



THE UNIVERSITY  
OF BIRMINGHAM

## Safety Policy

# Rules and Guidance for the Safe Conduct of Fieldwork, Expeditions and Outdoor Activities

USP/90/FW/18

This booklet has been approved by the Environment Health and Safety Executive Committee and the Joint Safety Advisory Committee. It is not intended to be a comprehensive guide but rather an outline of basic factors that should be considered when fieldwork or outdoor such activities are planned. It must be read by anybody planning or leading such fieldwork activities.

This document should be read in conjunction with Health and Safety Guidance *Travelling and Working Abroad* available at [\[https://www.intranet.bham.ac.uk/university/hsu/documents/hsguidance/24twa.pdf\]](https://www.intranet.bham.ac.uk/university/hsu/documents/hsguidance/24twa.pdf)

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# Rules and Guidance for the Safe Conduct of Fieldwork, Expeditions and Outdoor Activities

USP/90/FW/18

## INTRODUCTION

The range of activities covered is vast and it is difficult to be specific about safety requirements. For instance, the health and safety considerations for the following types of fieldwork will differ greatly in their nature and complexity:

- A supervised afternoon visit by students to collect botanical samples in the Clent Hills.
- A series of visits by a Research Associate to a busy road junction in Wolverhampton to measure traffic density.
- A fully supervised field course based on a hostel to study geology in the Lake District.
- A fully independent field expedition by staff and students to study high altitude mammalian life in Nepal.

For the purposes of this booklet, **fieldwork** is defined as any practical work, carried out by staff or students (including Continuing Studies students) of the University for the purpose of teaching and/or research in places which are not under University control but where the University is responsible for the safety of its staff and students and those exposed to their activities. The following activities may involve fieldwork:

Surveying, collecting biological and other specimens, making observations on living organisms, ecology, astronomy, meteorology, geology, geographical and environmental studies, photography, archaeology, sociological studies, medical studies, transport and accident research.

This booklet covers safety aspects of the fieldwork activity itself and any other activities necessary to mount a fieldwork expedition (e.g., transport, catering, equipment maintenance, etc.). It also covers recreational and other outdoor activities undertaken or organised by persons as part of their University employment. It may also provide useful guidance to people organising and participating in outdoor activities of a purely private nature.

**PART 1 SETS OUT RULES FOR SAFETY IN FIELDWORK AND OUTDOOR ACTIVITIES: THESE ARE PART OF UNIVERSITY POLICY AND MUST BE COMPLIED WITH**

**PART II GIVES GUIDANCE ON HOW THE RULES MAY BE COMPLIED WITH. WHERE APPROPRIATE, THIS MUST BE SUPPLEMENTED WITH SPECIFIC SCHOOL OR DEPARTMENTAL CODES OF PRACTICE**

This document should be read in conjunction with Health and Safety Guidance *Travelling and Working Abroad* available at <https://www.intranet.bham.ac.uk/university/hsu/documents/hsguidance/24twa.pdf>  
This document gives guidance on arrangements for safe travel, insurance procedures that have to be followed and the University's position on travelling to countries or parts of countries that the Foreign Office advises should not be visited.

### Notes

- a. In this booklet, 'must' indicates a requirement which is essential for compliance with a rule and 'should' a highly desirable feature. In neither case is there necessarily a legal requirement.
- b. The Rules apply to any consultancy or other work carried out directly or indirectly on behalf of the University but not to work of purely private nature.

- c. The contents of this booklet will be subject to periodic review and amendments will be issued from time to time.
- d. Superscript numbers refer to references in Appendix D.
- e. Further information, including details of suppliers of safety equipment, can be obtained from the Health and Safety Unit.

# PART I

## Rules for Safety in Fieldwork, Expeditions and Outdoor Activities

Rule		Section
1	Schools and Departments must ensure that before any activity is undertaken, a suitable and sufficient assessment of the risks involved is made and safe systems of work are devised based on the recommendations of this document.	2
2	Supervision of people undertaking activities must be adequate. All groups must have a leader whose authority and responsibilities are clearly defined.	2
3	Independent activities may only take place if a thorough risk assessment has been made and clear safety guidelines have been laid down.	2
4	Itineraries of all expeditions must be deposited with a responsible person. Contact must be maintained on a planned basis and itineraries updated as necessary.	2
5	Leaders and participants in activities must be suitably qualified and experienced. Participants must not be put under pressure to undertake tasks that are beyond their confidence or competence.	3
6	Appropriate medical and first aid cover must be arranged.	4
7	Vehicles must be adequately maintained and driven safely by competent and qualified persons.	5
8	Catering must be carried out under hygienic conditions. An adequate supply of potable water must be arranged.	6
9	Reasonable standards of personal hygiene must be maintained.	6
10	Suitable and safe accommodation must be arranged.	7
11	Adequate protective clothing must be worn.	8
12	Equipment must be suitable for its intended use and must be maintained in a safe condition.	9
13	Adequate precautions must be taken to protect persons from the hazards of the environment.	10
14	Dangerous substances and items must be handled, stored, transported and disposed of safely.	11
15	Fire risks must be kept to a minimum, particularly with regard to cooking stoves and fuel storage.	12
16	Contingency plans for dealing with emergencies must be made. All accidents must be reported promptly. Records of persons to be contacted in the event of an emergency must be kept.	12
17	Local safety rules of the owners of sites visited in the course of fieldwork and other activities must be observed.	
18	Activities must be undertaken in such a way as to cause the minimum of harm to the environment.	

