The Professional Mountaineer

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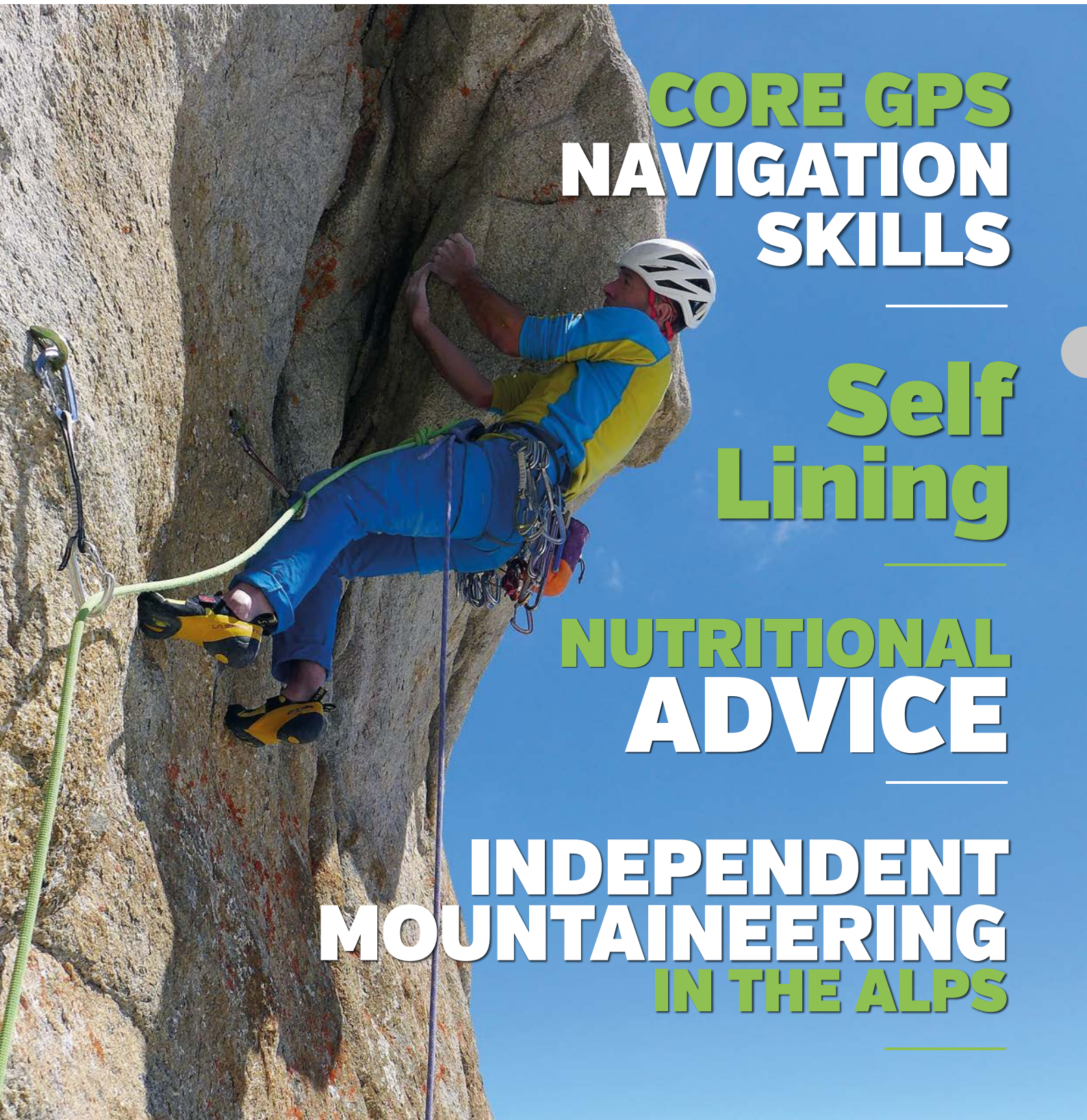

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NEXT ISSUE

Autumn 2019 Leadership, gaining trainee leader experience and sports climbing.
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Our front cover
Dave Macleod climbing the penultimate 7c+ pitch of *Unchi Maka* 8a, on the west face of Aiguille de Sialouze in the Ecrins. © Calum Muskett.

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EDITORIAL

Whichever side of the political divide one sits, it has been impossible to ignore a message that has been repeated increasingly loudly and urgently over the decades: action is needed to tackle climate change.

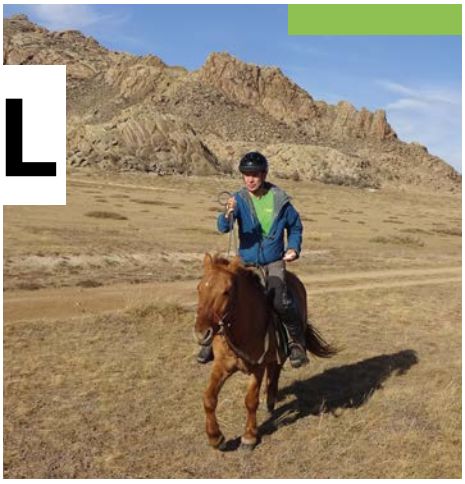

PHOTO Editor in Mongolia. © Anne Arran.

A younger generation has been inspired by a teenage role model; I cannot remember seeing such a young ambassador for global change as Greta Thunberg, courted by governments throughout Europe. It is quite extraordinary. Greta has joined national treasure David Attenborough in warning people about the need for drastic behaviour change. Even the climate change deniers have no argument that explains the equally tragic and frightening destruction of biodiversity worldwide. Eco warriors took to the London streets with a controversial but media savvy peaceful protest in the form of the provocatively titled, Extinction Rebellion. AMI member James McHaffie has named three of his new routes in the Dinorwic slate quarries in a way that shows his support for the campaign.

All readers of this magazine hold a special place in their hearts for wild places. Yet we are also part of the problem unless we make some significant changes to our priorities and therefore our lifestyles. I know that I am preaching to the converted here, but collectively we have the power to educate a significant proportion of the population. Some actions are easy to perform and speak louder than words, others are harder and require sometime painful choices, particularly for those of us who rely on long haul travel for some or part of our living. A mass change in consumer habits can and will motivate producers to rethink product lines, but there is no denying that flying has a very high carbon footprint. Can we trade this against green initiatives such as planting native and other trees, shrubs and perennials? Surely, it's another part of the solution, as is voting for political leadership that places environmental protection higher on its agenda rather than simply as rhetoric.

Globally we see an expanding middle class: I believe that helping to develop local adventure tourism and empowering people to perceive the exotic in their home region is an important step towards reducing the impact of the travel industry: this is a developing area of work that many UK instructors and leaders are admirably positioned to help develop. In the long term more of our international association members may well need to relocate, particularly if border queues continue to grow…

In the meantime, here is a very diverse collection of articles to help you share and interpret wild places with our students and clients, to inspire, educate and to safeguard. Together we really can make a positive impact.

Steve Long
Technical editor

OUR **COVER**

Calum Muskett

Calum is a professional climber, holds the mountaineering and climbing instructor qualification and is an aspirant British Mountain Guide.
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www.muskettmountaineering.co.uk

OUR **SUMMER ISSUE CONTRIBUTORS** INCLUDE

Marianne Davies

Marianne's practical experience includes more than 20 years coaching and 8 years as a coaching manager, coach educator and assessor. This is complimented with active Mountain Rescue experience.

Sarah Kekus

Sarah has an MSc in Nutritional Therapy, is an experienced yoga teacher and holds the Winter Mountaineering and Climbing Instructor qualification. She lives in the Lake District where she runs her business The Health Architect.

Adrian Nelhams

Adrian, IFMGA British Mountain Guide & director of both the International School of Mountaineering (ISM) and the BMG Guides Training Scheme, supported by Arc'teryx and the independent Climbers Shop and Joe Brown Shops.

Rick Shearer

Rick is an International Mountain Leader who has been delivering GPS training to outdoor leaders for over 10 years focusing on that for MTA, AMI and BAIML members.

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Feeling inspired?

If you would like to contribute to the next issue, please contact **Belinda Buckingham** at **belinda@mountain-training.org**

Fancy advertising?

If you would like to advertise in the next issue, please contact **Caroline Davenport** at **caroline@media-solution.co.uk**

NEWS

THE ASSOCIATION OF MOUNTAINEERING INSTRUCTORS (AMI)

The AMI proposals for the renaming of the MIA/MIC were accepted at the MTUK Council meeting in March. The Mountain Training websites and AMI website have had the new titles of Mountaineering and Climbing Instructor/Winter Mountaineering and Climbing Instructor added and already members are promoting these individually. The more these full titles are used the sooner they will become established in the public domain.

AMI have extended their partnership with BMC to run workshops, to include not only youth training but also club courses. The Mountaineering Scotland 2019 Ready to Rock courses are also provided in partnership with AMI. A Regional Reps weekend/meeting is planned mid May to look at how we can further support members, and have an increased presence at national/regional events. There was a very successful Skye CPD event in early May, including an evening Safety Seminar – a great example of professional training for members. Finally after the tragic avalanche this winter on Ben Nevis, it was agreed at the Association Collaborative Working Group meeting in March to pool resources across AMI, BMG, MTA and BAIML to widen support for members involved in traumatic events, through Trauma Risk Management (TRiM) trained individuals across all associations.

Phil Baker (Chairman)

© Phil Baker

AMI is the representative body for professionally qualified Mountaineering and Climbing Instructors in the UK and Ireland and is committed to promoting good practice in all mountaineering instruction. Full members hold the Mountaineering and climbing instructors qualification or higher qualification the Winter Mountaineering and Climbing Instructor.

