10 RISK ASSESSMENT AND CRISIS MANAGEMENT

Clive Barrow

> Climb if you will, but remember that courage and strength are nought without prudence, and that a momentary negligence may destroy the happiness of a lifetime. Do nothing in haste; look well to each step; and from the beginning think what may be the end.
>
> FROM *SCRAMBLES AMONGST THE ALPS* BY EDWARD WHYMPER (1860)

Risk assessment has become a prerequisite for organisers of expeditions and outdoor activities in the UK and overseas, and is now a legal requirement for commercially organised outdoor activities for under-18s in the UK. There is currently no law in this country governing the organisation of expeditions overseas. Many see this as a good thing. Fortunately, the number of serious incidents among participants in overseas expeditions is very small, at 0.3 per 1000 person-days (Anderson and Johnson, 2000).

However, the climate of opinion in the UK is changing in several ways:

- The public is more circumspect about safety and risk as a result of increased media coverage of expedition or outdoor activity accidents.
- As a nation, the UK is adopting a more litigious culture in line with the USA.
- Expectations of safety among the parents and guardians of young people are becoming higher as a result of the introduction of stringent safety procedures and Health and Safety regulations in educational establishments.

Given this risk-adverse climate, planners and leaders of all overseas expeditions should be conducting a systematic, careful and responsible safety management assessment. Risk assessment is the first and perhaps most important part of this. This chapter is intended to provide a brief practical guide to risk assessment, coupled with the key considerations involved in crisis management planning.

RISK ASSESSMENT (TABLE 10.1)

TABLE 10.1 RISK ASSESSMENT: SOME DEFINITIONS	
Hazard	A situation or set of circumstances that have the potential to cause harm
Risk	The likelihood of harm potentially caused by a hazard
Risk assessment	The conscious process applied to the identification of hazards and the risks associated with them and the subsequent identification and implementation of a series of control measures to minimise the risk highlighted

Hazard and risk on overseas expeditions

Hazard and risk are inherent in everything we do and the degree of hazard and risk is dependent on the activity and environment in which that activity takes place. In the UK the degree of risk is considerably less than overseas, particularly in less developed countries where the ability to control our environment, coupled with a lack of knowledge of that environment, is proportionately greater. Risk assessment of overseas projects must therefore consider a wider array of hazards, and must always allow for the unexpected (Table 10.2).

The expedition organiser must always be prepared to adopt alternatives and/or completely abandon an activity if the risk assessment suggests that control measures cannot reduce the risk to an acceptable level.

In attempting to qualify and quantify risk, it is important not to worry unnecessarily about trivia. A risk assessment that is too cluttered with minor concerns will be discarded in the field as a bureaucrat's folly, and will be of less value than not doing one at all. Any severe and persistent risk must appear in the risk assessment document, together with appropriate control measures.

Acceptable risk

On an overseas expedition, risk can never be completely eliminated. Indeed, it is through the management of both perceived and real risks that expeditions of all types can have such beneficial effects on the participants. Most expedition organisers speak of reducing risk to an *acceptable* level. This is extremely difficult to define because opinions about acceptability may differ greatly among individuals.

The experience, age, ability and technical competence of the participants on an expedition or overseas project must be considered, because this will affect the level of risk considered acceptable. When considering the concept of acceptable risk, think first of to whom the risk should be acceptable? To whom are you accountable?

