g. being trapped by rising tides or rising river

RESTRICTED

levels, falling into water and being swept away, and sudden immersion (dry/secondary drowning etc).

c. **Hypothermia.** Factors leading to hypothermia include inadequate personal clothing or equipment during or after the activity, submersion e.g. being swept out to sea, extended immersion and cold temperatures.

3. Where specific significant risks are identified, a specific risk assessment should be undertaken in addition.

PARTICIPATION – NON-SWIMMERS

4. In all circumstances, personnel who have not passed the post-1 Apr 05 MST or JSATST are not to take part in any form of water-based challenge activity.

NON-SWIMMERS³ ARE NOT PERMITTED TO ENTER DEEP WATER⁴

CONTROLLING THE HAZARDS

5. **Group Leader/Instructor Competence.** The generic/specific risk assessment must identify what skills, knowledge and competencies are needed for leaders/instructors at each venue, but they will probably include knowledge, skills or experience of climbing (rock activities), characteristics of water (i.e. surf, tides, currents, depth and temperature of water and river flows) and other site specific hazards. Authorising officers are to satisfy themselves that leaders/instructors have the necessary blend of qualifications, experience, maturity, currency, instruction techniques, communication skills and life-saving/rescue/emergency techniques for the activity. Appropriate first aid equipment and emergency equipment are to be carried, as identified in the risk assessment. Up-to-date information on weather and water conditions is to be obtained before starting any activity. Authorising officers are to satisfy themselves that those personnel being led on such activities have the necessary knowledge, training and experience for the level and nature of the activity.

6. **Group Size.** The size of the group and the number of instructors needed will depend on a number of factors including the skills and competence of the group, the venue used and the experience and qualifications of the group leader. JSP 419 instructor/student ratios for recognised activities are to be used as guidelines.

7. **Briefings/Communication.** Group leaders/instructors are to tell participants what they can do to help ensure their own safety. It may not be appropriate for instructors to deliver all relevant instructions in one briefing, and verbal communication at some venues can be very difficult. Group leaders/instructors are to decide whether other systems of communications are necessary and introduce them where they are needed.

8. **Venue Selection.** It is critical to ensure that the venue selected is suitable for the capabilities of the group. It is advisable to have alternative venues and start/finish and access/exit points so that the degree of difficulty and the duration of the trip are at the right

³ A non-swimmer is defined as any person who has not passed the post-Apr 05 MST or JSATST.

⁴ For the definition of deep water, see Paragraph 4 of Annex O to this AGAI.

RESTRICTED

level for the group. On the day, the most appropriate venue or variation on the venue should be used taking into consideration weather conditions, competence of the group and the number and experience of staff.

9. **Clothing and Equipment Selection.** What is appropriate will vary from day to day, and venue to venue. For most activities (particularly those that involve entering the water) an appropriate buoyancy aid and a helmet will be needed. (Refer to the annual DCI on buoyancy aid/SSE selection.) The risk assessment will identify what equipment is needed and the competencies needed to use it safely.

10. **Emergency Action/Evacuation Plans.** All those involved in the activity need to be aware of their responsibilities in the event of an emergency. Those leading the activity need to have the necessary competencies and the equipment to deal with any immediate problems and know how to get help if it is needed. Authorising officers are to ensure that an Emergency Action/Evacuation Plan has been prepared and is known and understood by all leaders/instructors and support staff.

11. **Safety Boats.** Where the use of safety boats is considered, procedures outlined in Paragraph 18.037 of this Chapter are to be followed.

12. **First Aid.** First aid considerations include a procedure for rewarming cold participants and should take into consideration the nature of the venue, transport arrangements etc. Group leaders/instructors are to hold an in-date First Aid qualification covering CPR and EAR or ensure such a trained and current individual is in the group. First Aid qualifications must have contained an assessment of the skills required to deal with the hazards associated with the activity and identified in the risk assessment.

RELEVANT QUALIFICATIONS

13. Potentially relevant military qualifications include HBF, JSRCI, AJSMEL, JS Level 3 Kayak Coach (Inland and Sea disciplines), JS Cave Leader and JS Caving Instructor, depending on venue, activity and circumstances. For example, Coasteering may require a combination such as the JSRCI and Level 3 Kayak Coach (Sea) qualifications. Civilian instructor and leader qualifications relevant to the conduct of these activities include the Mountain Instructor Certificate (MIC), Mountain Instructor Award (MIA), British Mountain Guide (BMG), Cave Instructor Certificate (CIC), the BCU sea kayaking, surfing or white water rescue awards, Swiftwater Rescue Technician and surfing awards. It is unlikely that one qualification alone will provide adequate evidence for these multi-disciplinary activities a combination of some of the above will be appropriate in most instances. Where such combinations cannot cover activities, the activity is not to proceed. Where activities are of a repetitious nature (e.g. used within a training or development programme of a cyclic nature), site specific training of instructors/leaders may warrant their holding a lower level of qualification than would be appropriate for a stand-alone 'ab initio' activity.

Further Advice

14. Further advice on the feasibility of activities, appropriate instructor/leader qualifications, and the application of the JSP 375 Vol 2 Leaflet 11 (Safety in Military Training and Exercises) Risk Assessment process may be obtained from Formation PAT staff, CI JSMTTC (I) and the LAND Accident Prevention and Investigation Team (LAIT).

RESTRICTED

USE OF CIVILIAN AGENCIES

14. The engagement of external civilian agencies to provide activities such as those listed in this Annex does not absolve authorising officers from satisfying themselves that training is to be conducted in a safe manner. A written military originated risk assessment is still required, and a copy is to be passed to the civilian agency.