T **01690 720123**
www.ami.org.uk

BRITISH MOUNTAIN GUIDES (BMG)

It's with great sadness that I start by informing you that long-time BMG Guide Dave 'Smiler' Cuthbertson passed away on the 2nd May this year. Our condolences go out to his partner Clare, his family and friends. Smiler was the epitome of the climbing enthusiast and a past President of the Climbers Club.

There are five new trainees starting the BMG training scheme and nine aspirant Guides who are well on their way to completing the qualification.

How the UK's departure from the EU will affect our members is still unclear.

Once again the very popular and successful Arc'teryx Alpine Academy will be running in Chamonix this summer staffed by IFMGA Guides many of whom are BMG members. The Arc'teryx Big Weekend ran over the bank holiday weekend of the 4th-5th of May in Langdale and was a great success.

The conditions in both the alpine areas and further afield this Spring have been challenging. The lack of snow and relatively mild temperatures contributed to this, and there are concerns also for the coming summer. A number of Guides have been operating in the arctic regions and here also quite unseasonable conditions have been found giving yet more concern for climate change.

Mark Charlton (President)

© Bruce Goodlad

The BMG is a member of the International Federation of Mountain Guides (IFMGA), currently comprising 24 nations worldwide, with growing membership, it is the professional organisation that trains and assesses Mountain Guides in all disciplines. A British Mountain Guide operates to the highest recognised level throughout the world, in all terrain and in diverse roles.

T **01690 720386**
www.bmg.org.uk

NEWS

THE BRITISH ASSOCIATION OF INTERNATIONAL MOUNTAIN LEADERS (BAIML)

As we approach the anticipated date of the UK's departure from the EU there are still a lot of issues in the air making it hard for anyone to predict the future. The situation will move and change but there are some key points that members should be aware of now. Ian Spare has made some useful comment on the EU mobility that will be published soon with further advice for BAIML members after discussion at the end of the May Board meeting.

Over 200 responses were received on the BAIML members CPD survey. Kelvyn James reports the new CPD policy is online and live, and the changeover has been exceptionally smooth with less than 1% of members not meeting the new requirements. It was concluded an improvement in CPD available outside the AGM Conference was needed. In addition here is an updated incident reporting on the members' side of the BAIML site.

BAIML Regional reps are sought in the following regions Ireland (North and South), France Pyrenees and France Alps with Michelle Smith proposing a new way to improve how reps can be retained and rewarded for their efforts. Corinna Parry has captured common member FAQ's to improve efficiency.

Anne Arran (President)

© Anne Arran

BAIML is the professional association for International Mountain Leaders (IMLs) in the UK. It represents the UK at UIMLA, the Union of International Mountain Leader Associations, which is the international governing body for IMLs. Full members hold the IML award and are committed to a dedicated CPD programme.

T **01690 720272**
www.baiml.org

THE MOUNTAIN TRAINING ASSOCIATION (MTA)

Our biennial autumn conference will be taking place on the 23rd and 24th November at Derwent Hill in the Lake District. A full programme of workshops will be on offer and places will be available to book soon.

We are excited to announce that we are expanding our mentoring programme and applications are open for both mentors and mentees. We've programmed a couple of mentor training days on Friday 13th September at Milton Keynes and Friday 20th September at Harrogate Climbing Wall, so if you are interested in getting involved as a mentor or feel like you would benefit from some mentoring, more details can be found on the MTA website.

The Mountain Weather workshops being provided to members across the UK in collaboration with the Met Office have been a great success so far and forthcoming workshops are taking place in Northern Ireland, North Wales and Scotland.

MTA are working in collaboration with BMG, AMI and BAIML to enable us to provide support to its members should they be involved in a traumatic event and Educare have added some additional modules to the online safeguarding training package offered to members in the members' area.

Belinda Buckingham (Development Officer)

© Cath Sinclair

The MTA is a membership organisation providing support and development opportunities for all candidates of Mountain Training. Promoting good practice and providing continued personal development opportunities as part of a UK-wide community of outdoor leaders. Full members hold one or more of the Mountain Training Awards.

T **01690 720272**
www.mountain-training.org/mta

ON THE TRAIL OF GENGHIS KHAN – MONGOLIA, A LAND OF POTENTIAL

Meandering rivers snake across the high plateau, great spines of granite colonise the middle distance, rounded, bony and somehow defiant. Shades of mountains roll out in waves as I sense the vast and uncluttered space all around. Semi-wild horses wander at will and herds of sheep punctuate the endless steppes.

WORDS AND PHOTOS BY ANNE ARRAN

OPPOSITE TOP View from our nearby cliff above camp. OPPOSITE BELOW Riding out into the Steppe with Stephane and Steve. 1. Our first 'ger' settlement, 40km from the nearest village. 2. Orkhan falls. 3. Friendly camels. 4. Children outside the cultural festival. 5. Our second 'ger' home. 5. Made to feel at home.

Without horses, the Mongols would be like birds without wings. The mighty armies of Genghis Khan covered vast distances and it was their livestock that enabled them to conquer the world. Herders have mutually beneficial relationships with horses, sheep, goats, oxen and camels. This is Mongolia, an apparently simple, yet deceptively complex country which did not declare independence until 1911 and shares the land with one-third of the world's snow leopard population.

This was my first visit to the land of this ancient civilisation that was once the ruler of most of the known world – so this article focusses on how this country has inspired me to explore it further.

The first thing you notice as you leave the city is that most people still live in traditional *gers* (Mongolian for 'home' or *yurt* from the old Turkish for 'dwelling place'). There is no escaping the slim separation from the elements, and how compromised the dwellers would be at night without a warming stove. We had already tried our hands at erecting gers at the cultural centre outside Ulaanbaatar and learned they can be moved for the winter season, taking around 2-3 hours to re-construct. Apart from modern waterproof fabrics for the outer layer, little has changed in their design over the millennia. Surprisingly, they don't seem to have discovered the benefits of dampeners for the central stove, so the nights begin at melting point as firewood is crammed in.

Buddhism is the dominant religion, although there has been a resurgence of shamanism in recent years – both were supressed for decades under the communist rule, but some impressive monasteries survived the purges. Himalayan travellers will be surprised by the prevalence of blue sashes and statues or carvings of reindeer on hills, waterfalls and other auspicious sites. At some sites the more ubiquitous multi-coloured prayer flags can also be seen. But the Khans worshipped the big blue, and as you become immersed in the endless panoramas, it's easy to understand why.

My travels followed a UIAA General Assembly meeting in the capital, Ulaanbaatar. Mongolia has a large and growing mountaineering community, focussed more on exploration and adventure than technical climbing, although interest in rock climbing is also developing rapidly. We learned that many city dwellers yearn for their rural roots, and mountain activities are helping to fulfil these primal instincts. The Mongolians were very proud to be hosting an international mountaineering event and enlisted an amazing array of cultural icons to celebrate the meetings – the National orchestra, throat singers, a contortionist, Shaman, fashion show and masked dancers. We were also taken to a cultural centre just outside the city, where mini versions of the traditional Naadam festival are displayed, featuring the popular sports of wrestling, horse racing and archery. We were also inducted into the complexities of one of the many games played with various species' ankle bones! Any one of these cultural activities alone could provide a truly transformative experience for a trekking group.

With little free time after the meetings I joined a small group for a tour of the central area surrounding the ancient capital of Karakorum (now Kharkhorin) and the Orkhon Valley. We opted to minimise vehicular transport, exploring the region more intimately on horseback and the two-humped Bactrian camel. Our guide, "Rocky" was a great cook and studied Mongolian history and culture at university. Like most Mongolian women she was also an excellent equestrian and an excellent organiser. Indeed, she was the perfect interpreter!

Our first camp was hosted by a lovely old couple, open for the winter season at Murghi guest house. The colourful furniture, rice vodka, mare's milk and woollen blankets made for a jolly ambience, as did a large pot of broth which bubbled and frothed for dinner. We were 40km from the nearest tarmac, but apart from the mini TV screen on one of the colourful tables, we could have been transported several centuries.

7. Morning yak milking. 8. View over camp.

Highlights of the next few days could each provide the memory of a lifetime. Our first horse-trek, to *Ulaan Tsutgalaan* waterfall, sliding down sand dunes in the sub-Gobi desert, crimson sunsets, sunrises on granite tors, lassoing horses and then galloping them across the steppes below sacred *Khögno Khan* Mountain, vodka and mare's milk with the neighbours, the eerie calls of rutting deer-unnervingly reminiscent of howling wolves, helping to round a goatherd on horseback and living on a farm; such was our snapshot of this wonderful country.

Could this country be an International Mountain Leader's dream? I think so!

And for other mountain professionals?

Our hosts whetted our appetites with tales about the following objectives:

Mountains of Mongolia – The Mongolian Altai

The highest peak is Khüiten (4,374m) and has a permanent snow cap, first climbed in 1963 by Mongolian mountaineers. It is one of five peaks of the Tavan Bogd mountain range, with Tavan Bogd Uul lying on the tri-border of China, Mongolia and Russia, just a three-hour flight from Ulaanbaatar.

Following a tragic avalanche incident last year, the Mongolian Climbing Federation is welcoming a joint three-year UIAA Training Standards project directed by Steve Long and part-funded by the Petzl Foundation, including Hill Skills through to a leadership qualification scheme and tutor training; an excellent step forward from this receptive and relatively new federation.

Rock climbing

Granite climbing areas adorned with chicken heads and cracks can be found along an escarpment in Terelj Gorkhi National Park with plenty of potential, just 80km from Ulaanbaatar. Routes go up to 7c in difficulty. A Nathan Smith topo was republished in Desnivel and can be found online. Climbing is also found at Dugan Khad, Ikh Gazriin Chuluu. Keen for a climbing trip? Oh yes!