## CHECKLIST

<input type="checkbox"/> Have you made a risk assessment?	→No→	Hazards of environment, risks of work activity, experience of participants. See section 1
↓		
Have adequate arrangements for supervision been made?	→No→	Is it appropriate to level of hazard? Are staff, student ratios adequate? Have deputising arrangements been made?
↓		↓
Have arrangements for depositing itineraries and plans been made?	→No→	See Section 2
↓		↓
Will people be working independently?	→Yes→	Is the risk acceptable?
↓		
Will the expedition last >24 hrs?	→Yes→	Have names/addresses/next of kin, GP's been recorded. See Section 2
↓		
Do participants have sufficient training/experience?	→No→	See Section 3, especially first aid, survival, rescue
↓		↓
Are participants fit?	→No→	Training programme needed
↓		↓
Do they need health monitoring vaccination etc?	→Yes→	Section 4. Do special arrangements need to be made for anybody?
↓		↓
Do they need health education?	→Yes→	Physical, chemical, biological hazard, personal hygiene etc
↓		↓
Are you using your own land, water or air transport?	→Yes→	Is it suitable? How will it be maintained? Are drivers/pilot trained and licensed? Are navigational skills sufficient. See Section
↓		↓
Are you preparing your own food?	→Yes→	Will there be a sufficient supply of wholesome food/drink? Will it be hygienically prepared? See section 6
↓		↓
Will you be using overnight accommodation?	→Yes→	Is it safe, particularly with reference to fire, electrical, and gas and hygienic?
↓		↓
Is protective clothing sufficient and appropriate?	→No→	See Section 8
↓		↓
Has equipment been properly checked?	→No→	Is it suitable? Is it sufficient? How will it be maintained repaired and decontaminated? See Section 9
↓		↓
Have the risks of collecting specimens and taking measurements been considered?	→No→	See Section 10
↓		↓
Will dangerous substances be handled?	→Yes→	Are you complying with relevant Regulations and University Health and Safety Policy? Are controls on use adequate? see Section 11
↓		↓
Have you made proper emergency plans?	→No→	Equipment, training, liaison. See Section 12
↓		↓
Have you got adequate insurance cover? Have you got adequate insurance cover? Refer to Health and Safety Guidance <i>Travelling and Working Abroad</i> available at <a href="https://www.intranet.bham.ac.uk/university/hsu/documents/hsguidance/24twa.pdf">[https://www.intranet.bham.ac.uk/university/hsu/documents/hsguidance/24twa.pdf]</a>		

## PART II

# Guidance on Safety in Fieldwork, Expeditions and Outdoor Activities

### 1 ASSESSMENT OF FIELDWORK HAZARDS

See Rule 1

Many fieldwork and outdoor activities will take place in unfamiliar surroundings. The environment may be remote and conditions potentially hostile. Every effort should be made to prevent injury or illness. Dealing with a sick person may put considerable strain on the resources of a fieldwork expedition as medical care and other emergency services may not be readily available. Members of the party may be diverted from their allotted tasks and may not be able to complete their projects so that the aim of the expedition is not achieved. Tension may build up between participants and pave the way to further accidents. Several tragic accidents have occurred on educational trips and expeditions in recent years.

Before any activity is undertaken, no matter how simple and straightforward, the organisers and leaders must make a thorough assessment of the likely risks involved. Expert advice must be sought where necessary. The more elaborate and potentially hazardous the expedition, the more extensive this assessment must be. The following should be taken into consideration as appropriate:

- a. The experience and qualifications of the expedition leaders and other participants. Staff student ratios. Maximum and minimum party sizes.
- b. Modes of transport and their associated hazards, choice of route, timings.
- c. Accommodation should be suitable, maintained in a safe condition and operated safely.
- d. Supply of wholesome food, potable water and fuel.
- e. Suitability of protective clothing and other equipment.
- f. Dangerous substances likely to be handled.
- g. Dangerous animals, plants and microorganisms likely to be encountered.
- h. The hostility of the environment.
- i. Likely climatic conditions (bearing in mind seasonal changes), bad weather alternatives and escape routes.
- j. Potentially hazardous activities to be undertaken (e.g. diving, rock climbing and caving).
- k. Possible problems involving personal relationships.
- l. Communications, including possible language difficulties.
- m. Security.
- n. Availability of medical care and emergency services.
- o. Relevant safety legislation.
- p. Insurance cover and liability (liability considerations may be very complex). Refer to Health and Safety Guidance *Travelling and Working Abroad* available at [\[https://www.intranet.bham.ac.uk/university/hsu/documents/hsguidance/24twa.pdf\]](https://www.intranet.bham.ac.uk/university/hsu/documents/hsguidance/24twa.pdf)

**Notes on selected fieldwork hazards are given in Appendix A**

**A safe system of work** must be devised in the light of the assessment and discussed and agreed with the Head of Department/School, Health and Safety Co-ordinators, Trade Union Safety Representatives (in appropriate cases) and other interested parties. These will vary greatly according to the type of activity but they should be brief, clear and specific. All members of the expedition must be familiar with the safe system of work and a copy should be kept in the Budget Centre Safety Notes and one sent to the Health and Safety Unit.

## 2 SUPERVISION

**See Rules 2,3 and 4**

Fieldwork and outdoor activities cannot normally be as closely supervised as other Budget Centre activities and considerable responsibility lies with the organisers and leaders of expeditions to ensure that supervision is adequate. Three basic levels of supervision can be defined:

