The Crux Of Risk Management In Outdoor Programs – Minimising The Possibility Of Death And Disabling Injury

Rob Hogan

Introduction

Risk management has become a much-discussed topic in the outdoor education literature in recent years, and a number of approaches to it have been proposed. When I started my career in outdoor education the term risk management had not yet entered the vocabulary. We did, though, talk about safety planning and its prime aim was the protection of program participants from harm. The term 'risk management' is now very much part of the jargon in all organisations and the sort of risks that one is expected to consider within an overall risk management plan seem to have considerably increased.

The focus has shifted too. The emphasis in the current standard (Standards Australia and Standards New Zealand, 1999) is very much the protection of organisations themselves from 'something happening that will have an impact upon objectives'. A recent advertisement for a web-based risk management tool for schools CLASSRooM™ 2001 (DETE, 2001) illustrates this point;

> *The potential consequences of an inadequate school risk management program are significant – financial loss, decline in enrolments, loss of reputation, litigation, personal liability, damage to careers, injury and even death.'*

The possibility of serious physical harm seems very much tacked on the end in this description. I'd argue that in a hierarchy of adverse consequences, death or serious injury to persons involved is right at the top of things we want to avoid. Minimising the risk of death and disabling injury should be the number one outcome of any risk management plan or strategy in outdoor programs.

There is no doubt, though, that all the other harmful consequences listed above can follow for any organisation in the aftermath of serious injury or death in a program, particularly where it is subsequently shown the incident may have been avoidable. Look at the well-publicised suffering of the victims' families, the demise of the responsible adventure company, and the personal costs to company directors and employees in the Swiss canyoning disaster.

Historical Approaches

Historical approaches to risk management in organised outdoor activities have centered on the adoption of guidelines or 'standing orders' on aspects such as;

- minimum experience or qualifications of leaders,
- minimum &/or maximum number of persons in a group,
- maximum number of participants per leader,
- prior experience required of participants,
- minimum equipment standards, and
- intra-organisational approval processes.

These are an important part of approaches to risk management that form the basis of plans many organisations still use today.

There have, though, been questions asked about the effectiveness of generic activity guidelines. Take for instance the drowning of the two adult leaders and two teenage scouts when a Venturer Scout Group was struck by gale force winds when kayaking across Lake

Alexandrina in South Australia. The scout group and the state association responded to criticism of the activity by stating that the organisation had adequate standards, that the kayaks had all passed their annual safety inspection, all persons were wearing life jackets and that the leader held the required scout qualifications. Moreover the spokesman argued, the group had not planned to kayak in the lake, as this was an area prohibited to scout groups, and they must have been blown off course or become lost. The Coroner found however that buoyancy had been removed from the kayaks, that the leader had ignored weather forecasts, and also the prohibition in paddling across the lake in the interests of taking a short cut. In this case some rules had clearly been breached, but also the coroner found the association standing orders did not address all potential hazards, particularly necessary prior experience of participants. Over half the group had not kayaked before.

While in that case there were real questions of compliance, it does not necessarily follow that adherence to guidelines will always prevent incidents. In the case of an approved school bushwalk in Victoria's Cathedral Ranges the group was well within the recommended ratio of students to teachers. During the walk two students fell from a rock outcrop and one was killed. The other suffered minor injuries but later sued the leaders of the walk claiming psychological harm from the incident, particularly from witnessing the death of her classmate. The judge found the school negligent, in part on the grounds that it did not have sufficient numbers of teachers on the walk to ensure safe supervision. One can follow guidelines and still be wrong!

The proviso that such guidelines present *minimum* standards and leaders should exercise their judgement and adjust staff participant ratios or other factors appropriately is not often understood by trained outdoor staff, let alone organisation administrators.

Contemporary Approaches
While adherence to minimum activity guidelines has become more common in the last decade, there has also been a move to strengthen risk management planning by formal analysis of risks in particular outdoor

activities and situations, detailing of strategies to reduce risks, and documentation of the whole process. The approaches used have followed very much from industrial safety models and match those often required under state occupational health and safety legislation. I first viewed these approaches as a major step forward for the outdoor education field, because they at least recognised the most fundamental problem about the guidelines approach – that one set of recommendations could cover all situations.

However, I soon found in practice that these new approaches are somewhat unwieldy and far more complex than they really need be for application in outdoor programs. Commensurate with work safety practices such models require listing all possible risks, making judgements about their likelihood and the severity of consequences. Some require quantitative assessment of the risks, even calculating percentages for chance of injury and applying quasi-scientific approaches such as calculating risk scores to judge whether controls are needed.

