Rescue at Very High Altitude
A position paper on the ethical considerations

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No conflict of interest to declare

First of all: Thank you for coming to listen to me this morning. My presentation today is a developing piece of work that is part of a larger project that Kyle and Charley will inform you of later this morning. So please catch up with me, email me or stand up and make a point. When I and the ICAR Board are happy with our position paper conclusions, I will bring them to the Assembly of Delegates perhaps as early as this afternoon for approval.

I would like to start by describing to you what a position paper is and why it is worth writing.
As I will explain, very high altitude rescue is a highly emotive topic. Its evidence base is fragmented at best. ICAR is a respected mountain rescue organisation. We have beliefs and mountain rescue knowledge. We publish recommendations. Our principal goal is to improve mountain rescue.

A position paper is way to reach out to a wider audience than organised mountain rescue with an opinion that is valid and worth listening to even though scientific evidence is not available.

Air Zermatt/Fishtail 2010 (Camp 2, Manaslu 6250m) Photo: unknown

Accidents occur at altitude. We know that the inherent adversities of altitude can impact on a rescue mission. The adversities include the lower partial pressure of oxygen both in the victim and the rescuers. Helicopter performance is reduced when operating in the thinner air. And often the goals and aims of the victims and potential rescuers collide with the generation of psychological conflict.

During the 21st century, the feasibility of rescue has expanded into thinner air as a result of improved performance of equipment. At the same time, more people are travelling at very high altitude and, with near instant communication, the profile of rescues has increased.

Nepali sherpa saves Malaysian climber in rare Everest 'death zone' rescue

By Gopal Sharma

June 2, 2023 11:26 AM GMT+1 · Updated a year ago

Extreme altitude rescue is reported in a binary fashion. For example, last year (2023) news was made by a heroic Nepalese sherpa carrying a stricken Malaysian climber from the balcony on Everest (8400m) back to the South Col and then, with others, using a stretcher to lower him to Camp 3 (7162m), where a helicopter, using a longline technique, completed the evacuation. The sherpa said that he had convinced his Chinese client to forgo their summit attempt as "Saving one life is more important than praying at the monastery,"

Norwegian climber says it would have been impossible to carry injured Pakistani porter down K2

Uproar was sparked by drone footage showing climbers walking past gravely injured porter

Matt Drake • Monday 14 August 2023 00:02 BST • 2 Comments

2 months later, another rescue was in the news. A Pakistani porter was fixing ropes in the bottleneck area of K2 at about 8200m. He fell and was injured. He died a few hours later at the scene. Climbers went to his assistance. Some climbers then continued to the summit including a Norwegian climber, and her Nepalese guide. By summiting, they established the record for the shortest time – 90 days - to complete all 14 summits above 8000m. The monetary cost of the challenge was reported to be in excess of $1 million. The mountaineer has reported receiving death threats and has retired from mountaineering. She has said: "I'm sure that if it was possible that we saw a chance to carry him down from there, everyone would have tried that. But it was impossible."

It is all too easy to label them as good and bad or right and wrong and to respond to them without appreciating the nuances of the situation, nor the difficulties of acute decision-making outside the expected plan for the day.

UIAA

- 2006: David Sharp and Lincoln Hall (Everest)

- Ed Hilliary: 'You have a duty, really, to give all you can to get the man down and getting to the summit becomes very secondary'

- UIAA Declaration on Mountain Ethics 2009 and 2016, and the Tyrol Declaration

- 'Helping someone in trouble has absolute priority over reaching goals we set for ourselves in the mountains. Saving a life or reducing damage to an injured person's health is far more valuable than the hardest of first ascents'.

Of course, we, as mountaineers, have been here before. David Sharp's death high on Everest in 2006 divided mountaineers with Ed Hilliary saying: 'you have a duty, really, to give all you can to get the man down and getting to the summit becomes very secondary'. Others espoused that view as the rescue was impossible or futile and it was everyone for themselves in the Death Zone. Hard on the heels of this story was the miracle of Lincoln Hall; left for dead, he survived a night out in Everest's death zone and was rescued the following morning.

These events and particularly the furore around Everest led to the UIAA Declaration on Mountain Ethics and the Tyrol declaration. These were first published in 2009. The relevant section says: 'All participants in mountain sports should clearly understand the risks and hazards and the need to have appropriate skills, knowledge and equipment. They need to be ready to help others in the event of an emergency or accident and also be ready to face the consequences of a tragedy.' I take the last phrase to mean foregoing a summit bid but there are other interpretations.

Photo: unknown

What has ICAR had to say? Publicly very little!

We have members that routinely work at very high altitude such as Air Zermatt, and have heard from those that have run special training programs such as Bruno Jelk and Gerold Biner seen here in the Khumbu region of Nepal.