- a. **Fully supervised courses** These are normally of short duration in low hazard environments. Students are closely supervised by experienced members of staff. Participating students may be inexperienced and ignorant of the potential hazards of the environment and necessary safety instruction must be an integral part of the course. Students on such courses must not be intentionally exposed to hazardous situations and should not normally be allowed to work independently. Careful consideration must be given to the ratio of staff to students. This will depend on the nature of the activities, the experience of the participants and the hostility of the environment. As a basic standard, the maximum number of inexperienced students involved in low hazard activities (e.g., surveying, collecting geological or botanical specimens etc) in reasonably rugged countryside in summer should be 10 per experienced staff member. Each party should contain at least 2 experienced persons. Deputising arrangements must be made in case the leader becomes incapacitated. Maximum and minimum limits to party size should be set carefully bearing in mind the environment (e.g., parties > 15 tend to be unwieldy in rugged country) and the logistics of foreseeable emergencies.
- b. **Field expeditions.** These may be prolonged and in environments which are remote and potentially hazardous. The expedition may be fully independent and self supporting. Participants will normally be experienced and/or will have had basic training in the necessary skills. The expedition must have a leader whose authority and responsibilities are clearly defined and understood by the participants. Adequate deputising arrangements must be made in case the leader becomes incapacitated or the expedition splits up into smaller groups. Leaders must have adequate experience and training and be aware of local hazards and conditions. Particular care must be exercised in places where the climate is likely to be extreme, where the terrain is dangerous (rock faces, glaciers, quicksand, marshes, tidal zones, etc.) or where dangerous animals and diseases may be present.
- c. **Independent activities.** It may be necessary for some activities to be undertaken alone. This should only be allowed after thorough consideration of the risks taking into account the nature of the work, the hostility and remoteness of the environment and the experience of the person concerned. Some activities (e.g., diving, rock climbing and caving) should never be attempted alone but there are other activities, which are not without hazard, where flexibility is reasonable. If undergraduate students are required to do independent work as part of their courses, Departments/Schools must lay down clear guidelines on the scope of activities which may be undertaken, the types of terrain where these may take place, the experience and training required and health and safety and supervision arrangements.

Departments/Schools must be aware of the activities of fieldwork groups. A plan of work which includes the proposed itinerary and timetable must be deposited with the Department/School and updated as necessary. If the work is conducted at a place remote from the University, an accurate itinerary must be deposited with an appropriate responsible person or organisation (Police, Mountain Rescue Team, Coast Guard etc.). Independent workers must do this on a daily basis. Communication must be maintained on a planned basis and search action to be taken in the event of people not checking in on time agreed.

If any activity requires the absence of participants for more than 24 consecutive hours (including weekends, Bank Holidays and days when the University is officially closed), participants should be asked to keep the following information on their person:



- a. Name, telephone number and address (term time address for students if appropriate)
- b. Name telephone number and address of next of kin or person to be contacted in an emergency.
- c. Name telephone number and address of GP.

Duplicate information should be kept by the leader of the party and a copy deposited with the Budget Centre(s) concerned.

Supervision arrangements must be compatible with University Requirements (*Guidance for Academic Supervisors and Others who may be Supervising Academic Work*: GUIDANCE/16/SAW/00).

### **3 TRAINING**

### **See Rule 4**

The skills required for fieldwork, expeditions and outdoor activities are various and it is important that all concerned are adequately trained before or during the activity. Nobody must be asked to attempt tasks that are beyond their competence or confidence. It is particularly important that leaders should have adequate training and experience. Training that might be required could include:

- a. Avoidance of health hazards (Section 4)
- b. Driving vehicles, handling boats and aircraft, swimming, riding, skiing, hillwalking etc. (Section 5)
- c. Navigation and map reading (Section 5)
- d. Catering and hygiene (Section 6)
- e. Use of protective clothing (Section 8)
- f. Care and maintenance of equipment (Section 9)
- g. Use of explosives or firearms (Section 9)
- h. Communication (use of radios, etc.)
- i. Collecting specimens (Section 10)
- j. Handling dangerous substances (Section 11)
- k. Lifting and carrying
- l. Swimming, diving, rock climbing, caving, etc.
- m. Fire safety
- n. Survival (Section 12)
- o. Life saving, mountain rescue, (mountain) first aid, resuscitation etc. (Section 12)
- p. Physical fitness.

Very careful consideration must be given to the qualifications of expedition leaders. Where necessary, formal qualifications must be sought (see Appendix B). Staff engaged in field classes in remote, mountainous or potentially hazardous terrain must be trained in emergency first aid, simple survival and self rescue techniques and liaison with rescue services. At least one other member of the party should have the necessary qualifications to take over in the event of the leader becoming incapacitated.

If use of a land vehicle, boat or aircraft is necessary for the safety of an expedition, at least two members of the party must be able to drive or pilot it.

At least two members of each party must have appropriate navigational skills. All members of land based parties should have a basic knowledge of the use of map and compass.

If radio communication is necessary for the safety of a party, at least two people must be able to use the radio.

All participants in activities on or near water should be able to swim at least 50 metres in the conditions normally expected. Boat crews must be familiar with rescue procedures, resuscitation techniques and the action to be taken in the event of a capsize.

Training requirements must be clearly specified in codes of practice

## 4 HEALTH MATTERS

See Rule 6

Organisers of fieldwork expeditions and outdoor activities must give careful consideration to the maintenance of the health of participants. Where necessary the advice of the University Occupational Health Service or other experts should be sought.

**Basic fitness.** Activities may be much more strenuous than the normal work of participants and organisers should ensure that, as far as is reasonably practicable, people intending to take part are sufficiently fit. If necessary, they must be encouraged to improve their level of fitness. Participants should also be asked to make a declaration as to whether or not they are knowingly suffering from any physical disability or medical condition that could compromise their health and safety during the particular activity. Examples of such conditions could include haemophilia, diabetes, epilepsy and the taking of certain drugs. While every effort should be made to enable handicapped people to participate in fieldwork, it may sometimes be necessary, after discussion with the University Occupational Health Physician, to make exclusions.

**Health monitoring.** The need for health monitoring and/or immunisation must be considered. Where necessary, consultations must take place and agreement reached between the University Occupational Health Physician the person(s) concerned, representatives of recognised Trade Unions (if appropriate) and other interested parties. The following items could be necessary and might be a condition for engaging in the work:

- a. Questionnaire, interview or medical examination.
- b. Immunisation (see below)
- c. Serum samples taken for future reference.
- d. Tests of immune status or other suitable tests.
- e. Health reviews.