Fun facts about Mongolia

- There are 30x more horses and sheep than people.
- 80 plus genera of dinosaur bones have been found in the Gobi Desert, which is the largest dinosaur fossil reservoir in the world.
- The Mongolian empire was the second largest in history, with 17 million people thought to be descended from Genghis Khan!
- Przewalski's horses have 66 chromosomes, compared to 64 of domestic horses, and have long been considered the only 'true' wild horse in the world.
- Mongolia covers a huge region, with many distinct ethnic groups and cultures. Two of the more famous and unique groups are the Eagle Hunters (whose main annual festival now attracts thousands of photographers) and the reindeer people.

Anne Arran is an IML, BAIML member and climber who runs a tour operator business Freedom Trail Treks based in the UK and Chezarran apartments in Ariege, Pyrenees. If you would like to know more about this area do get in touch. We are offering horse trekking in Mongolia in 2020 and I am working with Yellowwood Adventures in Mongolia in 2019. Contact Anne on
E ***anne@freedomtrailtreks.com***
www.freedomtrailtreks.com
www.yellowwoodadventures.com

CORE GPS NAVIGATION SKILLS FOR OUTDOOR PROFESSIONALS

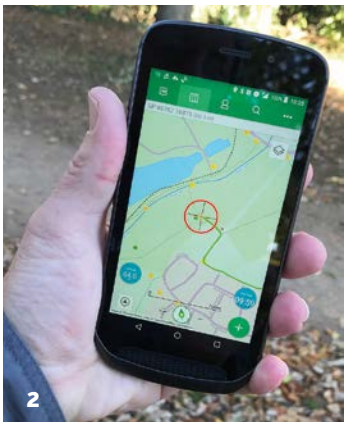
Using a GPS device effectively in everyday and emergency situations

ABOVE Navigating in the mist on Cadair Idris.

In my previous article, I described the essentials and first skill: getting a GPS set-up and ready to relocate whenever required. The aim of this on is to outline four core skills which, once mastered, will provide the basis for the effective use of any GPS device to augment conventional navigation whenever required or desired.

Many leaders carry one of these comprehensive and unerringly capable navigation systems but regard it as an emergency tool only. But why not use it for common situations, such as very poor visibility, and make life easier? Furthermore, clients and students often carry and use them adeptly; they expect outdoor professionals to understand GPS technology and help them develop GPS skills just like any other outdoor technique. None of us believe that a GPS is a substitute for sound navigation skills but, using one effectively can enhance safety and improve group experience in a variety of day-to-day situations.

WORDS AND PHOTOS BY
RICK SHEARER



1. Navigating using a GPS device compass screen. 2. Using a smart-device map screen to relocate. 3. Using a GPS map screen to relocate.4. Location as coordinates on a wearable. 5. Using a GPS in difficult conditions.

Rick Shearer is an International Mountain Leader who has been delivering GPS training to outdoor leaders for over 10 years focusing on that for MTA, AMI and BAIML members.
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Location – more about this fundamental skill

If your GPS device is modern and correctly set-up, has a clear SKY view and is HOT, it will give your location, at any time, generally accurate to within ± 5m, anywhere in the world. The most intuitive and easiest way to relocate is to use the *map screen*. Virtually all GPS handhelds and all smart-devices offer a variety of maps to use, with open-source maps such as the one shown, sometimes better or more recently updated than paper maps, at low or no cost. Your location is depicted by the centre of a symbol, often a blue triangle, or a small circle with a dot or cross-hairs in the middle. The map is usually oriented in the direction that the unit is held or moving, and you can also zoom the map in and out and so see your location more clearly. Irrespective of how the device has been set-up, *the mapping screen **always** accurately shows your location*; in this respect, rely on your GPS map, not your paper map. GPS devices, and most (but not all) smart-device apps can also give your location in coordinates but, for this, it is essential for the appropriate position format to have been set on the device.

Mark a waypoint – remembering key locations so you can easily return to them

Your *functioning* GPS device always knows where you are; it can easily make an electronic note of your current location to help you return to it at some other time. For example, you can save your start point (which may be where you return to) or escape points along your route, like key path junctions. For devices with buttons, there is often one labelled "**mark**", otherwise there is always an easily accessible function like "mark waypoint"; some devices use terms like POI or OOI for waypoint. You can also mark waypoints directly from the map on the device. Although somewhat more advanced, it means you can go to key locations you haven't visited before, and it's a great back-up.

Find a waypoint, coordinates or point on the map – basic navigation

If you need to get to a location unexpectedly, perhaps coordinates where you can meet emergency services, or an escape point to abort you journey safely, or simply to navigate in poor visibility, every GPS device has a "electronic" micro-navigation function. For devices with buttons, there is often one labelled "**find**", otherwise there is an easily accessible function like "where to?", "search", "go to" and so on. You usually then need to choose whether you want to go to coordinates or a waypoint (there are other options). Some devices also use terms like POI or OOI for waypoint. Modern GPS units with mapping often have many thousands pre-programmed into the device; apps can often access the internet to help find locations. Finding a waypoint, whether you have stored it previously, or it is built-in to the GPS device is by far the easiest; you simply select it and go. For coordinates you will need to enter the coordinate in the selected position format; usually the device automatically fills-in the coordinates of your current location,

and you need only edit them. *Make sure you've entered them correctly* before pressing go! On devices with mapping it's also possible to tap or select the point you wish to go to on the map; this is usually quite easy to do, but the method varies from device to device. On touchscreens you generally pan the map to the approximate area required (it automatically goes into "**planning**" mode), then tap the screen; a pin or pointer appears which can be precisely positioned by panning the map or moving the pin. On button driven devices you use the rocker or thumb-stick to "drive" the map to the desired location; a pointer appears, and the map goes into "**planning**" mode – when the pointer is on the required location, press "enter" or press the thumb-stick and go. Once you have selected your destination, most GPS devices will point (navigate) *directly to the destination*; you remain responsible for *wayfinding*: finding a safe and appropriate way along the ground. This is the GPS equivalent of micro-navigation. On dedicated GPS devices, you can do this using either the map or the compass screen, or a combination of the two; apps generally only have a map screen. On the *map page*, a line (the *course*) is overlaid from where you are to the selected destination. Looking at the map (zoom in/out as required) you choose the *way along the ground* to get there, which may meander left or right around the suggested *course*, but your progress is clear from the map. Whatever way on the ground you follow, the line always points to the *destination*. On GPS devices with a *compass screen* there is a *bearing* pointer that always points to the destination you have selected (but ONLY when you are moving if your device doesn't have a built-in electronic compass). There may also be data fields on the screen to give useful information such as *distance* and time to go to the destination. If you go off-course, it will still point directly to the destination, but you need to look at the ground and follow a safe and appropriate way. The distance count-down can be very useful: no need to count paces! On many devices, it is possible to superimpose the compass on the map page and/or include the "distance to go"; this is incredibly useful but doesn't work well on devices with small screens. Some also have the capability to route actively; instead of pointing you directly to your selected destination, it will attempt to direct you following paths and tracks in its digital map. This is very useful for experienced GPS users but can be misleading and hazardous for those who do not understand how it works.

Track-back – getting back to a safe, known location

Sometimes, the going gets tough, and you need to head back exactly the way you came to safety. If your GPS device has been switched-on continuously, and has been HOT with a clear SKY view, and track-recording is switched-on, it records where you have been; this is your *track*. You can see the track on the map screen as a distinctive coloured continuous or dotted line. If you need to retrace your steps to a safe known location, you can simply turn through 180° and follow your track on the *map screen* of your device. Some have a built-in function to help you. Don't underestimate the value of track-back; after location, it's can be a life-saver, but only works if your GPS device is functioning continuously. You are unlikely to need it very often, but it's worth the investment to keep the GPS working at all times for the safety-of-life moment when you'll really need it.

Learn, practice, consolidate and revise

You need to *learn* to set-up and operate your GPS, relocate, mark a waypoint, find a waypoint, coordinates or point on the map and to track-back using your specific device. Like any outdoor skill, you need to *practice* them in familiar territory until they are second-nature – especially the ones you don't use regularly. Subsequently, *consolidate* the skills in realistic terrain, but controlled conditions. If you don't use your GPS very often, remember to *revise* the skills regularly and before setting out for a navigational trip.

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ROCK CLIMBING INSTRUCTOR

Assessment from both sides

ABOVE Abseil rigging.

I ran a Rock Climbing Instructor assessment recently in the Peak District – my first since the qualification changed from the Single Pitch Award last year. Among the candidates was Simon who I'd also previously assessed for his Mountain Leader.

WORDS AND PHOTOS BY PHIL BAKER AND SIMON STOKES

It was clear then that his experience and commitment as a mountaineer and climber made him ideal for undertaking these qualifications. I wanted to chronicle Simon's experience of assessment so others considering the scheme might gain useful insight into the process from both the candidate and the assessor's perspective.

BEFORE

Simon

I had plenty of experience and evidence in DLOG (Digital Logbook) of the climbing routes required and over and above the number of group sessions. I'd revised the Syllabus in depth, read Mountain Training's handbook back to back and even the guide for trainers and assessors. I had also dragged lots of friends and climbing partners onto the crag/climbing wall to practice various bottom ropes, abseil rescues etc. In addition I had shadowed local providers operating so while I felt well prepared, I was still nervous on the assessment weekend.

Phil

Preparation is the key! Mountain Training emphasise that the minimum logged experience is exactly that – a minimum, and making good use of the consolidation period, that time between training and assessment, to develop the skills required is essential. Why would you turn up for an assessment anything less than prepared? Getting in touch with local providers, volunteering for sessions and sharing practice expand your repertoire. In my experience a candidate's performance is always reflected in the quality of their overall logbook. We're not just assessing performance, but experience as well. It's a holistic assessment designed to evaluate a potential leader's abilities and judgement.