Rather bewildered by the press reporting of incidents at extreme altitude, ICAR started reflecting on the rescue at very high altitude. Discussions led to the setting up of a work group in 2022 headed up by the medical commission with Kyle McLaughlin as the coordinating author. The goal of working group was to improve the performance and safety of these rescues. The scope of the project was too broad for a single approach so a decision was made to restructure the output into a number of specialist areas. These are shown here:

On the right of this slide you see our topic for this presentation - an overarching position paper covering the ethical considerations, where the authorship is much more diverse and included those operating in the improvised rescue arena.

Now for a very important limitation. We have elected to exclude legal and consent issues from the paper. We are assuming that these hurdles have been successfully navigated. The reasons for this are self evident when you consider the issues around international rescue in other arenas such as migrant boats and natural disasters.

Literature on the Ethics around Rescue

- Duty of Easy Rescue

  - Universal ethical code in all cultures

- Limitations to a 'Duty of Easy Rescue'

  - What risk is minimal? Worthiness of the act? Scope of 'Duty'?

- 'Duty of Hard Rescue'

- Rescue is not a human right; it is a social value judgement of symbolic value

- Professional (rescue) service Ethics

- Exclusion of Legal and Regulatory frameworks.

Let's take a step back:
It is frequently stated that there is an accepted ethical duty to rescue if there is minimal cost/inconvenience to the potential rescuer. This 'Duty of Easy Rescue' is often cited as: You are passing a shallow pond no deeper than your knees and see a child at risk of drowning. You walk in and carry the child to safety. The potential benefit of saving a life outweighs the 'minimal cost' of soiled clothes and lost time. The literature suggests that this ethical rule is universal in all cultures.

Before we blandly accept the 'Duty of Easy Rescue', we have to define a number of limitations.
Firstly, how minimal is 'minimal cost' in physical, mental, financial, and risk terms?
Secondly, how certain are you of 'saving a life' as opposed some less worth cause such body recovery, or bailing out a foolhardy attempt.
And thirdly, if the scenario occurred every time you walked to work minimal cost multiple by many can become significant.

Authors have argued that if the potential rescuer has voluntarily and knowingly accepted an assumed level of risk equal to risk of performing a rescue, and that the original pursuit of the rescuer is less morally important than performing a rescue then the duty of rescue applies. Some authors call this a 'Duty of Hard Rescue' and this sort of argument seems to be the basis for the UIAA's mountain ethics statement. Others, notably Findler in a paper published in 2021, describe this situation as the 'comparable risk' principle. Findler then goes on to illustrate that the limits of the duty of hard rescue are too onerous and should be rejected. He grounds his arguments in the 'David Sharp' example.
It has been argued that at a societal level, rescue is a social value judgement that downgrades the obligation to rescue to below that of a universal right. However, rescue has a strong symbolic value to a community.
So far we have been concerned with a bystander becoming a rescuer when a specific need arises. How does this change when there are guides and porters contracted to clients or travel companies? Does this change again when a community sets up a professional rescue service?
In both these cases it is generally considered that the same ethical considerations apply. A risk v benefit equation is still present and authors have conclude that

performing a rescue is not obligatory.

I remind you that we have exclude legal and regulatory influences.

Ethical Considerations in Organised Mountain Rescue. Managing the Risk v Benefit equation

- Core ethic principles (Autonomy, Non-maleficence, Beneficence and Justice) have been used to define the rules of conduct

- Chaos turns towards control in the individual Risk v Benefit equation on every mission

A combination of Zero-Point Survey (STEPUP) and Crew Resource Management

Returning to organised rescue: You may think that the ethics of rescue for organised rescue teams is an abstract concept of little practical importance. After all, 99.9% of the time no one in an organised rescue organisation consciously considers ethics.

That is an illusion. Organised rescue has structured itself to deal with the underlying risk-benefit ethical considerations certainly at an individual mission level and usually also at an organisational level. What does that look like?

Perhaps the easiest way to present this is to look at the combination of Zero-Point Survey (STEPUP) and Crew Resource Management – both a common tools that are embedded in rescue. Another way that might be to look at rescue organisations that have produced a code of conduct for rescue operations. I would be most interested to look at any you have - you can leave the translation to us.

Zero-point Survey (adapted from Cliff 2018)	
Self	Am I physically and mentally ready for this?
Team	Who is the leader, what is my role?
Environment	What are the dangers? What constraints are significant? Is space, light, noise, crowd-control needed?
Resuscitation commenced	
Patient	Primary survey
Update	What is critical, what is likely to be difficult?
Priorities	What are the immediate goals of treatment?

I hope you are familiar with the Zero-point Survey shown here at the top of the slide and a Crew Resource Management approach seen in the next slide. The Zero-point survey is great for a regular team managing a single casualty

Crew Resource Management (adapted from Atkins)	
Situational Awareness	Coordination
Controlled ––––––––– Chaos	
Communication	Decision Making
Task Management	Mission Planning

While the CRM approach is more suitable to a multi-agency incident with a less well knitted team dealing with multiple casualties.

