Fieldwork guidance

Ensure you have read the University Health and Safety Policy, Framework: Arrangements Section 29 Fieldwork.

High standards of safety in most fieldwork exercises result, in the main, from a judicious amalgam of meticulous planning, care, prudence and above all good common sense. However, all fieldwork exercises on land, or inland waterways in the UK and in designated areas offshore and over the Continental shelf, when being carried out by University employees, students and others, in connection with the work of the University (teaching, research or on contract), are covered by the provisions of the Health and Safety at Work, etc., Act and dependent Regulations, as well as this Section 29 Fieldwork of the University Health and Safety Policy, Framework: Arrangements, see link above. Fieldwork expeditions undertaken voluntarily (not in connection with the normal business of the University) and voluntary recreational and sporting activities are not so covered, but it would be wise for persons undertaking these activities to pay heed to the advice given in the various sections of this guidance note, where such is relevant.

In addition, certain locations in which fieldwork exercises may take place, such as nature reserves, reservoirs, quarries, mines, railways, factories and civil engineering and building sites, etc., will often have their own codes of practice and safety regulations. Specific permission will generally be required to enter such areas and those planning fieldwork must seek such permission, when relevant, and must ensure that other members of the fieldwork exercise know of, and conform to, the local safety rules. Sometimes it will also be necessary to comply with guidance and rules on safety imposed by sponsoring bodies.

This guidance note cannot cover all fieldwork activities in detail. Members of staff, and others, supervising fieldwork exercises should be familiar with any codes of practice or guidance material produced by organisations relevant to the discipline in question, and should adopt, so far as is reasonably practicable, the advice therein as it relates to the locality and type of work undertaken. The following publications are useful examples:

Guidance on Health and Safety in Fieldwork. USHA/UCEA available online at http://www.ucea.ac.uk/en/publications/index.cfm/guidance-on-health-and-safety-in-fieldwork.

BS 8848:2014 is the British Standard for organising and managing visits, fieldwork, expeditions, and adventurous activities outside the UK. You can obtain this British Standard via the University Library services for online journals, http://www.ed.ac.uk/information-services/library-museum-gallery/finding-resources/subject-guides/databases-standards.

Group Leaders/Supervisors

The group of fieldworkers should be subject to taking instructions from a Group Leader who accompanies the group. The Group Leader will often be a member of the academic staff but may be the person with the most practical experience of the actual conditions under which the group will be working. If the Group Leader is not the most senior person, in the normal hierarchy of management, then this must be clearly defined and known to all, at the outset of the fieldwork exercise.

Quality of leadership is extremely important. Without experienced and knowledgeable leadership and sound judgment on such matters as equipment, clothing and emergency procedures, an unpleasant experience can easily turn into a tragedy. Clearly, a high level of care is required from Supervisors and Group Leaders for the health and safety of undergraduates, but it should be noted that Supervisors also bear a degree of responsibility towards postgraduate students in their charge. Fieldwork Supervisors and Group Leaders should refuse to allow ill-equipped students to embark on a field course, since they have a responsibility to ensure that students observe provisions regarding personal health and safety.

A template risk assessment form has been produced by the Health and Safety Department and should be completed for each fieldwork trip. If the same or similar trip is undertaken regularly, the same risk assessment can be utilised as long as it has been reviewed, amendments made and signed. The risk assessment form can be found at http://www.ed.ac.uk/health-safety/risk-assessments-checklists/risk-assessments with accompanying guidance for completion.

Fieldworkers

All fieldworkers, in prior consultation with their Group Leaders, must identify the likely health and safety problems and assess the risks that can arise during the field exercise. The aim of the field trip must be clearly understood by all concerned and the work must be carefully planned, bearing in mind the experience of the workers and the nature of the terrain, etc. Care must be taken not to overestimate what can be achieved, in the prevailing or potential weather conditions.

All fieldworkers must obey safety instructions from the Group Leaders or Supervisors and must adhere to suitable standards of behaviour in order to reduce the risk of accidents.

A person working alone in the field will be the responsibility of his or her immediate Supervisor at the former's normal place of work. Each individual lone worker must, however, bear in mind that the onus for carrying out safety procedures in the field rests primarily with him or herself.

Notification of routes and schedules

Never go into the field without informing a designated person in the school of the date and the time of departure, and the expected time of return. Before departing on any fieldwork of a hazardous or dangerous nature, the Group Leader (or individual person) must also prepare a record of each trip and leave this with a designated person in the school, or with a local person, or on the fieldwork vehicle or at home, as appropriate.