DURING

Simon

On our first day we went to Birchen Edge as it was lower and out of the wind – perfect for the personal climbing skills and group bottom/top rope set-ups. First day nerves got the better of me and I made a few errors initially but Phil could see this was down to nerves rather than lack of knowledge. He gave me the benefit of the doubt but ensured to revisit these errors throughout the weekend and most likely in a lot more depth! To me this is the best type of mentor assessor, someone who is firm but fair. In fact the group joked he was our "climbing dad" as he was serious in testing us but a thread of advice and mentoring was integral throughout the assessment.

1. RCI assessment hands day two.
2. Gary Clearly enjoying belaying.
3. Gary Clearly on form leading indoors.
4. Simon cruising a personal lead.

Phil

Assessors should allow for early errors – it's the overall picture on assessment that determines the outcome. The length of assessment allows for revisiting early mistakes (as Simon says – often in more depth) to assert if a pattern is emerging. This isn't designed to catch folk out, but to give them the opportunity to prove they have the skills required.

Simon

The second morning at the climbing wall covered a lot of ground – do not assume that the Rock Climbing Instructor is the Single Pitch Award with a bit of indoor wall stuff thrown in! I was glad I had spent a lot of time with groups on the indoor wall during my consolidation period as I picked up a lot of group management and coaching advice from my local wall's instructors. This paid dividends on the assessment as we went into depth on briefing and managing the group, wall rules, coaching, problem prevention and many other areas. My advice to anyone taking the Rock Climbing Instructor is not to underestimate this part of the syllabus as it's a significant part of the qualification.

The afternoon session on the crag covered group management, the environment and route choice. Group abseils and more top/bottom rope set-ups were included. Phil also took the opportunity to revisit areas that needed confirmation of competency from the previous sessions.

Phil

The indoor element of the Rock Climbing Instructor is expanded beyond the Single Pitch Award. For those who undertook Single Pitch Award training this may mean additional training or development in the areas of teaching, movement skills and indoor problem solving. Personal sport climbing is also included. Shadowing instructors at the local wall will pay dividends, as will getting slick leading on bolts, indoors and out, including threading lower offs safely and efficiently.

AFTER

Simon

I wasn't 100% sure I'd done enough to pass and so when Phil delivered the news that I had I was over the moon. I really felt I had earned it. This assessment was pretty intense and different to the Mountain Leader as you have to be technically spot on 99% of the time. The smallest error can have serious consequences, and it's over a shorter period so it's a different type of challenge to the Mountain Leader assessment where you have a longer period to demonstrate your skills.

Although I felt I had been tested thoroughly I appreciated the additional support and learning as well. If we did something correct and in line with the handbook we would also discuss various other ways of achieving the same outcome but maybe with a more efficient way to get there. I would do something correct and safe but Phil might then ask the reason why I did it… did I understand why I did something one way rather than another?

Phil

The strongest candidates not only carry out techniques and methods safely but they can explain why they do things the way they do… This is reassuring to the assessor and makes the basis of a good instructor. Just copying a technique from training or a book without understanding indicates a lower skill set. It may be that the candidate cannot recognise when they have done something unsafe if the underlying principles are not understood.

EVALUATION

Simon

Needless to say the Rock Climbing Instructor assessment is a challenge but has really set me up for my Rock Climbing Instructor career. Just like my Mountain Leader assessment I wasn't perfect and learned loads, but this is the satisfying thing about Mountain Training assessments. You are expected to be at the right level to pass but it's also a great learning environment. As we said several times during the weekend… every day is a school day!

Phil

Assessments should not only be a check of a candidate's ability, although this is the main aim of course. At the end of the day it's another training event too – there's always things to pick up from each other, and after the best assessments both the candidate and the assessor can reflect on what they have learnt and add to their repertoire as climbing instructors.

Phil Baker is the current Chair of the Association of Mountaineering Instructors and holds the Winter Mountaineering and Climbing Instructor qualification. Phil has been providing SPA and now Rock Climbing Instructor courses since 1996, and is also a Course Director for Hill and Moorland Leader/Mountain Leader courses. A qualified teacher with a degree in Geology, Phil runs a small business offering mountaineering, climbing, caving and technical advice. He has climbed and caved around the world for over 35 years.
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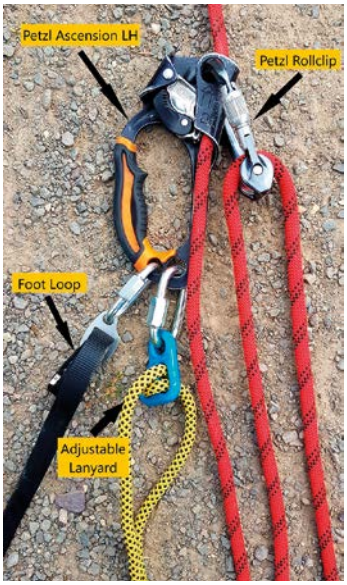
Simon Stokes is a qualified Mountain Leader and Rock Climbing Instructor and member of MTA. Simon is based in the Peak District and runs Peak Outdoors, he is an aspirant member of Edale Mountain Rescue Team and Trainee Winter Mountain Leader. Simon loves everything outdoors, from climbing and mountaineering to mountain biking and fell running. He's climbed and trekked in all mountainous areas in the UK, the Alps, Borneo and the Himalayas.



MAIN PHOTO Katie Mackay self lining along side client on *The Slab* at Kingussie.
ABOVE RIGHT PHOTOS Self lining set-up.

Self Lining

For many Mountaineering and Climbing Instructors being able to teach lead climbing on trad gear, be it on single or multi-pitch, is a regular part of our work.

The decisions an instructor must make before putting a client on "the sharp end" of the rope cannot be under estimated. You need to be able to make competent assessment of the technical, tactical, physical and psychological skills of both the lead climber and their belayer. Failure to do this, especially at a single pitch venue where the potential for a ground fall is significant, could lead to a serious incident.

When introducing a client to being on "the sharp end" I find it easier to be alongside them on a separate fixed rope – self lining.

Equipment

The instructor needs to be able to ascend and descend a rope efficiently alongside the climber. I use a combination of an ascender and an assisted braking device with handle in the set-up. As you ascend the rope, tie overhand knots in the rope below you to act as a back up in the unlikely event of the rope slipping through both devices.

Ascenders/Jumars

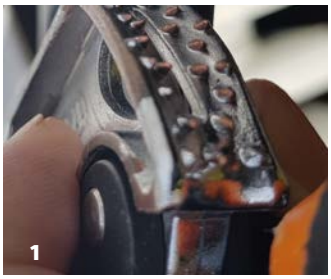
A handled ascender is the easiest to use. If you are right handed, then I find that a left handed ascender is best as I tend to pull down on the rope with my stronger hand (vice-versa for lefties). There are many makes of ascenders on the market and, contrary to popular belief, they are not all similar.

- The spike toothed cam with bite into the rope when loaded and tests have shown that it will shred the sheath of a rope if a force of ≥4kN is applied. 4kN is a lot and it is extremely unlikely that this level of force will be applied to the ascender.
- ISC Hand Ascender is similar to the Petzl ascension but with one key difference. The stainless steel cam has cones rather than spiked teeth (*see photos 1 and 2 overleaf*). It has been shown that these rope clamps will slide down a rope on forces ≥9kN rather than shred the sheath.

WORDS AND PHOTOS BY JIM WALTON

Jim Walton is a Mountaineering and Climbing Instructor and Civil Engineer based out of the Peak District. Husband, father of two, AMI Peak District Rep and runs Jim Walton Mountaineering ***www.jimwaltonmia.com***. He has climbed and trekked in Europe, South America and Antarctica.

Make and Manufacture		Rope Diameter	Cam Style	c/w pulley?	Weight	~Cost (£)
Petzl Ascension		8 – 13mm	Stainless Steel spiked teeth	No	165g	£49.95
Climbing Technology Quick Roll		8 – 13mm	Stainless Steel spiked teeth	Yes	255g	£78.95
Black Diamond Index Ascender		8 – 13mm	Stainless Steel spiked teeth	No	200g	£58.95
ISC Hand Ascender		9 – 13mm	Stainless Steel *Coned* teeth	No	364g	£74.45



1 AND 2 Petzl Spike Tooth Cam (left) and ISC Cone Cam on (right).

Make and Manufacture		Rope Diameter	Cam Style	Working Strength	Lock-able	Weight	~Cost (£)
Petzl Gri-Gri 2		9.0 – 11mm	Partially external	80kg	No	170g	£55
Edelrid Eddy		9.0 – 11.0mm	Internal	80kg	No	360g	£94
Camp Druid Pro		10.0 – 11mm	Internal	200kg	No	280g	£125
Petzl Rig (2018)		10.0 – 11.5mm	Internal	200kg	Yes	400g	£96
CT Sparrow 200		10.5 – 11.0mm	Internal	210kg	Yes	529g	£120
ISC D4 Descender		10.5 – 11.5mm	Internal	240kg	Yes	678g	£138

Assisted Braking Devices

The standard devices used by instructors are the listed in the table above.

My personal preference is for the Petzl Rig due to weight, working strength and ease of use.

Positioning and Technique

- The belayer needs to be able to lead belay and hold a fall, minimising rope out and with generally sound awareness.
- Choose a route that has ample protection and that is an appropriate level of difficulty for the climber.
- Position the self-lining rope so that it and you don't interfere with the lead climber but so you can easily manoeuvre close by to inspect placements etc.
- Re-belay the rope in a few places if the route weaves around.
- Arrange the rope so it's not running over sharp edges or around loose blocks. Use rope protectors/carpet etc.
- Carry some extenders, wires and cams with you. Your client my drop their rack of wires or might have a "moment" which may require you to place some key placements for them.

Personally, I tend not to talk much to my client as they are leading. I will already have assessed the clients Technical, Tactical, Physical and Psychological skills (TTPP) during the day and have considered them competent to lead. I don't want to "command" them up the climb, I want them to be an independent climber – therefore wittering in their ear the whole way up the climb won't help in the long term. All that will happen is that they will come to rely on me to inspect their placements and their own decision-making skills will decrease. What will happen when I'm not there?