**Health education.** Participants must be instructed in the likely health hazards (see Appendix A) of the area they are visiting and how to avoid them. Particular attention should be given to:-

- a. Physical hazards of the environment (hypothermia, frostbite, snow blindness, dehydration, altitude sickness, nitrogen narcosis, sunburn, etc.).
- b. Chemical hazards.
- c. Avoidance of infection from pathogenic organisms.
- d. Dangerous animals and plants.
- e. Avoidance of gastrointestinal infection and food poisoning.
- f. Basic personal hygiene.
- g. Care of feet.
- h. Safe use of insect repellents.

**Immunisation.** Medical advice on the need for immunisation must be sought where necessary. The requirements for various countries are given in the DHSS Traveller's Guide to Health Leaflet. Immunisation must also be given if fieldwork could result in exposure to certain pathogenic organisms (see *Biological Safety*: UHSP/9/BS/05 and *Guidance on the Management of Biological Risks*: GUIDANCE/12/MBS/07). Tetanus immunisation is recommended for people performing manual tasks where there is a significant risk of cuts or whose work involves handling soil or contact with animals. If a new worker is being engaged or an existing worker being asked to undertake a project that would require immunisation then this immunisation must be made a condition of acceptance for such work. The University Occupational Health Physician will carry out any immunisations that are required but individuals may make other arrangements if they so wish, provided that the University Occupational Health Physician is notified so that a complete record is available centrally in the University.

**Dental Health.** Members of expeditions going to areas where dental treatment is expensive or difficult to obtain are advised to have a dental check up before they go if they have any doubts about their teeth. (See also note on AIDS in Appendix A).

**Injury and illness in the field.** Prompt medical attention must be sought in the event of illness. Sometimes trivial injuries become serious if they are not treated promptly (e.g., wounds become infected more readily in the tropics than in temperate climates). Expedition leaders and doctors (if available) must be on the look-out for symptoms of illness, injury or fatigue and take appropriate action.

## 5 TRANSPORT

**See Rules 5 and 7**

**Walking** Conducting a party of walkers may require considerable vigilance on the part of the leader, especially if the terrain is rough and the walkers inexperienced.

- a. The walkers must be appropriately dressed. Particular attention should be given to footwear and weather resistant clothing.
- b. Adequate equipment must be carried including tents, bivouac bags, crampons, ice-axes, ropes, maps, compass, whistle, torch, first aid kit, emergency rations, etc. as necessary. Leaders must ensure that participants have the knowledge and ability to use the equipment.
- c. Adequate supplies of food and drink must be taken.
- d. The loads walkers are asked to carry must be matched to their physical ability.
- e. Regular breaks for resting, eating and drinking must be arranged.
- f. A watch must be kept for stragglers and walkers in difficulty. One of the more experienced walkers should be at the rear of the party.
- g. Great care must be taken when crossing dangerous terrain (e.g., scree slopes, glaciers, marshes, mountain streams, tidal estuaries, etc.) especially in poor visibility.
- h. People walking along roads at night should wear light-coloured or reflective clothing. A rear light should be carried.
- i. Accurate weather forecasts should be obtained where possible.

**Skiing** Leaders of skiing parties must have adequate training and experience. Skiing demands a high level of strength and endurance and a course of fitness training is advisable. Leaders must ensure that skiers have adequate food and rest and that they are appropriately clothed and supervised. Skiers must not behave in ways that might endanger others. Speed and method of skiing must be adapted to personal ability and prevailing conditions. Routes should be chosen that

minimise dangers from avalanches. A wide margin must be given when overtaking other skiers and care taken when stopping, starting or crossing tracks. Care must be taken getting on and off ski lifts.

**Horse riding** Riders must be appropriately trained. Suitable headgear must be worn. Saddles, harness and other equipment must be maintained in good condition. Horses must be looked after carefully and must not be overworked or placed in dangerous situations.

**Bicycles** must be maintained in a roadworthy condition and ridden safely. The appropriate parts of the Highway Code must be observed.

**Motorised land vehicles** Motor vehicles are often essential to the operation of fieldwork expeditions and risks of accidents and breakdowns must be minimised. Driving 4-wheel drive vehicles, heavy goods vehicles, all-terrain vehicles, tracked vehicles, dumper and fork lift trucks, earth moving equipment, amphibious vehicles, skidoos etc. requires special techniques and training. Drivers must be aware of the limitations of their vehicles and must observe the following:-

- a. Motor vehicles may only be driven by people who are qualified, trained, authorised and insured to do so.
- b. Nobody whose faculties are impaired to a dangerous extent by fatigue, injury, illness, alcohol or drugs may drive a vehicle.
- c. Vehicles must not be driven in a careless, reckless or dangerous manner.
- d. Vehicles must be maintained in a safe and reliable condition.
- e. Seat restraints must be used where available.
- f. Loads must not be excessive or dangerously distributed. They must be properly secured.
- g. If dangerous substances are carried, they must be safely packed and loaded with appropriate warning signs displayed. Relevant regulations must be complied with (see *Hazardous Substances Policy*: UHSP/15/HS/05 Schedule 6 and *Biological Safety*: UHSP/9/BS/05 and *Guidance on the Management of Biological Risks*: GUIDANCE/12/MBS/07).

**Boats and rafts** People leading boating parties must be suitably qualified (see Appendix B). Everybody taking part should be able to swim at least 50 metres under the conditions normally expected. People in small boats must wear life jackets (see Section 8) and be familiar with their use. Safety helmets should be worn for white water boating. Clothing should be appropriate for the conditions likely to be encountered.