This record should include the following information:

- date and time of departure;
- method of travel to the site;
- a map reference for the site; or better, a 1:50000 map showing a pencil ring around the site;
- method of travel around the site;
- any hazardous techniques to be used;
- expected time of leaving the site;

Due consideration should also be given to informing the local police or coastguard service.

Never break arrangements you have made to meet and report to local people. A "Signing Off" procedure should be agreed with the designated person for long field trips and any trip to a hazardous or dangerous location. It is the responsibility of the designated person to initiate search and rescue procedures when certain pre-arranged criteria have not been met.

Vehicles

Heads of Schools must nominate a member of staff to be responsible for the operation of vehicles, whether owned by the University or hired, for fieldwork. This member of staff must ensure that local rules are published for the operation of such vehicles, that each University owned vehicle is regularly serviced according to the manufacturer's recommendations, and that a log book for the vehicle is properly completed by all users.

Clothing

Fieldworkers must ensure that they are suitably clad for the local terrain and for all weather conditions likely to be encountered. Clothing requirements should be assessed at the planning stage. Group Leaders should refuse to allow any person in the group who has inappropriate or inadequate personal clothing to embark on a field exercise.

When assessing the requirements for clothing, appropriate items should be chosen from the following list:

- minimal clothing to prevent sunburn and footwear with a good tread and ankle support;
- warm waterproof clothing, anorak or cagoule and overtrousers;

- waterproof boots with a good tread;
- extra, or thick, socks and spare pairs;
- strong gloves;
- hat, cap or balaclava;
- change of clothes;
- high visibility clothing;
- wellington boots or waders;
- wet suit.

Equipment

As with clothing, the requirements for personal equipment and equipment which is to be shared by the group must be assessed at the planning stage.

In general, items of equipment should be selected from the following lists:

Personal equipment

- rucksack;
- appropriate (high sustenance) food and drinks (warm); water;
- Ordnance Survey map(s) of suitable scale;
- compass;
- accurate waterproof watch;
- whistle;
- torch, with spare batteries;
- survival bag;
- tide tables (corrected to BST and local conditions);
- life jacket;
- personal first aid kit;
- sun glasses/snow goggles;
- specialist equipment for specific fieldwork tasks.

Group equipment

- KISU (A group survival bag for 10 +);
- first aid kit, transport;
- first aid kit, major accident;
- survival knife;
- mobile telephone (with spare batteries);
- warning flags, red triangle, flashing beacon;
- flares;
- rope for rescue;
- safety glasses/goggles to the appropriate British Standard;
- hard hat (check date, reject if over four years old);
- ear defenders;
- binoculars;
- fire extinguisher;
- tin of lifeboat matches;
- firearms and ammunition;
- specialist equipment for specific field exercise tasks.

Situations in which extra care is required

During exploration of cliffs, rocky places, steep slopes and rough terrain, working alone should be forbidden except in safe conditions. Glaciers, rockfaces, mines, caves, open water, etc. should only be attempted under the guidance of an experienced Group Leader. In any location regarded by the Group Leader as dangerous, persons should work in pairs and where there may be risk of extreme danger, groups of at least three persons are advisable. If there is an accident to one member of a group of three, one should stay with the casualty whilst the third goes for help. Someone, known to all members of the whole group, should carry the first aid equipment. If the weather deteriorates, do not hesitate to turn back.

Upland mountain terrain should be treated with respect. What is an innocuous slope in warm sunshine can, in the space of an hour, be converted by a sudden change in the weather to a deathtrap for the unprepared. Before setting out, ensure that everyone is fit enough to undertake the exercise, is properly equipped, has a reserve of warm clothing and some emergency rations. Ensure that the route is realistic for all the group, and not so demanding as to make it exceedingly difficult for some. The minimum personal equipment generally comprises the first nine items from the list above.

Each member of the group must know how to walk on a compass bearing.

For fieldwork in upland mountain terrain, all Supervisors and Group Leaders (and if possible, all fieldworkers) should be conversant with the British Mountaineering Council book, "Safety on Mountains", revised edition (https://www.thebmc.co.uk/safety-on-mountains-booklet). Rock climbing without the permission of the Group Leader and without proper equipment and experience must never be undertaken.