Zero-point Survey (adapted from Cliff 2018)	
Self	*Create 'head space', tasks as challenges, recalling training. Focus attention on next task – getting ready to depart*
Team	*Define, shared mental model, periodically review*
Environment	*Dynamic risk assessments (weather, avalanche, oxygen), casualty's condition (Rendezvous strategy). Situational awareness is key at reducing chaos and avoiding disasters from human error. Crowd-control needed?*
Resuscitation commenced	
Patient	*Focused 'Primary survey'*
Update	*Team review particularly of risk assessments*
Priorities	*Recognise the dynamics of the situation. Realign the team if necessary as the mental model changes (ie body recovery)*

Here I have suggested some action points that might be pertinent at altitude. Self – Creating 'head space' by calming down, slowing breathing, thinking of tasks as challenges (rather than threats), recalling training and checklists/guidelines/protocols and 'chain of survival': Focus attention on next task – getting ready to depart_Team – Short team brief to establish shared mental model of the rescue. Leader verbalise this mental model periodically and particularly when significant changes occur._Environment – Dynamic risk assessments (weather, avalanche, oxygen), casualty's condition (Rendezvous strategy). Situational awareness is key at reducing chaos and avoiding disasters from human error._Resuscitation commenced_Patient – Perform a Primary Survey_Update – Change things if the situation can be improved. Make sure the whole team can have an input._Priorities – Recognise the dynamics of the situation. Realign the team if necessary.

Ethical Considerations in Improvised Mountain Rescue
Risk v Benefit equation

?

Organised rescue almost always formed in response to a need for rescue that was being carried out by improvised rescue teams

Now we come to an open question. Thinking about the rescues from extreme altitude, like the ones I mentioned before. Can we envisage incorporating the experience of organised rescue into these rescues? That is not for me to answer though bear in mind that organised rescue almost always formed in response to a need for rescue that was being carried out by improvised rescue teams. What were the triggers for the change?

Patterdale Mountain Rescue   1960

What guided my team from the picture here to …

2024

To this!

Over time, I suspect the demands and burdens of rescue had become significant. Or perhaps, technical knowledge was becoming an issue. Or the regulator environment had changed. I think a combination of all these and a few more.

Ethical Considerations in Improvised Mountain Rescue
Risk v Benefit equation

- Equipment: Could some pre-planning at the start of the season be possible?

- Training: Is there a training need? Hands on with equipment, Checklists available, Scenario practice in safety.

- Integration: Command and Control - leader identification & 'Chains of Survival'. How much of this can be pre-determined?

- Rescuer Health and Suitability: Can potential rescuers be identified?

- Managing the Media. Can this be controlled?

Can we imagine how the current situation of extreme altitude rescue could evolve? Here are some questions that could be asked or could be starting points for development:

- Equipment: Could some pre-planning at the start of the season be possible?

- Training: Is there a training need? Hands on with equipment, Checklists available, Scenario practice in safety.

- Integration: Command and Control - leader identification & 'Chains of Survival'. How much of this can be pre-determined?

- Rescuer Health and Suitability: Can potential rescuers be identified?

- Managing the Media. Can this be controlled?

Summary

- Rescue from Very High Altitude has additional risk

- 'Trial' by Media has flourished; this can be harmful

- The ethics of performing a rescue has been discussed but is incomplete

- Organised mountain rescue developed from improvised rescue

- Organised rescue evolved a system of 'Rules of Rescue Conduct' to manage the risk – benefit equation

- ICAR are producing technical and medical papers based on the literature and expert opinion and a position paper on the Ethics of Very High Altitude

- Could Improvised Rescue adopt systems from Organised Rescue

I will bring this presentation to a close with a summary - a set of bullet points that will conclude the position paper.

Rescue from Very High Altitude has additional risk

'Trial' by Media has flourished particularly for rescues at extreme altitude; this can be harmful.

The ethics of performing a rescue at very high altitude and particularly at extreme altitude has been discussed but is incomplete. The limitations described by a 'Duty to Rescue' may well be being breached in high-frequency rescue hotspots

Organised rescue has evolved a system of 'rules of rescue conduct' to manage the risk – benefit equation of a rescue mission. These rules are increasingly explicitly written. Many organisations may not have reached this stage but recognise that the ethics of rescue are incorporated in their operational modus. When appropriate, specific consideration of altitude should be a routine part of this process.

ICAR is producing papers based on the literature and expert opinion to inform on the current technical and medical aspects of rescue at very high altitude. These will be freely available to all.

Organised mountain rescue almost always developed from improvised rescue. The impetus for the change may have involved the burden rescue becoming significant as well as other factors such as regulation and increasing sophistication.

Could improvised rescue adopt systems from organised rescue? Policy makers, commercial enterprises, professional associations, fledging rescue systems, as well as guides, expedition members and clients may benefit from knowledge from organised rescue and adapt systems for their purposes.

Thank you for listening
Any written "Codes of Conduct'
Any Serious Misgivings?

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Thank you for listening.
Please let me have your comments and support. I am particularly anxious to have any written 'codes of conduct for rescue that you have within your organisations.
Also please let me know if you have any serious misgivings on the summary. I would like a complete consensus before we go to an AOD for final approval.