On occasion, especially at the start of the pitch if there is a risk of ground fall or fall onto the belay, then I may position myself below the climber as a form of a spot.

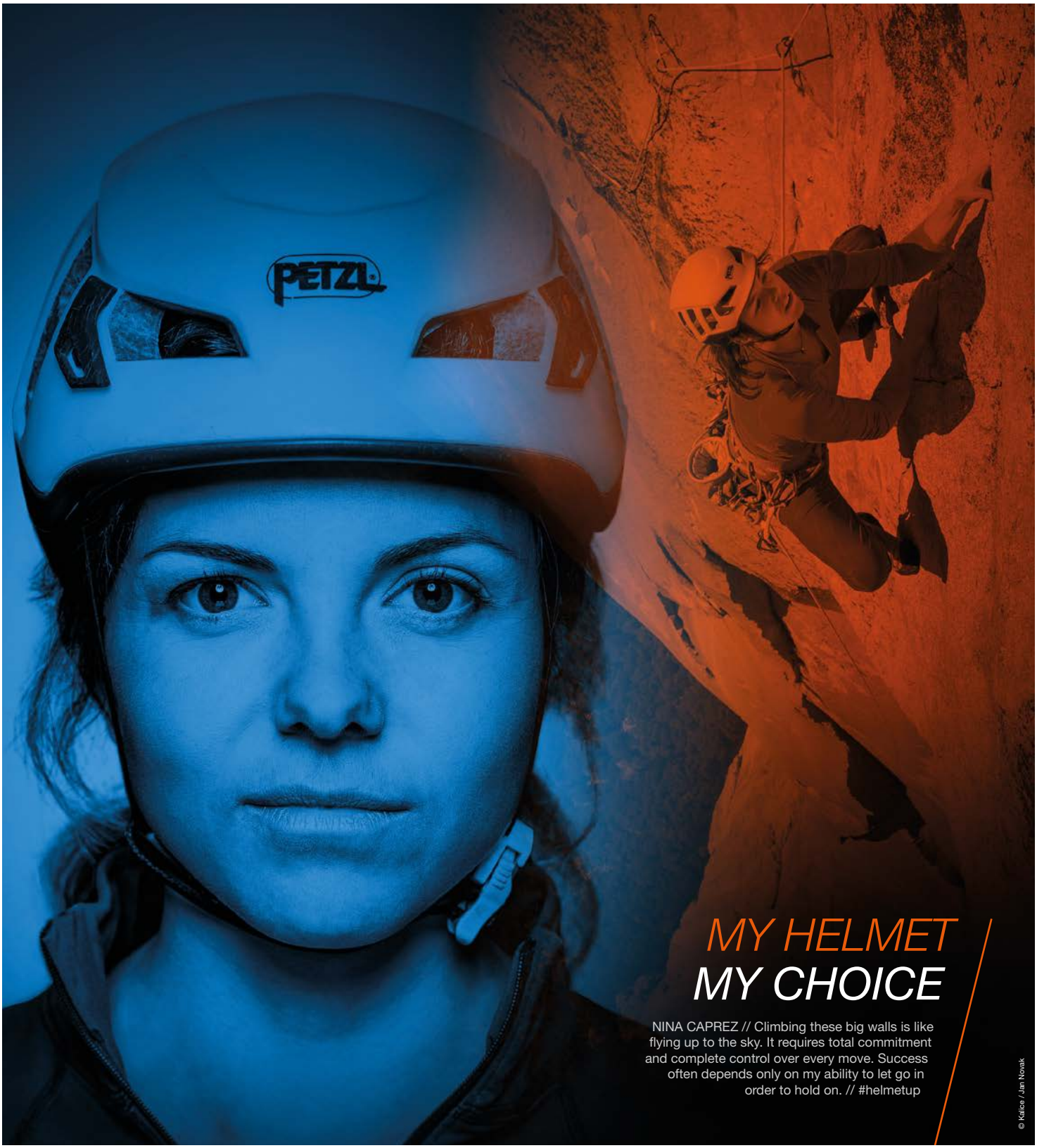
Before the lead climber sets off, I do have a serious conversation with them and the belayer. I explain that I can't catch them if they take an unexpected fall. I can check their placements but the belayer has to hold the fall.

What can you do if a fall looks likely to occur? You need to take it as direct feedback that if a fall is likely to occur then you, as the Instructor, have selected the wrong route for the client to be leading.

Here are some options available to you.

- Ensure the belayer is ready.
- If time allows place some protection above the climber and either get them to clip the rope in or you clip the rope in.
- Unclip the lanyard from your harness and clip it to the client's rope. Push the ascender up the fixed rope and adjust the lanyard to suit. The ascender has just become a running belay. If required, the leader can then be lowered off the ascender back to the ground without you being in the system. Some people are concerned if the client falls onto the ascender then it will shred the sheath. It is very unlikely that you will generate a ≥4kN force on the ascender if you use the system detailed above.

Self-lining is a good option for teaching leading but can become a coping mechanism for clients if over used. It enables the instructor to support a new climber up the route. The climber should feel safe because the instructor is with them and it should be used as a fun introduction to the achievement of leading.



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ABOVE Brown clover.

The second in the three-part series exploring flower families

Who's in your family tree?

WORDS AND PHOTOS BY JIM LANGLEY

If you have ever noticed a pea pod in your garden then you'll be able to recognise any member of the Pea family. The family has evolved into one of the largest in the plant world with around 13,000 known species, which vary from low-lying clovers to climbing beans and charismatic savannah Acacia trees.

They are an important economic group forming some very significant food plants such as soybean, chickpea, alfalfa, peanut, carob and liquorice as well as providing important fodder, timber and oil products too. Common to all members of the family is a one-chambered pod, called a legume. Its tap-roots also bear nodules that house a special group of nitrogen-fixing bacteria. These bacteria are known as rhizobia and are capable of 'fixing' nitrogen from the air and turning it into useable forms of nitrogen such as ammonia and nitrates. This relationship is a mutually beneficial, symbiotic relationship in which the plants provide carbohydrates, obtained from photosynthesis, in exchange for fixed nitrogen. Due to this relationship legumes are able to grow in relatively poor soils and gain an advantage over other plants unable to grow in such conditions.

Leaves and branches

The leaves are generally in one of two forms: simple or compound. Simple leaves are a single leaf that is never divided into smaller leaflets. Compound leaves, such as pinnate leaves, are divided into leaflets arising on both sides of the midrib. The Pea family also has some divided into three leaflets known as trifoliate which is a key characteristic of clovers. Some leaves have become specialised at forming spirally-arranged tendrils used by climbing plants for support.

Flowers

The flowers of the Pea family are unique and fairly distinctive. They are described as being irregular in shape with a 'bilateral' symmetry like that of a butterfly or open book. The illustration opposite shows the flower design with parts including standard, keel and wing. The flowers are all hermaphrodite containing both male and female parts and are often colourful attracting insect pollinators such as bees and butterflies.

Fruits

The fruits are also very distinctive. If you have ever shredded peas from a pod then you will be familiar with the fruit and pod design. The pods always split along the seams which connect the two sides. They generally burst open when dry to scatter the developed seed. Be warned though, while some species are edible, others are poisonous (boiling often denatures the toxins in beans).


1


2


3


4


5


6

History

The first beans began to be cultivated over 6000 years ago placing them among the world's first domesticated plants. Beans are among the easiest plants to grow and are considered an excellent source of protein though often being associated with poverty and seen as a 'poor man's meat'. Explorers brought dried peas to America in the 17th century at the same time traders introduced sugar peas to China and Japan. Peas and beans have been employed in a variety of activities other than cooking. Dried beans served as ballots in ancient Greek and Roman tradition: white beans for acceptance, black beans for rejection of a motion. Native Americans developed a catalogue of medical applications for different beans ranging from skincare to snake bites. The most widely-used beans include French beans, kidney beans, runner beans and string beans. When combined with tomato sauce any of these beans can be cooked together to create the classic American dish, baked beans! Pease pudding is a traditional British dish, often eaten with salt pork, which dates back to the Middle Ages. Puddings in those days were a mixture of split green peas and various chopped ingredients using suet as a binder. This mixture was gathered in a linen pudding cloth and cooked in a boiling cauldron that hung over a fire.

Below are a few of the many plants in this group that are common in the UK and across the European continent (and one from east Africa!).

Liquorice Milk-vetch *(Astragalus glycyphyllos)*

This plant can be found in the grasslands and hedges of the UK and across Europe. It is cultivated as a fodder crop, and although its leaves have a sweet, slightly liquorice taste, the plant commercially used to produce liquorice, Sweet liquorice, is actually native to the Middle East.

Red Clover *(Trifolium pratense)*

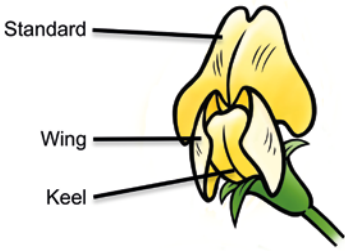
A common plant of all grassy areas from lawns to meadows. It is sown as a fodder crop and is used in crop-rotation systems because of its ability to enrich soils with nitrogen. It is used in herbal medicine to treat respiratory and skin disorders and also for symptoms of the menopause.

Mountain Sainfoin *(Onobrychis montana)*

A colourful plant found in grassy and rocky places. Its leaves are a rich pink with purplish veins and its fruits develop into rounded pods. Sainfoin has fodder value equal to alfalfa and is a preferred food of cows.

Bird's-foot Trefoil *(Lotus corniculatus)*

Locally known as 'eggs & bacon' for its yellow flowers and reddish buds this is a widespread and common plant. It can be found across grassy sand dunes and heathlands. The seed pods curl as they dry resembling claws earning them the name 'Grannies toenails'!