- a. Boats must be suitable for the conditions in which they are likely to be used and must be maintained in a seaworthy condition.
- b. Boats must not be overloaded.
- c. Adequate equipment must be carried including, as appropriate, anchors, hawsers, bailers, oars, paddles, radio, batteries, compass, fire extinguisher, rescue equipment, flares, smoke signals, tool kit, emergency rations, life rafts etc.
- d. Navigational rules and conventions must be observed (see also Section 3).
- e. An adequate lookout must be maintained. Care must be taken on white water and in the vicinity of rocks, quays, shoals, wrecks, boats and other obstacles.
- f. Dangerous substances carried on boats must be safely packed and loaded. They must bear appropriate warning signs and relevant regulations must be complied with.
- g. As full a knowledge as possible should be obtained about tides, currents and other local conditions. Weather forecasts should be obtained where possible.

- h. All crew members should be familiar with rescue procedures, resuscitation techniques and the action to be taken in the event of a capsized.

**Balloons, gliders, microlight and light aircraft** University staff and students using these modes of transport must be trained, qualified and authorised. The craft must be maintained and flown in a safe manner. Appropriate rules and conditions must be complied with.

**Public transport** University staff and students must conduct themselves in a safe manner so as not to endanger themselves or other people. Appropriate regulations and legitimate instructions of the operator must be complied with. Dangerous items must not be carried.

**Navigation** At least two members of each party must be fully conversant with the types of navigation appropriate to the environment and mode of transport used. All members of land based parties should have a basic knowledge of the use of map and compass.

**Training** People leading parties and driving vehicles etc must be adequately trained (see Section 3).

## 6 CATERING AND HYGIENE

**See Rules 8 and 9**

Expedition organisers must aim to provide members with a wholesome, balanced and varied diet. Food must be prepared in as hygienic manner as is practicable: gastrointestinal illness could incapacitate a whole expedition. The following points must be observed:-

- a. Food should be selected and prepared carefully. In many parts of the world, raw food (salads etc.), shellfish and ice cream should be avoided and fruit should be washed and peeled before eating. In cases of doubt, food should be thoroughly cooked to kill any contaminating microorganisms.
- b. A supply of potable water must be obtained. If necessary, the water should be sterilised by boiling, filtration or use of tablets. Expedition members should drink enough to be able to pass at least a pint (600 ml) of clear urine daily.
- c. Hands must be washed or cleansed before touching food or after using the toilet.
- d. People with skin, nose, throat or bowel trouble should not prepare food.
- e. Cuts and sores should be covered with waterproof dressings.
- f. People preparing food must, as far as is reasonably practicable, be clean and wear clean clothing.
- g. Smoking, coughing, or sneezing over food must be avoided.
- h. Food preparation areas must be kept as clean as is reasonably practicable.
- i. Food must be kept clean and covered to prevent contamination by dust, insects etc. It should be kept cool (below 5°C) or piping hot (above 70°C).
- j. The practice of cooking food one day for consumption the next should be avoided. Otherwise cooked food must be cooled as quickly as possible and refrigerated within 2 hours. If served hot, it must be thoroughly reheated.
- k. Fingering food during preparation should be avoided. Utensils must be kept clean.
- l. Care must be taken to ensure a balanced diet providing sufficient energy for the tasks in hand, and an adequate supply of protein, mineral salts and vitamins. Diets consisting exclusively of dehydrated food should not last longer than 72 hr at a time.
- m. Lids must be kept on dustbins and waste food disposed of carefully, promptly and regularly.

- n. Cooking stoves must be of safe construction, operated safely, maintained in a safe condition, and sited so as to minimise any fire risk. Solid fuel stoves are safer than gas or liquid fuel stoves. Gas cylinders should be changed in the open air.
- o. Care must be taken to avoid burns and scalds.
- p. Toilets must be maintained in a clean and hygienic condition. Flies and other insects should be excluded if possible.

## **7 ACCOMODATION**

## **See Rule 10**

Accommodation can vary greatly depending on the location and type of work being undertaken. It can range from a tent to a simple hut with no or few facilities to a fully staffed outdoor centre. Expedition organisers need to ensure that what ever accommodation is used is suitable, safe and healthy. Organisers need also to be mindful that standards that are applied in the UK may not always apply abroad. In particular the following should be noted:-

- a. The integrity of the structure.
- b. The standard of fire precautions.  
There should be a suitable means of raising the alarm.  
If there are smoke/heat detectors they should not be uncovered.  
Escape routes should be clear.  
Fire exits should be checked to ensure they can be opened.  
There should be adequate and suitable fire fighting equipment.  
Care should be taken with any sources of ignition, e.g. gas cylinders, open fires.
- c. Other inherent risks including:  
Poorly maintained gas heaters or electrics  
Balconies  
Pools/ponds  
Other hazards adjacent to the accommodation
- d. Hygiene standards.  
Toilets must be maintained in a clean and hygienic condition. Flies and other insects should be excluded if possible

Those using the accommodation should familiarise themselves with the rules and procedures for the accommodation. In particular the fire safety procedures and evacuation procedures should be checked and understood.

## **8 PROTECTIVE CLOTHING**

## **See Rule 11**

Adequate protective clothing must be worn. It must be appropriate to the activities undertaken and should conform to appropriate British Standards. It must be complete, in good condition and worn correctly. After use it must be removed, stored, cleaned, repaired or discarded as appropriate. If it has been exposed to dangerous substances it must be removed in a manner likely to minimise dissemination of contamination and must be thoroughly decontaminated before being reused or discarded. Contaminated clothing must not be worn in 'clean' areas and, in particular, where food and drink are stored, prepared or consumed.

- a. Leaders must ensure that participants are appropriately dressed, particularly in cold conditions.
- b. High visibility outer clothing should be worn where necessary.
- c. Safety helmets must be worn where there is a danger of falling objects (rocks, branches, etc).
- d. Eye protection must be worn if the eyes are at risk (e.g., when using a geological hammer). Full face protection is preferable to spectacles or goggles.