When hammering rock, eye protection to the appropriate British Standard is a legal requirement. Never strike one hammer with another - the hardened faces will fragment.

Estuaries, marshland and tidal saltings should only be traversed after taking local advice; the tide comes in over many salt marshes as fast as any human can run. Allow ample time to return before the floodtide starts to advance across the work site. The Group Leader should ascertain from maps, charts or local experts if there are special dangers such as quicksands. It is ill advised to go into such terrain in bad visibility.

If feet sink into soft mud or quicksand, do not make violent movements in an attempt to get free. If boots or waders become stuck, slip one foot out gradually, rest the leg on the surface and gradually free the other leg. By lying on the surface and spreading the weight, sinking can be avoided. Move to firm ground using a "leopard crawl" (spreadeagled, face down, keeping the maximum area of the body in contact with the ground at all times).

When living in tents, caravans and similar relatively primitive conditions, good discipline is more important than under normal conditions. In particular, the risk of fire must be guarded against, particularly in forest and heath areas and where agricultural crops are ripening. All means of heating, ventilation and lighting must be maintained in good working order; adequate ventilation of gas appliances is particularly important. Fire buckets and extinguishers must be kept properly filled and easily accessible. Sanitary arrangements must conform to the highest possible standards of hygiene. Human waste should be left well covered, far away from, and downstream from, sources of drinking water.

When caravans are out in the field for more than fifteen days, they must be fixed to the ground by the use of chain, attached to the chassis, and steel stakes at all four corners.

In surveying operations of highways, use flags and post lookouts. Signs complying with Department of Transport requirements must be set up to warn any approaching traffic. Be very careful if strong winds are blowing, because they can mask the sound of approaching traffic.

Especially hazardous locations and techniques

Whenever Fieldwork Supervisors and Group Leaders are planning fieldwork exercises in any of the following hazardous locations, or members of the group are to undertake any of the following hazardous techniques, specialist advice must always be taken from a relevant source of expertise in safety.

Hazardous locations

- borehole sites;
- excavations (quarries), trenches, tunnels and mines;
- fieldwork abroad;
- forests;
- on board ships and research vessels;
- railways, motorways, major roads and airports.

Hazardous techniques

- boats and inflatables;
- chainsaws (special training and protective clothing required);
- drilling equipment;
- electric fishing;
- firearms, crossbows and explosives (appropriate licenses required);
- ladders;
- scaffolds, both construction and use;
- scientific diving (subject to strict legal control);
- traps and snares;
- tree climbing;
- wild animal handling.

Recognised distress signals

Prior to any fieldwork exercises, Group Leaders should ensure that all members of the group know the distress signals appropriate to the area of work.

The international distress signal in mountains is:

- six long flashes of a torch/blasts of a whistle/shouts/waves in succession, repeated at one minute intervals;
- answered by three long flashes/blasts/shouts/waves repeated at one minute intervals.

The international distress signal at sea is:

- whistles and torches - Morse Code SOS - that is, three short blasts/ flashes - three long - three short - pause - repeat;
- red flares or orange smoke;
- outstretched arms, raised and lowered slowly and repeatedly.

Fieldwork first aid

Heads of Schools should ensure that adequate First Aid instruction has been given to those who undertake a programme of work in the field. One member of the group (preferably the Group Leader) must be a fully trained First Aider. Group Leaders and Supervisors are therefore advised to attend one of the University First Aid training courses and thereby obtain a recognised qualification certificate. A valid Red Cross or St Andrews certificate is equally acceptable.

Details of First Aid training courses can be obtained from the Training and Audit Unit, http://www.ed.ac.uk/health-safety/training/first-aid.

Group Leaders must ensure that easily recognisable First Aid kits, suitable for the task to be undertaken, are carried on all field excursions by persons known to all members of the group. Contents of First Aid kits should conform to requirements of the Health and Safety (First Aid) Regulations, 1981.

Hypothermia

Hypothermia results from a dangerous loss of body heat; it can occur at any time on the hills and seas in Britain and anywhere during the winter months. A drop in body temperature of 2oC from the normal 37oC indicates the onset of hypothermia, whilst a drop of 4^{o}C is life threatening. The main causes are wind chill, through inadequate clothing, and accidental immersion in cold water.

The early stages of hypothermia are insidious, because the person usually does not recognise them.