EXPEDITION HANDBOOK

TABLE 10.2 HAZARD AND RISK ON OVERSEAS EXPEDITIONS

Hazard	*Risk*
1. The team	
Health and fitness (including previous medical conditions)	Increased risk of health problems on existing expedition leading to serious illness/death
Attitude and behaviour	Increased risk of ignoring control measures resulting in illness/injury
Experience and training	Lack increases risk in all activities
Personal equipment	Serious injury/illness resulting from inadequate equipment/equipment failure
2. The environment	
Mountains/sea/desert/jungle	Altitude sickness/drowning/heat problems
Climate and weather conditions	Heat- and cold-related injury/death
Wildlife (including insects)	Attack/poisoning through bites/stings/disease
3. Health	
Endemic disease (dengue fever/ Japanese encephalitis)	Serious illness or death
Malaria	Serious illness or death
AIDS/HIV	Serious illness or death
Polluted water	Serious illness
Contaminated food	Serious illness or death
4. Local population	
Political climate	Political instability/coup/kidnapping/ imprisonment (e.g. UK plane spotters in Greece!)
Attitudes to foreigners/cultural differences	Attack/rape/theft/access to drugs
Hygiene/living conditions	Disease
5. Expedition activity	
Trekking/climbing/mountaineering	Altitude sickness/falls from height
River crossing	Serious injury/drowning
Water-based activities (diving/kayaking/sailing)	Drowning/leptospirosis
Underground activities (caving/cave-diving)	Drowning/suffocation/starvation
Equipment failure/inappropriate use	Serious injury/death
Games/sports activities	Injury/incapacitation
6. Travel and camp life	
Transport (public/private)	High risk of serious injury/death
Road/water conditions	Increased risk of accidents
Other road users	Increased risk of accidents
Camp hazards (stoves/fires/flooding/ avalanche/wildlife)	Burns/drowning/suffocation/injury/death
Accommodation/hotels	Fire/electrocution/serious injury/disease/ mugging/attack

Examples might include your peers, participants, parents, school governors, local education authorities, teachers, sponsors, research bodies, etc.

To quantify acceptable risk in the context of your own project or expedition, it is important to ask key individuals and groups what they feel is acceptable to them. Don't ever assume! The greater the challenge and promise of achievement (e.g. first conquest of a new mountain peak), the greater the acceptable risk.

Control measures

Control measures are the backbone of the risk assessment process. They are what the expedition leader initiates to reduce or eliminate a particular risk. Some examples would be as follows:

- providing first-aid training before the expedition starts
- getting immunised before exposure to disease
- preventing bites by disease-transmitting insects.

In most cases, many control measures can be implemented before the expedition as part of the planning process. However, once the expedition or project actually starts there may be many more control measures to consider.

Risk assessment format

There are many variants on the format for a risk assessment. There is no right or wrong way to draw one up provided that the principles are observed. The important thing to ensure is that any staff or team member should be able immediately to see from the risk assessment document the risks identified, the control measures that have been put in place and any further actions required.

The UK Health and Safety Executive refers to the five steps of risk assessment. These are as follows:

1. Identify the hazards and associated risks.
2. Identify who is potentially at risk and how.
3. Identify the precautions or control measures to minimise the risk, including any further action required to reduce the risk to an acceptable level.
4. Record your findings.
5. Review the risk assessment periodically.

This process is clear and straightforward and can be applied to any expedition overseas.

A convenient format for risk assessment is shown in Table 10.3:

EXPEDITION HANDBOOK

TABLE 10.3 SAMPLE RISK ASSESSMENT				
Hazard	*Risk level*	*Control measure*	*Additional action*	*Review mechanism*
Data collection activities Trekking/ river crossing	High	Careful route selection Use of guides Competent, experienced group leaders Use of ropes/ training in river crossing techniques No activity after dark Safety and medical kit carried at all times Group risk assessment before each day's activity	Leader/staff approve activity or, if necessary, halt progress if new risk rendering it unsafe to proceed	Post-expedition report with information about incidents arising, and changes to risk assessment

Involving others in the risk assessment process

Never assume that members of an expedition team will observe or abide by the contents of a risk assessment in which they have had no involvement. The key to effective risk assessment stems from clarity and commitment on the part of all of those who may potentially be at risk. It is strongly recommended, therefore, that team members play a part in compiling the assessment at some stage of the planning process. This risk assessment is an essential part of turning a piece of paper into a living process for managing day-to-day risk on an expedition.