- e. Respiratory protection of appropriate type must be worn if there is a possibility of inhaling harmful fumes or particles.
- f. Ear defenders (muffs or plugs) must be worn if there is a danger to hearing. Visual warning signs should be used if necessary.
- g. People in small boats or working in situations where there is a possible risk of drowning must wear lift jacket. It may, in certain situations, be permissible to use other types of buoyancy aids but this should only be done after very careful consideration of the risks.
- h. Gloves of adequate resistance and durability must be worn if there is a risk of injury to the hands or contamination of the skin.
- i. Plastic aprons and/or boots must be worn when there is a risk of splashing with dangerous substances.
- j. Safety shoes/boots must be worn when handling heavy objects which could cause serious injury to the feet if dropped.

## **9 EQUIPMENT**

**See Rule 12**

### **General**

- a. Equipment used for fieldwork and outdoor activities must be carefully selected with consideration for safety aspects and its suitability for the intended use.
- b. All equipment must be thoroughly checked and tested before use. This is particularly important for such items as vehicles, tents, ropes, ladders, compressed air cylinders etc upon which life may depend. Regular checks should also be made during use. Insurance inspections and tests must be arranged for diving bottles, pressure vessels and other equipment as appropriate.
- c. Items essential for survival should be duplicated where practicable. Duplicate items should not be stored in the same container.
- d. Equipment must be operated in a safe manner. Dangerous parts of machines must be guarded.
- e. Equipment must be maintained and repaired by competent persons as necessary and appropriate.
- f. Equipment which has become contaminated with dangerous substances must be thoroughly decontaminated by an appropriate means.
- g. Damaged equipment must either be repaired or replaced.

### **Electrical equipment**

- 1. Equipment must have an accessible and identifiable means of isolation.
- 2. Terminations must be mechanically and electrically sound. Live terminals must be covered.
- 3. Lead acid and alkaline batteries should have protective insulated covers and be used in well ventilated places.
- 4. Damage to cables must be avoided.
- 5. Equipment must not be operated in wet or damp conditions or outside unless it has been designed for such use.
- 6. Plugs and sockets must comply with appropriate British Standards or equivalent and correct fuses must be used.

7. Mains equipment used out of doors should preferably be operated at 110 volts and be protected by earth leakage or residual current circuit breaking devices.

See also Policy on *Electrical Safety*

**Lasers** Lasers must be used according to the requirements of *Safe Use of Lasers* (GUIDANCE/18/SUL/01).

**Compressed gases** Gas cylinders must be transported and used safely. Adequate precautions must be taken to avoid uncontrolled release of gases into the atmosphere or other potentially dangerous occurrences. See Policy on *Compressed Gas*, (UHSP/20/CG/03) and also *Hazardous Substances Policy* (UHSP/15/HS/05), Schedule 6.

**Explosives, firearms, dart guns, blowpipes etc.** People using these must be adequately trained and possess the appropriate licence, copies of which must be lodged with the Health and Safety Unit.

**Tools** Persons using tools must receive appropriate training. Particular care is needed when using pneumatic tools, rock drills, chain saws and unguarded sharp edged tools.

## 10 SAMPLING, OBSERVATIONS, EXAMINATIONS ETC

see Rule 13

Before starting activities, the surroundings should be examined carefully and any hazards noted. Particular care is needed where there is danger from avalanches, falling rocks or other objects, caves, mines, spoil heaps, trenches, holes, crevasses, derelict buildings, ruins, military training and game shooting areas, overhead power supplies or underground services, marshy ground, quicksand, tides, swift currents, fire, flood, volcanic activity, venomous or aggressive animals and extreme climatic conditions.

- a. Protective clothing must be worn as appropriate (section 8)
- b. Where necessary, fixed ropes or safety harnesses attached to adequately secured safety lines must be used.
- c. Mudflats, estuaries etc. can be very treacherous (quicksands, rapid tides etc.) and local knowledge is required.
- d. Freak waves are more frequent than commonly supposed. Currents, tides and wave conditions must be assessed carefully, especially on exposed headlands and in rough weather.
- e. Underwater observations must be made by adequately trained persons.
- f. Trees, rock faces, ice walls etc should only be climbed by trained and properly equipped persons and reasonably practicable precautions against falling must be taken.
- g. If necessary, lookouts must be posted. This is particularly important where there is a danger from rising tides or flash floods (e.g., in caves in limestone areas). In some situations it may be necessary to use an agreed system of audible and/or visual warnings.
- h. When surveying roads, adequate warning must be given to approaching traffic using signs conforming with current regulations.



- i. Scaffolds, photographic towers etc. must be of sound construction, erected by competent persons and inspected regularly. Ladders must be secured properly and lifting gear must comply with the *Lifting Operations and Lifting Equipment Regulations 1998*.
- j. Excavations must be well planned and made by competent persons, protected against collapse and inspected regularly. Care must also be taken with spoil heaps. Precautions must be taken to avoid hazards from underground services. Derelict buildings may offer tempting shelter but may be unsound and should be avoided.
- k. Quarries and mines present multiple hazards (unstable rock faces, concealed shafts, dangerous working, blasting, deep lakes, quicksand, heavy machinery, etc.). Appropriate Regulations and local rules must be complied with and local knowledge is essential.
- l. Contact with potentially hazardous animals and plants should be avoided.
- m. Precautions must be taken against extremes of heat and cold (see Appendix A).
- n. Where practicable, up-to-date weather reports should be obtained.

## 11 USE OF DANGEROUS SUBSTANCES AND ITEMS

see Rule 14

Dangerous substances should, so far as is reasonably practicable, be handled in the field with the same degree of safety as in the laboratory. Agreed procedures should include the following elements:

- a. Risk assessment for the substances and items in question.
- b. Safety precautions for use, storage, transport and disposal.
- c. Environmental monitoring (if appropriate).
- d. Health surveillance (if appropriate).
- e. Emergency action.

Relevant legislation and University Health and Safety Policy must be complied with and the recommendations of the documents listed below must be followed as appropriate.