1. Laburnum. 2. Liquorice milk-vetch. 3. Red clover. 4. Mountain Sainfoin. 5. Birds foot trefoil. 6. Alpine milk-vetch.
ILLUSTRATION. Legume flower showing its bilateral symmetry.

7. Umbrella Thorn. 8. Mountain milk-vetch. 9. Gorse. 10. Lupin.

Jim Langley holds the International Mountain Leader qualification and lives in North Wales. He runs Nature's Work which is dedicated to developing learning and understanding about the natural world through a range of training courses. Jim also provides CPD workshops across the UK and in the Alps on the environment and alpine flowers.
www.natureswork.co.uk

Alpine Milk-vetch *(Astragalus alpinus)*

This is a very hardy plant found across Arctic and alpine environments on scree and other rocky ground. As such it is very rare in the UK being located in just four sites in the tundra environment of the Scottish Highlands.

Some species of Milk-vetch are poisonous to domestic cattle but other species such as Arctic hare and Reindeer do graze on it.

Brown Clover *(Trifolium badium)*

This plant is common across the continent but absent from the British Isles. It has a spreading habit and can often form a low-lying carpet in open meadows. The golden yellow flowers turn chestnut-brown as the seeds develop.

European Gorse *(Ulex europaeus)*

This robust shrub is a common sight on coastal grasslands and dry moorland as well as in towns and gardens. It flowers in early spring through the summer whereas it close relative, the Western Gorse, flowers in the autumn. It has needle-like leaves and its yellow flowers give a sweet coconut scent. Its uses include fuel for bread ovens and a yellow dye was extracted from the flowers.

Laburnum *(Laburnum anagyroides)*

A small tree which was introduced to the UK in the 16th century. It is planted as an ornamental tree in parks and gardens and produces large, drooping bunches of bright, yellow flowers. The flowers develop in May and June and give rise to its common name 'Golden rain'. All parts of the tree are extremely poisonous.

Garden Lupin *(Lupinus polyphyllus)*

Originating in North America it has been widely introduced around the world as an ornamental plant. Its ability to grow in poor soil and spread rapidly has seen it outcompete native plants, and become a nuisance in many places. In New Zealand for instance it is classified as an invasive species.

Mountain Milk-vetch *(Oxytropis jacquinii)*

A plant of meadows and rocky places, especially on Limestone. It can be found across the Alps and the Jura mountains. The name Oxytropis comes from 'oxys' meaning sharp and 'tropis' meaning tip and refers to the narrow keel flower ending in a small point.

Umbrella Thorn *(Acacia tortilis)*

This tree is very common across east Africa and grows to 18m. Due to its ability to withstand a wide range of soil moisture conditions it can be found growing from 600m – 2000m altitude. It is an excellent fuel and is used in the tanning industry due to the acids in its bark, and also in live fencing where its dense and long thorns help to keep predators away from livestock.

The sixteenth in a series of articles on wildlife

THE RED KITE

ABOVE Red kite. © BTO/John Harding.

When I was very young my family went on a pilgrimage to Wales to see if we could spot one of the last few remaining Red Kites in Britain. Lost from Scotland since the late 19th Century and with only five breeding pairs hanging on in Wales since the beginning of the 20th century, perhaps my parents feared this beautiful bird would soon be lost from our isle for good.

My heart soars every time I see one of these huge birds gliding through the sky. I see them more than I could ever have imagined: from the A9, from the office window, over my garden and often over the moorland I cross on my way to the mountains. The story of their hard-won recovery reminds us how apparently impossible conservation challenges can be overcome. After decades of nest protection schemes, a reintroduction programme began in 1989 with successful breeding occurring three years later in England and Scotland. Today, there are now 1600 pairs in Britain.

Despite this recovery they're still not as numerous as they have been in the past when they provided an essential rubbish clearing service in our towns and cities leading to statutory protection in London. They feature in many of Shakespeare's works, their peculiar habit of stealing small garments earned them a mention in The Winter's Tale: "*When the Kite builds, look to lesser linen.*"

Kites began to be intensively persecuted when game bird management increased. Slow and low flyers were all too easy to shoot and being carrion feeders makes them particularly vulnerable to poisoning. The mass poisoning on the Black Isle in 2014 shockingly demonstrated how this illegal activity continues.

So…

Q What can *you* do for the Red Kite?
A Recognise, celebrate and record them via *BirdTrack* (for more information see the BTO website: *www.BTO.org*).
Q What can the Red Kite do for *you*?
A Illustrate how, through concerted conservation effort, species can be brought back from the brink. Where there's a will there's a way.

Sue Haysom is a Professional Ecologist, Mountain Leader and member of MTA, Sue is the owner of Greyhen Adventures.

WORDS BY SUE HAYSOM

Vital Statistics

Length: 63cm.
Wing-span: 185cm.
Weight: Male 1000g, Female 1.2kg.
Habitat: Pasture, open woodland, forest, rough grassland, moorland.
Food: Scavenger on carrion, scraps, will take small live prey including birds, insects and worms and steal food from other birds.
Voice: Shrill mewing (like a buzzard but higher, weaker and more rapid) and whistling.

RISK MANAGEMENT CONSIDERATIONS FOR PLANNING OVERSEAS EXPEDITIONS AND ADVENTURES

ADVENTURE TRAVEL

WORDS BY MATTHEW DAVIES

The first part of this article in the Spring edition considered some organisational protective risk management aspects. What are (some of) the other key considerations in terms of stopping things going wrong in the first place?

Standards/Guidance

Where can we look to see what we should be doing? Helpfully, some very learned people have worked to input several million pounds worth of consultancy hours into what is perceived as 'good practice'.

Have a look at:

British Standard 8848

8848 – The height of Everest in metres, and the standard for overseas activities, fieldwork, expeditions and adventurous activities. This is now in its second incarnation and likely soon to be in its third. This very helpful document sets out what you should do to plan, deliver and review expeditions and other activities to which the standard applies. It's not cheap so my tip is to order it via your library. A note to the reader by way of transparency – I am on the drafting committee for this document. The document is internationally considered to be the framework for 'good practice'. It gets waved around in court cases and inquests in the UK and overseas.

Off-Site Safety Management course (OSSM), certified by the Royal Geographical Society

A 2-day course, originally an OCR Level 3 course with an exam but now owned by the Royal Geographical Society. Instructors cover the core content but can tailor to clients. The course informed BS:8848 and is a useful tool for working towards BS:8848 compliance. In simple terms, you don't know what you don't know. Attending the OSSM course means you will know what you don't know and will go away with solutions or at least other areas for research and study. Content covers the natural planning, delivery and review stages of off-site activities – with lots of case studies.

Also have a look at:

- Expedition Provider's Association – Learning Outside the Classroom badge
- Outdoor Education Advisers Panel National Guidance
- AdventureMark
- ISO 21101 – Adventure Tourism: Safety Management System Requirements
- ISO 21103 – Information for participants
- ISO 20012/TR – Leader Competence
- ISO 31000: 2018 – Risk Management Standard

Risk Assessment

All activities need a risk assessment. We have all done one – when we cross the road. The UK Health and Safety Executive (HSE) website provides significant assistance in one method of risk assessment – the 'five steps to risk assessment' method. Identify the hazards, who may be harmed and how, evaluate the risks and decide on precautions, record your significant findings, review your risk assessments regularly and evaluate if necessary.

If you are responsible for the safety of others, you should be looking at training to ensure you're competent in undertaking risk assessments – and being able to evidence that.

It is also imperative you record "near misses" to inform your consideration of risk assessments. This is not a treatise in risk assessment but there are often near misses before actual incidents. Often the warnings given by near misses, from which lessons should have been learned and rectifying action undertaken, are overlooked or ignored. Identifying themes will assist you in putting in place control measures.

"Most man-made disasters and violent conflicts are preceded by incubation periods during which policy makers misinterpret, are ignorant of, or flat-out ignore repeated indications of impending danger."

(Boin & t'Hart, 2003:547)

For the travel sector, most deaths are caused by road traffic collisions followed by incidents involving water. Falling from balconies (often under the influence of drugs and/or alcohol) and other unusual fates also feature. Deaths from actual adventurous activities, rather than travel or accommodation related to it are thankfully rare.

Research your field. Look at the Royal Geographical Society (RGS) Expedition Handbook and the Oxford Handbook of Expedition and Wilderness Medicine for environment-specific hazards. Consult with those who have been there before. The Royal Geographical Society is a wealth of information – it houses thousands of expedition reports from those who have been to locations in the past.

Get down to the RGS Annual Explore Conference in London (in November) for workshops, lectures and discussion groups on issues such as risk, environment- specific workshops and focus groups.

Seek out commercial providers that can run courses for your expedition teams. Ask lots of questions before choosing.

Larger, more complex or established organisations tend to use more sophisticated risk assessment methodology than the HSE '5 steps' method when undertaking travel risk assessments. Standards in the sector are developing in line with the current, topical focus on organisational Duty of Care for businesses sending staff overseas. Thorough organisations will have staff with higher levels of training in the travel risk management field.

Risk assessments should cover all elements of the venture, from travel to accommodation, and should include aspects such as fire safety, carbon monoxide, security, food, water, health aspects, activities, third party providers and more. It's a massive subject and needs several days to do it justice.

Health Considerations

Check suitable health information sources well before you go, such as the the National Travel Health Network and Centre (NaTHNaC) 'Travel Health Pro' website. This is the site travel health professionals will very often consult. It's a wealth of up-to-date information on vaccinations, travel health risk assessments and more. Well recommended.

Screening expedition participants for illnesses and injuries well before they depart (with a contractual obligation in place for participants to notify you of newly-developed illnesses and injuries prior to departure) is an important risk management tool. Forewarned is forearmed.