Reviewing a risk assessment

As a result of changing circumstances and environmental conditions, the risk assessment must be reviewed regularly to remain effective. Changes to the assessment on paper are useless if they are not properly communicated to staff and participants, or if staff and participants cannot see a reason for the changes.

Golden rules of risk assessment

Some simple rules for compiling risk assessments that work are captured in the following acronym:

C Clarify the hazards and risks
R Reassess and revise it where necessary
I Involve all participants in the process
S State it simply in writing
I If it's too risky – don't do it!
S Share knowledge and experience

CRISIS MANAGEMENT

The key to crisis management is to put in place planning systems and measures that help to recognise a crisis in the making, to prevent one from happening in the first place, and to handle a crisis effectively if one does occur.

Planning

Crisis management planning should always concentrate on the "worst case scenario". Day-to-day administration procedures may be adequate when all is going according to plan, but these are largely irrelevant when catering for the possibility of a serious expedition incident. Be a pessimistic planner! The expedition planner must always be flexible in a changing world. On the plus side, better communications are constantly evolving and new medical facilities are becoming available worldwide. On the minus side, beware of the political turbulence that seems to be characteristic of recent history, which makes the world a less predictable place.

Legal considerations

As with planning always consider the worst eventuality, e.g. a fatality for which you may or may not be found negligent. If your procedures and systems concentrate on the premise that omission and incompetence are equally dangerous, you are less likely to fall foul of the legal system. Always ask yourself the question, "How would I justify this decision/action in court?"

Expedition organisers, particularly regular providers, should always have some form of written agreement with the participant. This may be an application form associated with a set of booking conditions, or a simple letter of understanding. Either way, if a crisis results in legal proceedings, documents of this sort will play a significant part in establishing responsibility.

Consider also the "duty of care" placed on the organiser of an expedition. With under-18s this also extends to the requirement to act in a supervisory role as a prudent parent would under the same circumstances (*in loco parentis*).

Insurance

The contract or agreement with a participant must make it clear if insurance is included or excluded from the expedition costs. To establish a lack of insurance

during a crisis is a disaster in itself, because it is insurance that is generally expected to meet most of the costs of handling a serious incident. During the planning process, the organiser must carefully establish the risks, before attempting to insure against those that the expedition may be faced with. In the less developed world, there are other eventualities that can be insured against which would not appear in the text of a conventional travel policy. These include contingency/war risk, kidnapping, and search and rescue.

Selection of staff and participants

Given that we are trying to avoid a crisis, we must pay attention to the selection of our staff and participants, some of whom may be "an accident going somewhere to happen". Each organiser will have their own systems for recruiting and, in the context of crisis management, the selection of personnel will be hugely significant. Inexperienced staff will not be able to pre-empt a crisis as effectively as those who have sound skills and particularly judgement. Irresponsible team members are more likely to cause a crisis through thoughtless action. There are many ways in which to assess the suitability of candidates for an overseas expedition, including carefully prepared application forms, references, interviews, assessment and selection courses. For the commercial provider, there is always a conflict between the necessity to generate turnover and the potential liability of accepting unsuitable participants. This is a balance that must be addressed if a crisis is to be avoided.

Training and preparation

Having selected a suitable staff and participant team, there is a requirement for induction, briefing and training. The better physically, emotionally and administratively prepared an expedition team is, the less likely it is that an incident of a serious nature will occur. One should never ignore the fact that it is practically impossible to prepare people for every fast ball that the less developed world may hurl, but there is much that can and should be done in preparation. Methods of preparation may include verbal and written briefings, residential courses, and practical outdoor training events or workshop sessions. It is suggested that a combination of these methods of preparation is most effective to strike the optimum balance between skills and theory.