### Chemical hazards

Policy on *Hazardous Substances* - UHSP/15/HS/05

S1 - Prohibitions

S2 - Assessment, *Pro forma* and guidance

S3.1 - Control Measures, Good Chemical Practice

S3.2 - Control Measures, Criteria for Enhanced Good Chemical Practice

S3.3 - Control Measures, Enhanced Good Chemical Practice for Work with Chemical Carcinogens

S3.4 - Control Measures, Enhanced Good Chemical Practice for Work with Cyanides

S3.5 - Control Measures, Enhanced Good Chemical Practice for Work with Hydrogen fluoride and Hydrofluoric Acid

S3.6 - Control Measures, Enhanced Good Chemical Practice for Work with Phenol

S3.7 - Control Measures, Enhanced Good Chemical Practice for Peroxidisable Substances

S3.8 - Control Measures, Procedures for Examination and Test of Local Exhaust Ventilation

S3.9 - Control Measures, Procedures for Fume Cupboard Maintenance

S3.10 - Control Measures, Specification for Fume Cupboard Systems

S3.11 - Control Measures, Recirculating Filtration Fume Cupboards

S3.12 - Control Measures, Enhanced Good Chemical Practice for Work with Very Low Boiling Point Liquefied Gases

S3.13 - Control Measures, Recommendations for Using Fume Cupboards

S4 - Health Surveillance

- S5 - Identification and Storage, Arrangements for Keeping and Storage of Hazardous Substances
- S6 - Transport, The Carriage of Hazardous Substances by Road
- S7.1 - Waste Disposal, Special Waste
- S7.2 - Waste Disposal, Discharges of Liquid Waste to University Sewers
- S8 - Spillages, Uncontrolled Releases and other Emergencies Involving Hazardous Substances

## **Biological hazards**

Policy on *Biological Safety*: UHSP/9/BS/05.

Guidance on the Management of Biological Risks: GUIDANCE/12/MBS/07

## **Radioactive substances and sources of ionising radiations**

Policy on Radiation Safety – Ionising and Non-ionising: UHSP/13/RADS/04

## **12 EMERGENCIES**

**see Rule 16**

Expedition Leaders must compile details of relevant emergency services. Contingency plans for reasonably foreseeable emergencies must be made bearing in mind the likely hazards of the environment and the type of work undertaken. The following must be considered:-

- a. Provision of adequate emergency equipment, stretchers, first aid and medical kits, fire fighting equipment, bivouac tents etc.
- b. Means of summoning aid (radios etc).
- c. Evacuation of casualties.
- d. Liaison with police and rescue services.
- e. Provision of first aid and medical assistance.
- f. Decontamination of casualties and equipment (if necessary)
- g. Reporting of accidents.

All members of the expedition must be aware of the emergency arrangements and the means of contacting emergency services.

Expedition leaders must be aware of the duty (for incidents in the UK) under the *Reporting of Injuries, Diseases and Dangerous Occurrences Regulations* 1995 to notify the Health and Safety Executive immediately in the case of a death, a specified major injury or a specified dangerous occurrence at work and within 7 days in the case of any injury resulting in an incapacity to work for more than 3 complete days. Reports should be made, if practicable, through the Health and Safety Unit, from which full details of the legislation may be obtained.

## APPENDIX A

# NOTES ON SELECTED HAZARDS

## Biological Hazards

**AIDS** Medical and dental treatment should be avoided if practicable in areas where a substantial proportion of the population is infected with the virus (HIV) which causes AIDS and there is a possibility that infection may be transmitted by contaminated needles, inadequately sterilised instruments or transfusions with unscreened blood. Sexual contacts may also be hazardous, particularly with prostitutes.

**Bilharzia (schistosomiasis)** Disease caused by parasites infesting waters in Middle East and Africa. Related organisms cause similar conditions in latitudes elsewhere. The parasites can penetrate intact skin and adequate protective clothing should be worn in waters likely to be infested.

**Leptospirosis** Bacterial disease caused by exposure to infectious animals (commonly rats, dogs and cattle) or to water contaminated by their urine.

**Lyme disease** Tick borne bacterial disease which is becoming increasingly common in areas where there are deer. Meningitis and other unpleasant complications are common. Protective antibiotic courses are advised for people bitten by ixodid ticks.

**Malaria** Mosquito borne protozoal disease. May lead to recurrent bouts of fever and is sometimes fatal. Medication must be taken when areas with endemic disease are visited.

**Rabies** Virus disease of animals occasionally infecting humans. Commonly transmitted to humans by bite or saliva from infected dog but most mammals can carry and transmit disease. Invariably fatal once symptoms appear but prompt immune prophylaxis can prevent development.

**Venomous animals** Many species of animals can inflict bites and stings which may cause painful inflammation and may occasionally be fatal. Examples include fire corals, sea anemones, Portuguese man-o'-war, jelly fish, cone shells, blue ringed octopus, bristle worms, sea urchins, spiders, scorpions, bees, wasps, hornets, fish (ratfish, catfish, weavers, stargazers, lionfish, scorpion fish, toad fish etc.) and snakes (vipers, rattlesnakes, cobras, sea snakes etc.) People visiting areas where such animals are common should be familiar with the appearance of venomous animals and the action to be taken in the event of a bite or sting.

## Extremes of Climate

**Cold urticaria** Itching, rhinitis and skin oedema caused by exposure to cold in some individuals. Treated with antihistamines.

**Frostbite** Tissue necrosis caused by freezing of extremities (particularly the feet) and subsequent thawing. Severe cases may require amputation. The cornea may also freeze in high wind chill situations.

**Hypothermia (exposure)** Reduced body temperature leading to coma and death if not arrested. Accelerated by immersion in water or windy conditions. Adequate protective clothing must be worn and travel should not be attempted in high wind chill conditions.