Dickson (2001) has given an overview of such an approach following the model first proposed by Fine (1971), but she has also identified the major weakness of such systems. Calculating a risk score is not an empirical process, it is one reliant on qualitative judgement. 'The risk score is one person's (or team of people) perception of risk at a given point in time. A different person, a different time …may change that score' P38. If the score is so rubbery why bother to spend valuable time doing the exercise that way?

The most straight-forward approach for outdoor programs is that described in Haddock's (1993) book, *Managing Risks in Outdoor Activities*, where she outlines the New Zealand Mountain Safety Council Risk Analysis and Management System (RAMS) specifically tailored for outdoor activities. The basis to the RAMS framework, and in my view its main strength, is that dangers in outdoor activities can arise from three sources, environmental, human and equipment factors, and that these should be considered separately. In this sense it is based on a number of anecdotal reports and evidence from coronial enquiries that has shown the incidence of serious accident to be greatest

when there are human and equipment deficiencies together with adverse environmental conditions. Attend to all three areas and the margin of safety increases markedly overall. A number of outdoor organisations now use the RAMS or hybrid approaches that are derivations of this system. Even this, though, has proved problematic in practice.

Seeing that it gave a useful framework for outdoor activity risk management planning, I introduced RAMS in University level outdoor skills courses and required students to include a RAMS analysis in their planning documentation for field trips they were undertaking to meet course requirements. What I learned from this was that students would include lengthy lists of 'risks' and detailed strategies for attending to all the routine preparation tasks (take warm clothes and parkas, pack sufficient food and fuel, leave a trip intentions notice, etc.), but rarely consider low occurrence but potentially very serious risk of injury. In effect they were often documenting the planning to make the trip comfortable (keep warm, dry, sufficiently fed and together). I remember, in exasperation, once telling a class that falling in the snow, getting tired, wet and cold weren't risks of their forthcoming introductory nordic ski trip, they were certainties, part and parcel of the experience! The risks I wanted them to consider were things like hypothermia and skiing into a snowgum at speed, things that could really harm them, not just leave them slightly uncomfortable.

At the time I put this down to their inexperience. Brown (1995) has reminded us that the central aspect to good risk management is judgement, and that 'the basis of "sound" judgement is knowledge and experience which has been subjected to reflection' (p. 20). What these students hadn't had at that stage was sufficient experience of situations to correctly judge what the 'real' risks were. At least it showed me where I had to direct my teaching.

At a training course run by the Tasmanian Outdoor Leadership Council that I attended in 1996, where the participants were all experienced practitioners, similar sorts of problems arose when applying the RAMS to given scenarios. The list of potential risks

threatened to be longer than the training course manual, and I noted we spent considerable time documenting many of the routine preparation things that most of us would have done anyway.

The problem, I now think, is that the RAMS adopts the definition of risk put forward by Priest – 'The potential to lose something of value. The loss may lead to physical (broken bones), mental (psychological fear), social (peer embarrassment), or financial (lost or damaged equipment) harm' (1990, p115) - and then goes on to assume that risk management at all levels needs to focus on all risks. Priest's definition reminds us of the breadth of potential harms an organisation should be concerned with, but the result seems to have been an assumption that all risks must be documented in a sound risk management strategy. See, for example, the following list from Haddock.

Trust Fall initiative exercise at camp

1. *Faller hits ground from height and is injured*
2. *Catchers are injured during the exercise*
3. *Students do not want to take part in activity*
4. *Faller is emotionally or socially damaged in activity, preventing participation in future events* (Haddock, 1993, P. 44)

This example list does include some real risks that organisers would need to consider, the possibility of physical injury, perhaps even psychological harm. But, is the chance that some students might not want to take part in the activity a risk, or perhaps just part of the dynamics of programmed group activities that skilled instructors deal satisfactorily with all the time? Also, following Priest's definition these are clearly not the only risks. What about, for instance, torn clothing? To do the risk management exercise fully using this definition would require lengthy documentation.

Other contemporary models follow this same 'all risks' line that pervades the risk management literature. Battiston & Vandepeer, (2001) list 'sunburn, getting lost, sprained ankle, and getting wet' as examples of risks for a short day bushwalk, and then go on to explain quantitative and qualitative

processes for determining the level of risk and incorporating controls into the activity to minimise those risks. These authors, like Haddock, and many others who have produced training materials, do stress that the examples given are just that, examples. However, it is rare to see the really serious risks that exist in many outdoor activities documented in the literature or training manuals, and I have not seen any that give an exhaustive list of all potential risks for a given activity.

If we consider that we have to document all potential losses we end up with such lengthy mixed lists of real risks, discomforts and unwanted outcomes, that either the whole process collapses or it becomes so truncated that some risks get missed. Few guidelines are given on how to sort such lists or set criteria by which some risks might be discounted. This very broad view of risk and a preponderance of simple examples may have led to a concentration on the routine and even the trivial, at the expense of focussing attention on how one might prevent or manage the less frequent but more harmful situations that can and do occur in outdoor activities.