Emergency procedures

Emergency procedures form a focal point in the effective handling of an expedition crisis. The detail and extent of these procedures will obviously vary according to the type of expedition, and the number of projects and areas that they are designed to apply to. In essence, they should allow the staff and/or team members of an expedition to initiate a process that will permit the following:

- immediate care of a casualty/casualties and other involved parties
- evacuation to relevant medical care
- revision of expedition logistics/objectives
- communication with interested parties at home and overseas
- monitoring of casualty/casualties in care
- liaison with families/close relatives
- liaison with insurers/assistance agencies
- facility to supply information to authorities/media/public
- follow-up and review.

Emergency procedures must be written down and communicated in the same way as a risk assessment.

Contacts

An address book of contacts is invaluable in crisis management planning because it establishes an infrastructure of support to the expedition overseas. Planners must consider this requirement from all angles. In the host country, government agencies and British representatives (embassies/consulates) must be alerted to the organiser's plans and advice sought accordingly. British missions abroad are generally contactable 24 hours a day. Other contacts should be sourced to provide advice and assistance with crisis handling. A national agent of contact is recommended who can act as a focal point for communication to and from the UK, particularly when direct communications are limited from the area of a host country in which a team may be operating, and likewise for local contacts (hotels/guides/rescue organisations), communications, medical back-up and important local knowledge.

The contacts portfolio should always be evolving as planning progresses, and the expedition staff/leaders equipped with a full and up-to-date list of helpful contacts with the type of support available before departure from the UK.

The medical umbrella

Although not always the case, an expedition crisis generally involves an accident, illness or injury to an expedition member or members. For this reason, careful attention must be paid to the establishment of a "medical umbrella". This applies not only to immediate medical support to expedition members, but to the entire planning process.

Attention must be paid to the skills of the expedition members and accompanying staff. There must be sufficient first-aid skills among the team to deal with the immediate care of a casualty. In the absence of an expedition doctor, several courses are now available that concentrate on more advanced medicine for remote foreign travel for competent first aiders. Careful selection of the expedition medical kit is also important. This should be put together with the expert advice of a qualified doctor

(preferably with expedition experience) and all expedition members instructed in the appropriate use of its contents.

The investigation and enlistment of locally and nationally available medical support form another essential part of the medical umbrella. British missions in the host country often have lists of recommended doctors and dentists in the capital city, but rarely have information about the further-flung outposts likely to be frequented by expedition teams. For this reason, detailed research is necessary to produce a support network of medical contacts in the areas in which an expedition will be operating. Support may come from local aid projects with medical back-up, clinics and dispensaries, local hospitals, or, on a national basis, the GPs and hospitals commonly used by the expatriate population of the country. The list of medical contacts should preferably also include specialists if possible, plus a recommended dentist (often overlooked).

Communications

Without communications, an expedition team is reliant solely on its own ability to handle a crisis. Thus, the poorer the communications, the more competent, experienced and medically trained the team needs to be. The communications infrastructure in the crisis management plan should aim to incorporate as many options as possible. The reliability of communications in the less developed world can be appalling, and thus the more options that are researched and made
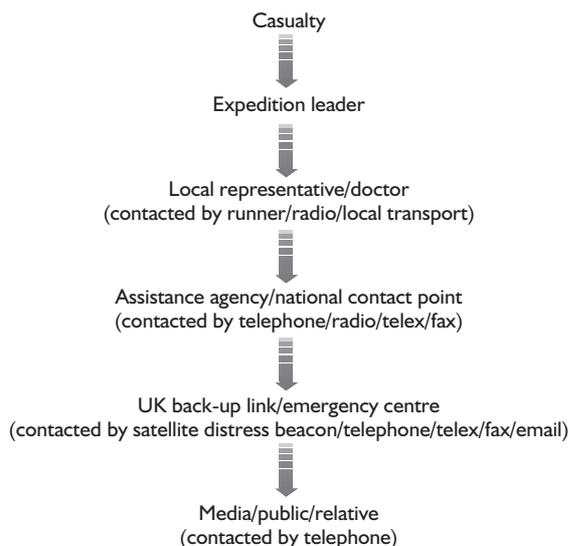
Casualty

↓

Expedition leader

↓

Local representative/doctor
(contacted by runner/radio/local transport)

↓

Assistance agency/national contact point
(contacted by telephone/radio/telex/fax)

↓

UK back-up link/emergency centre
(contacted by satellite distress beacon/telephone/telex/fax/email)

↓

Media/public/relative
(contacted by telephone)

Figure 10.1 *Emergency communication network*

available, the greater the chance of establishing and maintaining links with the outside world.