**Snowblindness** Painful inflammation of the eyes leading to temporary blindness caused by excessive exposure to ultraviolet radiation reflected by snow. Protective goggles must be worn in these conditions.

**Heat exhaustion** Prostration resulting from a rise in body temperature to 39-41°C in hot conditions, often accompanied by dehydration. Symptoms include dizziness, nausea and headache. Rises in body temperature above 43°C may result in the more serious and life threatening condition of heat stroke where there may be cramps, pulmonary oedema and malfunction of other organs. These conditions may be precipitated by vigorous exercise, particularly in unacclimatised persons. The conditions are treated by controlled cooling with rehydration if necessary.

Trench foot (immersion foot) is produced by prolonged immersion in water. Exacerbated by poor diet and restrictive clothing. Symptoms include numbness, itching, leg cramps, swellings, blisters, ulceration and gangrene.

## Extreme environments

**Altitude sickness** A number of conditions can result from exposure to altitudes greater than 2,500 m (8,000 feet). Serious conditions include high altitude pulmonary oedema, encephalopathy, venous thrombosis or pulmonary embolism as well as other disabling but non-fatal problems such as acute and chronic mountain sickness and high altitude deterioration. Adequate acclimatisation is essential at high altitudes.

**Decompression sickness** May result from inadequate decompression drills by divers. Caused by gas bubbles separating from solution in the blood and tissues causing joint pains (bends), fatigue, chokes, neurological and cutaneous symptoms.

**Nitrogen narcosis** (Rapture of the deep). Euphoria resulting from breathing compressed air at depths of 30m (100 feet) of sea water or greater. Substitution of helium for nitrogen in breathing systems abolishes this effect.

## APPENDIX B

### TRAINING QUALIFICATIONS

The following list contains qualifications for leaders and other standards awarded by various specialist bodies. Persons organising activities should consider carefully whether these qualifications are necessary for leaders and other participants in the activity in question. Addresses are given in Appendix C.

**Basic Expedition Leadership:** The Basic Expedition Training Award of the Central Council for Physical Recreation

**Canoeing:** British Canoeing Union Senior Instructor/Coach Award.

**Caving:** British Caving Association Instructors Training Scheme.

**Diving:** Appropriate British Sub Aqua Club Diving Certificate.

**First Aid:** Approved course of instruction by a recognised organisation. (A mountain first aid course may be of greater use than a standard course).

**Life Saving:** Bronze Medallion of the Royal Life Saving Society (as a minimum).

**Mountain Walking:** Possession of the British Mountaineering Council's/Mountain Leader Training Board's Log Book.

**Sailing:** Instructors or Sailing Master's Certificate (Royal Yachting Association/National School Sailing Association) with tidal endorsements if necessary.

**Skiing:** National Ski Federation's of Great Britain's Ski Party Organiser's Certificate.

**Swimming:** Bronze, Silver or Gold Survival Award of the Amateur Swimming Association.

**Wireless Operating:** Radio Telephony (Restricted) Certificate.

**APPENDIX C****USEFUL ADDRESSES AND TELEPHONE NUMBERS**

University Health and Safety Unit	Director	45250
	Biological Hazards	45255
	Chemical Hazards	45252
	Radiation Hazards	45253
	Electrical, Engineering, Construction	44947
	Occupational Health	45117
	Fire Safety	45256
Insurance Office		46111
Amateur Swimming Association, Harold Fern House, Derby Square, Loughborough, Leics.LE11 5AL. 01509 618700		
Association for Outdoor Learning ( formerly, National Association for Outdoor Education ), 12 St Andrew's Churchyard, Penrith, Cumbria CA11 7YE, 01768 891065		
British Canoe Union, British Canoe Union, Adbolton Lane, West Bridgford, Nottingham. NG2 5AS. 0115 9821100		
British Horse Society, Stoneleigh Deer Park, Kenilworth, Warwickshire, CV8 2XZ. 08701 202 244		
British Sub-Aqua Club, Telford's Quay, Ellesmere Port, South Wirral, Cheshire CH65 4FL. 0151 350 6200		
Central Council for Physical Recreation, Francis House, Francis Street, London SW1P 1DE. 020 7828 3163.		
Mountain Leadership Training Board, Siabod Cottage, Capel Curig, Conwy, LL24 0ET. 01690 720 314		
Royal Geographical Society, 1 Kensington Gore, London SW7 2AR. 020 7591 3000		
Royal Life Saving Society, River House, High Street, Broom, Warwickshire. B50 4HN.		
Royal Yachting Association and Association of Sea Training Organisations, RYA House, Ensign Way, Hamble, Southampton, Hampshire, SO31 4YA. 02380604100 or 0845 345 0400		
St. John Ambulance, National Headquarters, 1 Grosvenor Crescent, London SW1X 7EF. 020-7235 5231		
Ski Club of Great Britain, The White House, 57-63 Church Road, Wimbledon, London SW19 5SB. 020 8410 2000		

## APPENDIX D

### Bibliography

The items listed below give useful guidance but it should not be assumed that all the advice therein is necessarily sound or that it is in accordance with University Health and Safety Policy.

#### General

1. *Guidance on Health and Safety in Fieldwork, including offsite visits and travel in the UK and overseas*, UCEA, 2011
2. Nichols, David *Safety in Biological Fieldwork*, The Institute of Biology, 1999. ISBN 0 900490 35 7
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4. Allen, JL, St John Holt, A *Health and Safety in Field Archaeology*, Standing Conference of Archaeological Unit Managers, 1997. ISBN 0 95114 072 8.
5. National Environment Research Council, *Guidance Note: Safety in Fieldwork*. 2<sup>nd</sup> edition 1997. NERC Publications.
6. Universities Safety Association, *Health and Safety Guidance When Working Overseas*, Universities and Colleges Employers Association, 1998. ISBN 0 9532431 0 9.
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