Stevenson (2001), the NSW Senior Deputy State Coroner, provides a stark indication of this in her findings on the death of a 15 year old student who was swept off a log when trying to cross a flooded creek on an indirectly supervised school bushwalk. She found that the staff were trained and skilled and that students received comprehensive training before undertaking hikes. Also, the school did have a formal process of risk management planning and documentation in place. However, she found that while at least some staff at the school's permanent residential campus were aware that it was usual for creeks in the area to rise quickly after heavy rain, this had not been considered in those risk management plans. Stevenson concluded that the staff 'did not understand what was required to be done as part of proper risk management. This is tellingly illustrated by the Risk Management Evaluation Form which is completed by those teachers and assistant teachers attending the hike. The form did not deal with all contingencies…' (p.28). Now this is a worry. A school is following contemporary best practice by adhering to minimum activity guidelines and using a formal risk management protocol, but the coroner finds that what the staff did in this regard wasn't *proper risk management.*

I would concur with Bailie; 'the basic problem is that for several years people have not understood what they have been trying to do when writing Risk Assessments and Safety Statements' (1996 p.6). Rather than seeing formal risk management as an added dimension it may be that people have approached it as 'busy work', documenting all that they had already been doing in their routine planning, teaching and instructing, and proceeding under the illusion that this has reduced the level of risk. Part of the answer to this problem is, I believe, the approach taken by the Adventure Centre Licensing Authority in the United Kingdom.

The UK Adventure Centre Licensing Scheme.

In 1993 four 15-year-old students drowned in a coastal kayaking activity at a private outdoor activity centre at Lyme Bay, Dorset. Parliament, responding to public outrage, passed legislation requiring commercial outdoor activity providers to be licensed and to undergo periodic inspections, that among other things includes perusal of documented risk management plans.

For the purpose of inspection, risk management documentation and policies are only required for situations that 'if not managed or avoided could forseeably result in death or disabling injury' (Bailie 1996, p. 6). It is stressed that at an organisational level it will still be necessary to have a wider risk management perspective (financial risks, behavioral risks, program quality, etc.) but the view of the authority is that these can be dealt with separately.

A modified RAMS format

The RAMS does offer a sound framework for outdoor activity risk management planning, but it might be more effectively applied if when faced with the question 'what are the risks' consideration is limited to those that may result in 'death or disabling injury', or words to that effect.

There are other less harmful 'risks', but this approach leaves handling of those to the individual program leader and his or her manager through some other mechanisms. Good support for this type of approach is given in some risk management texts. For example the Office of Recreation and Sport in Queensland says that risks rated as severe 'must be managed with a detailed risk management policy, as the potential (outcome) could be devastating to the organisation', whereas those rated as low 'can be managed by routine procedures' (OSR, Brisbane, 1998, pp19-20). Routine procedures I would argue don't necessarily need to be comprehensively documented.

Also, risks are best written in terms of defining the event that will directly lead to death or serious injury. Getting wet or even becoming lost don't in themselves lead to people dying or being injured. It is what may also happen when wet (getting cold as well leads to hypothermia) or lost (again getting very cold, or perhaps falling down a cliff while trying to find ones way to safety in the dark). In most cases getting wet is just a normal part, albeit sometimes unpleasant, of the outdoor experience. We shouldn't confuse temporary discomfort with risk.

So, what sort of occurrences can lead to death or disabling injury in outdoor activities? Bailie says;

> *'I rather like the Idiot's Guide approach to things ... there are only three things which will cause death or disabling injury during an activity session;*
> - *Drowning,*
> - *Impact with something solid (which either falls onto you or onto which you fall)*
> - *Exposure / Hypothermia'* (Bailie, 1996, p. 7)

This is possibly a little simplistic, but I don't think the penultimate list would be too long. I would add the following.

There may be some I have missed, but if we add these five to Bailie's three categories we have a short checklist of possible occurrences to consider. When asking what the risks of death or disabling injury are in a given situation ask whether one of these occurrences is possible. The 'impact with something solid'

is obviously a very broad category, and would include things like falls, rockslide, vehicle accidents, even being hit by a sailboat boom, but I think it gives one the idea.

- **Heat stroke**   This would probably not be a high probability in the UK so Bailie wouldn't have needed to consider it, but clearly we do in Australia. There have been a number of deaths attributed to it.

- **Severe burns**   Wildfire is one we have to think of in Australia, but I am also aware of a number of severe burns cases from incidents with lightweight stoves and tent fires.