Essentially, the expedition team relies either on its own communications brought in from overseas (radios, distress beacons, satellite telephones) or on local systems (telephone, runner, telex, local radio communications). In practice, the communications network will comprise some of both, although this will also depend on the nature of the expedition and the size/budget of the organiser. Whatever network is in place, it should allow the team to communicate with the outside world in an emergency. And, after initial evacuation has taken place, the network should allow for two-way communications between the expedition guide/leader and the UK. Figure 10.1 outlines an emergency communication network.

UK back-up
Whatever the size of the expedition, it should have a 24-hour contact in the UK capable of responding and assisting in a crisis. For the smaller or one-off expedition overseas, this may be a family member or colleague who is fully conversant with the expedition medical and contact details for all next-of-kin/closest relatives of all expedition members (including staff). For larger organisations, this back-up may take the form of a duty officer and/or and assistance agency or emergency centre. The function of the UK back-up is to liaise with all the relevant parties in the UK. This may include relatives, sponsoring organisations, insurers, assistance agencies and the press. In addition, this vital link may be in a position to make contact with local support from the UK which, for whatever reason, the expedition in the host country may be unable to contact. The potential scope and extent of this role in a crisis require that the UK back-up be highly capable and responsible, and fully briefed by the expedition organiser.

Sharing experiences
Now that the world has so few frontiers, the likelihood is that, for every expedition to a remote part of the developing world, another has gone before. As a body, organisers of expeditions have a duty to share their experiences with others who follow them in an attempt to avoid recurrent tragedy on expeditions. This can be done in a number of ways from informal conversation between past and present expedition organisers, to formal accident/near-miss reporting such as that set up by the Royal Geographical Society–Institute of British Geographers (RGS–IBG) Expedition Advisory Centre (EAC). For this to happen, the responsibility must lie both with the organiser who has experienced a crisis on an expedition (who should lodge a report with a relevant body such as the EAC/Young Explorers' Trust/British Mountaineering Council/Alpine Club or similar), and with the planner whose research and initial risk assessment should lead them to such bodies to learn from the experience of others.

FURTHER READING

Anderson, S. and Johnson, C. (2000) Expedition health and safety: a risk assessment. *Journal of the Royal Society of Medicine* **93**: 557–561.

This paper summarises the findings of the RGS–IBG Expedition H&S survey for the years 1995–1997. This paper and more recent data for the years 1995–2000 and beyond can be downloaded from www.rgs.org/medicalcell

Bailie, M. (1997) *Risk Assessments, Safety Statements and all that Guff.* Adventure Activities Licensing Authority (www.aala.org).

Health and Safety Executive (1998) *Five Steps to Risk Assessment.* HSE Books. Tel: + 44 1787 881165, website: www.hsebooks.co.uk

Can be downloaded from www.hse.gov.uk/pubns/indg163.pdf

HSE Adventure Activities Industry Advisory Committee (1999) *Adventure Activities Centres: Five steps to risk assessment.* HSE Books. Tel: + 44 1787 881165, website: www.hsebooks.co.uk

Putnam, R. (2002) *Safe and Responsible Expeditions.* London: Young Explorers' Trust.

Stables, R. (2002) Casualty evacuation. In: Warrell, D. and Anderson, S. (eds), *Expedition Medicine.* London: Profile Books with RGS–IBG, pp. 181–6.