Secure suitable first aid training from people who are current, qualified and experienced and, depending on what you are doing, top cover from a doctor to allow use of prescription-only medications (an essay in its own right). Telemedicine options are available.

A note of caution – guidance has been issued for the appropriate levels of training for 'expedition medics' (including expedition leaders who are non-medics, operating in a first aid or 'exped medic' role) – even for low-risk activities in low-risk countries (e.g. trekking in Morocco). A nationally-recognised level D course on the Pre-Hospital Emergency Medical matrix, plus expedition-related additional content is recommended (most level D courses e.g. QNUK First Responder or Qualsafe FREC 3 take 4-5 days to deliver) – so a level D course covering the additional expedition content is likely to take 6-7 days, hence the increasing popularity of Remote Area/Wilderness First Responder courses).

Some activities may mitigate towards a medical professional (with suitable remote area training and experience) accompanying you (budget permitting). Risk Assessment is key.

Destination Intelligence

The Foreign & Commonwealth Office (FCO) website provides useful information regarding overseas destinations; however, its guidance is tempered by wider considerations such as political and socio-economic. Also look at the Australian, Canadian and US information available for a balanced perspective. Various commercial providers can produce bespoke reports and ongoing updates for your destination. Travel intelligence apps are also useful in keeping you up-to-date with developments while in the country.

Environment-Specific Training

Source environment-specific training before you go to challenging areas. This will assist you with securing the wisdom of those who have been there before, thrived (or not) and come out of the environment much the wiser, knowing what works and what doesn't – as well as what kit is worth buying.

The more remote the terrain and the harsher the environment, the greater the need to invest in the wisdom of the more experienced.

This could involve desert/bush, arctic, altitude, jungle, aquatic and other considerations.

Each environment has its own risk factors – from heat to water risks. Be prepared. You don't know what you don't know. Find out, don't be a headline!

Travel Safety and Security

It is worth investing in travel safety training or at least a book on the subject. Proper Prior Planning Prevents Poor Performance, as the saying goes. Be aware of current scams and problems in your destination country.

Communications

Mobile phones have excellent reach but some areas still don't have coverage. Consider satellite phones (cheaper to hire than buy), two-way (i.e. satellite communication and texting) trackers such as delorme/garmin inreach. Organisations and individuals have to move with the technology. I have certainly dealt with incidents where adventure providers have been criticised for not keeping up with levels of communications that were considered good practice in the location where the incident occurred.

Various travel apps allow you to check in via email or text with friends or family at times you designate in your comms procedure – sending a map depicting your location.

With technology comes power considerations. Powerbanks and solar panels have merit depending on environment.

Conclusion

This article is intended to be an accessible starting point. Whether you are a commercial provider or organising an expedition with friends, plan thoroughly – including kit, destination, people, activities. Prepare plans for if it all goes wrong, take out insurance, seek advice from experts. This shouldn't be daunting. It's one of the most interesting and fun parts. Training forms part of your team building – and evidences your Duty of Care compliance. Enjoy. Go forth. Have Safe Travels. If daunted, there are some well-regarded organisations out there that deliver appropriate, up-to-date training and support in these fields.

R²Ri Remote Area Risk International

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PRACTICAL TIPS FOR EFFICIENT STOVE AND FUEL USE

WORDS AND PHOTOS BY SUSIE AMANN AND STEVE KREMER

In the previous article in the spring edition, we looked at stove choices for high and cold expeditions. Here, in part 2, we focus on practical tips for efficient stove use, types of fuel, and how to estimate how much fuel you will need.

Experience, and detailed discussions with explorers, adventurers, mountaineers and stove makers, show us that many different factors can have an effect on stove performance. To keep things easy to remember we have boiled these down to "Six Practical Tips for Stove Efficiency". Any one of these will improve performance, but taken together, they can make a massive difference to how much fuel you are likely to need.

Different types of fuel

Expedition planning includes knowing what type of fuel will be available at your starting point. This in turn influences the type and usage of your stove system.

There are many fuels to choose from, but as only certain fuels may be available in specific locations, it helps to understand the characteristics of each so that you can plan for handling, usage and stove maintenance.

Figure 2 summarises the advantages, disadvantages and worldwide availability of different types of fuel. We have included a measure of energy density of each fuel in kilocalories per gram of fuel (kcal/gram) to indicate the relative heating power of each fuel.

Estimating your fuel needs

In the context of expedition planning, stove efficiency relates to the amount of fuel required to boil a given volume of water. If you know how much water you need to boil and snow to melt, you can work backwards to calculate the amount of fuel you need. But there are numerous variables which complicate the calculation. For example, a canister-top stove in a 5 mph wind can use 3 times more fuel to boil a litre of water compared to when there is no wind. Temperature, altitude, type of stove, fuel, pot, windshield and stove usage, all impact stove efficiency by a considerable amount.

Look for Good Simmer Control

In our experience, the best stoves for fuel efficiency are generally those which have fine simmer control, as this allows the flame to be regulated down to a level which minimises heat escaping into the surrounding air. Stoves which boil water very fast with flames licking up the side of the pot, will always be less efficient.

Gas for shorter trips

In terms of absolute efficiency, gas stoves generally out-perform liquid fuel stoves because liquid

Six practical tips for stove efficiency

Stove	Pot	Windshield
		
1 Know your stove: Practice lighting, running and cleaning your stove before your trip. Clean it regularly. Clogged nozzles, generator tubes and fuel lines greatly reduce stove efficiency and power output. Make sure connections are tight and are not leaking fuel. **2 Know your flame:** Make sure you know what a normal efficient flame looks and sounds like. Be alert to flame abnormalities such as orange/yellow, flickering, strange noises or smells. Change position of windshield, pot, and adjust regulator. If it doesn't return to normal, maintenance may be required.	**3 Keep a lid on it:** Although it is tempting to open the pot, keep the lid on as much as possible as this greatly improves heat retention. **4 Heat Exchanger Pots:** Greatly improve performance at low to medium altitude. **5 Don't over-heat:** Heat loss from your system equals wasted fuel. If flames are licking up the sides of the pot, or if you can feel great wafts of heat coming from your stove setup, turn down your stove to conserve fuel.	**6 Keep out the wind:** A 5 mph wind can increase the amount of fuel needed to boil a litre of water by a factor of three. For liquid fuel and remote canister stoves, a windshield greatly improves efficiency. Windshields cannot be used with canister-top stoves, so choose a sheltered spot. But always ensure adequate ventilation.

FIGURE 1

Know your fuels

Fuel Types (energy density kcal/g)	Advantages	Disadvantages	Availability
Gas Canisters (Iso-butane propane) (10.9)	• Widely available • Safe & clean option for short alpine ascents & supported expeditions • Easiest to use	• Steel gas canisters are heavy and bulky for longer expeditions	• Widely available in advanced economies • Less so in developing world
Liquid Fuels			
Unleaded Petrol (10.4)	• Cheap & widely available • Can be used in many multi-fuel stoves	• Highly flammable & dangerous to use in an enclosed space • Fuel nozzle & other parts require regular cleaning	• Worldwide • Quality varies
Paraffin (10.3)	• Cheap & widely available (not as common as petrol) • Less volatile/safer than petrol	• Stove requires priming before full ignition • Regular fuel nozzle cleaning required	• Worldwide • Especially polar regions & Greater Ranges
Diesel (10.2)	• Cheap & widely available • Similar characteristics to paraffin	• Difficult to ignite in pressure stove-priming required • Regular fuel nozzle & generator pipe cleaning required	• Worldwide • From petrol/gas stations, local stores and outfitters
White Gasoline (e.g. Coleman Fuel) (10.1)	• Clean burning fuel ensures that stove requires minimal maintenance/cleaning	• Expensive or hard to find outside North America • Highly flammable – handle with care	• Widely available & cheap in North America • Rare/expensive in developing world

FIGURE 2

Typical daily fuel requirements for snow melting/hydration [per person/per day]*	Plentiful Fuel Supply (e.g. with logistics support)	Limited Supply (carry all you own fuel)
Gas Canisters (Isobutane-propane mix) Gas stove with Integral Heat Exchanger Pot	115g e.g. Sherpa supported ascent with MSR Reactor stoves	60-70g e.g. Light weight ski-mountaineering with mix of MSR and Primus stoves
Liquid Fuel (White gasoline or Paraffin) Multifuel stove	500ml e.g. "Old school" snow melting – setup allow heat to escape to warm tent or cabin	150ml e.g. Customised MSR XGK-SE, windshield & HE pot – minimal wasted heat

* Indicative values from actual expeditions: Always check with experts familiar with local conditions.

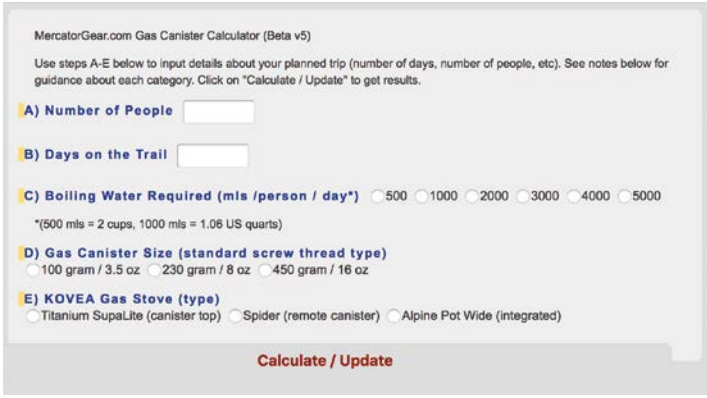

FIGURE 3

iso-butane/propane gas has a high energy density (in kcal/gram) than liquid fuels (see table above). The best results come from:

- Stoves with integrated heat exchanger pots, can boil a litre of water on less than 8g of fuel. Those with radiant burners such as MSR Reactor, are optimised for rapid boiling over efficiency, so may use more gas.
- Remote canister gas stoves, if set up correctly with a good windshield and pot, can be as efficient as integrated systems and have the added advantage of being more stable and versatile.