- **Electrocution**   The danger from lightning strike in some environments is well known. There have also been sailors killed and injured when the mast of their boat has accidentally made contact with overhead power lines.

- **Poisonous bite**   Australians are well aware of the dangers of snake and spider bites, and while rare these are potentially fatal when they do occur. I know of two SA cases in organised outdoor recreation, neither fatal but definitely disabling.

- **Pre-existing medical condition**   Complications of a potentially life threatening medical condition such as asthma, diabetes, cardiac irregularity, extreme allergies, etc. are always possible, even in a well controlled sufferer. In such cases the sufferer or parents obviously have to accept some risk, but accepting such participants into a program means accepting the responsibilities for having a contingency plan in place. I'm aware of 2 student deaths during school outdoor expeditions, one from asthma, the other a congenital heart condition. A greater number of sufferers have had to be evacuated to hospital after becoming ill during an activity.

Having identified the risks, I suggest considering and recording existing policies and guidelines (internal and external to the organisation) that may be relevant to managing such risks. The original RAMS format leaves this to the end, but it makes more sense to look at these first.

Then, one goes on to identifying the dangers that might lead to those risks eventuating. For those unfamiliar with the RAMS, examples of things to consider under each category are:

Environment   Factors that originate from the surroundings and can impact on the activity, such as weather, terrain, availability of shelter, remoteness, etc.

People   Attributes that people (both leaders and participants) bring to an activity, such as skills, knowledge, experience, health and fitness, age, fears, etc.

Equipment   Resources that impact on the activity, such as clothing, buoyancy aids, kayaks, tents, climbing ropes, helmets, motor vehicles, etc.

Strategies to reduce each danger are then identified and documented. Finally an emergency response procedure is detailed, should the risk eventuate despite all the planning that has gone on. For all risks this is a most important part of the process and, particularly for things like poisonous bites and pre-existing medical conditions, the most critical part of the overall plan. Risk management planning is just that, planning,

not a guarantee that the risk will not occur, so one needs to be armed with a crisis plan.

The RAMS process could be used at all levels within an organisation, from setting overall policy about activities to detailed planning for a particular venture. In my experience it is most usefully employed by an organisation to prepare standing orders for operations and the conduct of regularly scheduled program activities.

The modified RAMS in practice

In recent years I have worked with two organisations to prepare risk management plans using this modified approach. Disabling injury took a little time for people to get their head around, so for practical reasons it was defined as an injury that would need ambulance assistance.

At Arbury Park Outdoor School, the SA Department of Education residential outdoor education centre, RAMS planners have been developed for all program activities. Some risk situations such as pre-existing medical conditions, extreme weather events, and snakebite occur across all activities, so separate planners have been prepared for these. For each activity or cross activity risk area the planners easily fit back to back on one A4 page. The process proved easily manageable for the staff involved and served as a focal point for discussion and clarification of best practice procedures. There have been three other outcomes of using this process. Firstly, there is a clear delineation of responsibilities of various staff members. Secondly, the documented plans are a means of clearly briefing new and casual staff. Finally, they are a means of informing client schools about relevant procedures and their own risk management responsibilities.

Bicycle SA, the peak recreation cycling body in SA, used the process to identify and manage the risks of a recreational cycle rides program. A focus group meeting attended by ride group organisers, ride leaders, and committee members identified ten risks of death and disabling injury that could be present in the rides program. Yes, only ten! Separate planners identifying dangers and management strategies were then compiled for each risk from the work of the focus groups, and distributed to participants for comment before final editing.

The process defined expectations and responsibilities of association officers, volunteer Ride Group Organisers and Ride Leaders. Additionally, areas where greater education of participants (who are all adults, although occasionally they may have accompanying children) about their responsibilities and the risks they should accept when participating in the rides were identified.

Experience in both these cases has confirmed for me that filtering the list of risks with the death or disabling injury screen streamlines the process and focuses attention on these most damaging of risks. The clutter induced by considering all risks is avoided.

Concluding remarks

In this paper I have dwelt on modifying the RAMS to apply my thesis that we need to ensure risk management planning is focussed on preventing death and disabling injury. If someone has a preference for another model, but agrees that there is a need to focus the exercise on serious risks, the same principles could be applied to that model. The important thing to me is not what model one is using, but that the outcome is the identification of all circumstances that could foreseeably lead to death and disabling injury, and *proper* steps taken to reduce that possibility.

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About the Author

Rob Hogan has previously worked as Coordinator of the Outdoor Education Unit of the Education Department of South Australia and as Senior Lecturer in Outdoor Education at the University of South Australia. He currently works part-time as a self employed Outdoor Education Consultant and casual outdoor education lecturer and teacher. Email robhogan@chariot.net.au.