The symptoms are:

- onset of shivering and tiredness;
- lethargy and weakness which may alternate with sudden outbursts of energy and euphoria;
- irrational behaviour and aggressive response to advice;
- abnormality of vision, slurring of speech, stumbling, with the casualty remaining longer and longer on the ground;
- unconsciousness.

The action to be taken when encountering these symptoms is as follows:

- stop as soon as possible and find the best available shelter out of the wind;
- insulate the casualty against further heat loss with additional clothing (even over wet garments) or a large plastic bag (a survival bag) which should be pulled up over the casualty and tied at the neck;
- provide additional insulation around the head, whilst allowing a clear airway;
- provide warm easily digestible food or drink containing sugar or glucose, but no alcohol;
- whilst awaiting rescue, add heat from another person; either lie beside the casualty or use a KISU (see p.12);
- get help quickly, bearing in mind that one hypothermic in a group can mean that more are likely.

Fieldwork health hazards

Fieldwork Supervisors should ascertain the nature and extent of possible health hazards in the proposed locality. In particular, persons working in terrestrial and fresh water habitats should maintain active immunity against tetanus. Water taken downstream from campsites or mountain huts, etc., should never be drunk until it has been purified by boiling, filtering (60 micron pore size) or by the addition of a chemical detoxicant.

Fieldwork Supervisors should be aware of the risks of contracting diseases which have been documented as being associated with the types of habitat in which the fieldwork is to be carried out. Examples include leptospirosis (Weil's Disease), associated with work in sewers, ditches, ponds and slow flowing rivers, and Lyme Disease, a sheep tick-borne infection, which can be acquired during work in thick vegetation.

Particular care should be taken to avoid dangers arising from poisonous animals and plants and poisonous chemicals, such as poison baits and pesticide sprays, etc., used on agricultural land.

Members of a group should indicate to their Group Leader any physical handicap such as chronic asthma, epilepsy, certain heart conditions or diabetes, or a recent history of serious illness etc., so that appropriate precautions may be taken and medical supplies carried.

Before undertaking fieldwork abroad, each member of the group should have a medical examination and, in consultation with their medical adviser, decide on

which vaccinations would be appropriate to ensure adequate health protection. This is obviously important when fieldwork is planned in the tropics or sub-tropics. Advice should also be taken on the provisioning of medical supplies, both for health protection (e.g. water sterilisation) and emergencies or accidents.

Fieldwork Supervisors are advised to arrange for appropriate insurance cover against injury, sickness and death when planning fieldwork abroad. Guidance on travel and personal accident etc. Insurance relevant to field work activities should be obtained from the Insurance section of the Insurance Office (insurance@ed.ac.uk).

Reporting of injuries and ill health

A report of the circumstances surrounding any accident which leads to a member of a fieldwork exercise being injured must be prepared by the Group Leader and submitted to the Fieldwork Supervisor and the Head of School. A similar report of any occurrence of ill health should also be made. A subsequent report of either event must be made to the Director of Health and Safety, using the online form at https://www.accidents.is.ed.ac.uk/, as soon as possible, because either matter could legally be reportable to the Health and Safety Executive. If police, coastguards, ambulance, wardens, etc. are involved in assisting at the scene of an accident, it is advisable to make only statements of fact. Opinions should never be expressed, except when these might be of assistance in a rescue operation.

Postscript on Sport

One of the features which identifies an activity as a sport is the presence of an element of risk and, with that risk, the attendant possibility of physical injury. Some sports obviously carry great risks, e.g. mountain and water sports, combat sports and rugby football, but there is an incidence of accidents and injury in virtually every type of sport. The key to the prevention of sports injuries seems to be self-discipline based upon willing training, observation, vigilance and craftsmanship. In a great number of sports, individuals have a responsibility to ensure that their own personal sports gear is of a standard required for their sport, since poor equipment is an obvious cause of accident and injury. Individuals should also check communal or hired sports equipment to ensure that it is in a safe condition to use. Thereafter, the question of accident prevention is largely a matter of common sense.

Certain University Sports Union Clubs, however, control activities where it is essential that adequate written safety rules are enforced, in order that participants, mindful of the safety requirements, can enjoy the sport fully without negation of a proper sense of adventure.

The Director of Physical Education will specify which Sports Union Clubs require their own written safety rules. It is a requirement of the University Health and Safety Policy that Sports Club safety rules must be submitted to the Director of Physical Education for approval.