Liquid fuel for longer trips or where gas is hard to find

Liquid fuel stoves are heavier overall, as they require fuel bottle and pump. They vary in efficiency from 9 to 15 grams of fuel for a litre boil. But over time, these can work out lighter than taking a gas stove and a large number of gas canisters. As liquid fuels are available in bulk, and pretty much everywhere on the planet, liquid fuels are the preferred option for larger, longer and more challenging expeditions.

Snow melting benchmarks

Typically, the hydration requirements of an expedition member ranges from 3.5 to 5 litres of water per day depending on the level of activity. The fuel needed to melt snow is difficult to approximate as snow itself varies so much. In addition, if there is a plentiful fuel supply, snow melting is often conducted at less than maximum efficiency. Where expeditions need to carry all their own fuel, much greater efforts are made to get the maximum melting and heating efficiency out of the fuel. Some real-life benchmarks for daily fuel needs are summarised below.

In *Figure 3*, the weights are for fuel only, and do not include the weight of gas canisters, fuel bottles and stoves.

Where snow melting is not required, it is also possible to use the Gas Canister Calculator developed by MercatorGear.com. This allows expedition planners to determine the optimum combination of stove and gas canisters for a specific expedition based on number of people, number of days, and boiling water required per person per day. The Calculator can also show total weight of stove and gas canisters at the start and end of the expedition based on three different types of stove (canister-top, integrated, and remote canister). The data is based on KOVEA brand stoves, however, the efficiency ratings are similar to those of other brands for any given type. It is therefore possible to work out if you can save weight by using a lighter but less efficient canister-top stove, or a more efficient (but heavier) integrated system.

Nature has a habit of throwing a lot of challenging conditions at us. But by knowing your stove, understanding your fuel, and knowing how to set up an efficient system, you can save a lot of weight and time, and maximise the chance of achieving your goals.

http://mercatorgear.com/index.php/canister-calculator

With thanks to: Ben Saunders, Andy Headings, Dr. Mark Hines, Andy Kirkpatrick, Ross Gilmore and David Hamilton.

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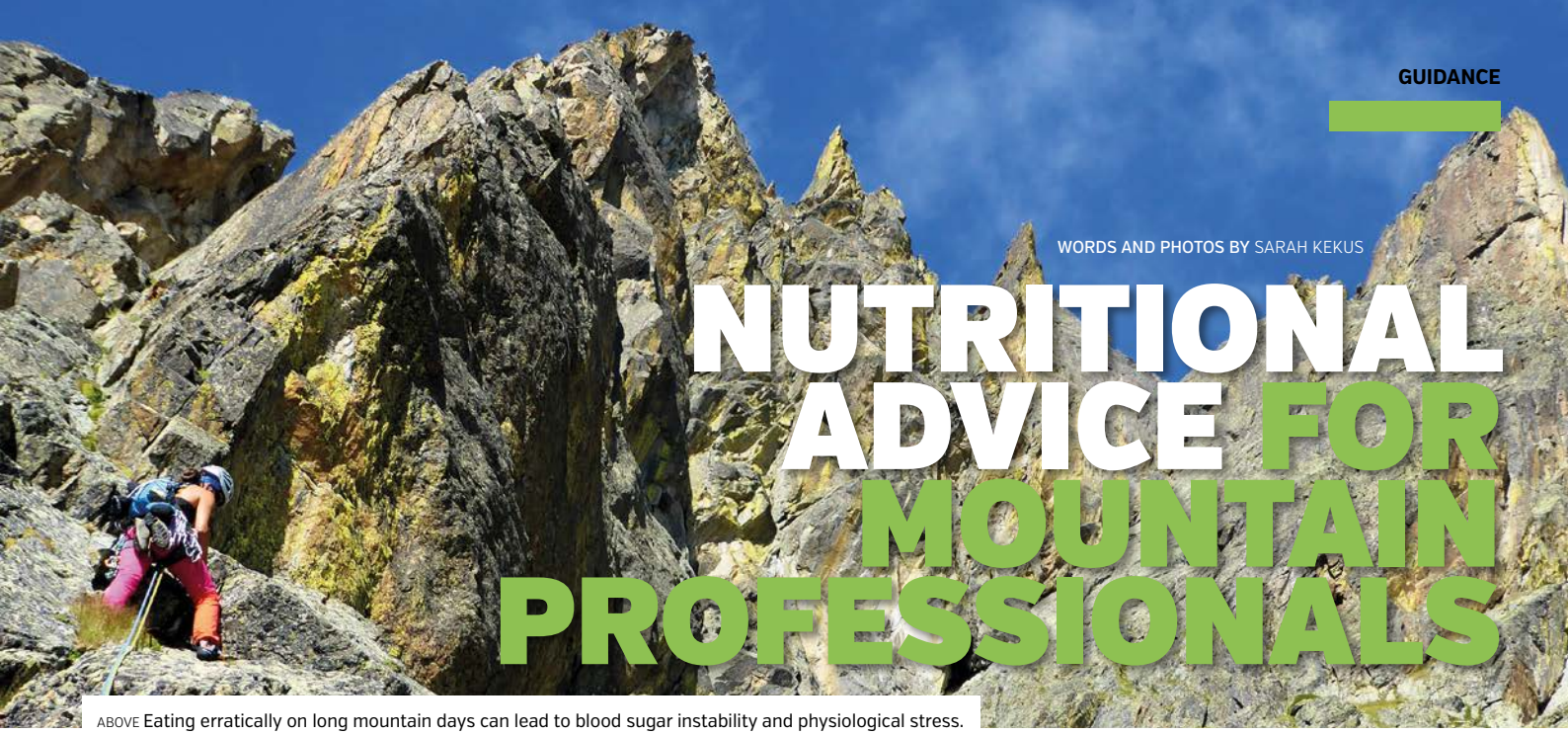

WORDS AND PHOTOS BY SARAH KEKUS

NUTRITIONAL ADVICE FOR MOUNTAIN PROFESSIONALS

ABOVE Eating erratically on long mountain days can lead to blood sugar instability and physiological stress.

Mountain professionals must perform like Olympic athletes yet who do you know with a coach, personal nutritionist and sports therapist constantly in attendance? No one!

After spending their days looking after clients, guides, instructors and leaders must be self-reliant when it comes to taking care of themselves. But, when working days are often long, tough and dangerous, self-care can easily get lost along the way. So, once the mountain dangers have been navigated for another day, dinner may get relegated to a snatched beer and a plate of pasta whilst contemplating weather, routes and other conundrums for the following day.

Beyond the obvious occupational hazards, mountain professionals face a number of dietary and lifestyle challenges but, the good news is, there is so much we can do to mitigate these risks.

Unstable Blood Sugar

Unless you've headed up to a hut in time for a "slap up" lunch or you are doing an easier skills day, food eaten between breakfast and dinner must often be rapidly crammed down, perhaps even whilst belaying! So after a long day you'll likely have some "catching up" to do! But, leaving long gaps between meals and then "back-end loading" calories in the evening can cause massive disruption to blood sugar levels. In particular, eating a large, carbohydrate-dense meal, will cause a surge in blood glucose and stimulate an outpouring of insulin. Insulin promotes the conversion of glucose to glycogen and increases the uptake of this glycogen by our muscles and liver, in turn lowering blood sugar; it can do this so efficiently that blood sugar levels can quickly drop too low again, triggering a cycle of "peaks and troughs". Signs of low blood sugar include a thumping head, exhaustion and irritability although it's easy to mistake these for effects of working long hours in the mountains! Similarly high blood sugar signs, such as insatiable thirst, more frequent need to urinate and a dry mouth, can also be blamed on the mountain environment but notice how these symptoms often appear after a heavy evening meal.

Insulin Resistance & *Metabolic Syndrome

Left unmanaged, blood sugar instability can lead to chronically elevated levels of circulating insulin and, over time, the liver and muscles become resistant to the effects of insulin. Exercise can counter this effect but, as insulin resistance is a step in the direction of type 2 diabetes, improving blood sugar stability is always a priority when I work with athletes – it is not just "couch potatoes" who are at risk of *Metabolic Syndrome; successful Olympic rower, Steve Redgrave developed type 2 diabetes!

Physiological Stress & Burn Out!

Chronic blood sugar instability causes a physical stress response independent of the stresses you may experience day-to-day in the mountains. For optimum performance and brain function, blood sugar needs to remain stable; a drop in blood sugar will trigger an outpouring of stress hormones as the body believes it is in danger. Eating a heavy meal late in the evening can cause a drop in blood sugar during the night; your heart rate rises and cortisol mobilises sugar stored in the liver to restore levels of circulating glucose, leaving you hot and restless. Most of this released glucose is not needed whilst you sleep, so it's converted to fat and dumped, typically around your middle as fat – a distribution pattern known as central adiposity.

Physiological stress can be compounded by the physical stresses of arduous mountain days and the emotional stresses of being constantly vigilant for danger. All this chronic stress brings a cascade of responses affecting the immune system, thyroid, sex hormones, digestion and, ultimately, performance. We are well designed for coping with short-term stress but chronic stress brings some unhelpful physiological adaptions and, without intervention, can lead to complete "burn out".

Management Strategies

- Eat regularly and ensure breakfasts and dinners are packed with nutrients
- Avoid sugary foods and limit high glycaemic index (GI) foods
- Moderate your fruit intake – no more than 2 pieces per day
- Include protein and healthy fats with every meal (including hill food)
- Avoid eating heavy meals late in the evening
- Limit caffeine, especially after mid-afternoon
- Prioritise sleep whenever possible!

Nutrient Deficiencies

Erratic eating can also lead to long-term nutrient deficiencies. Fuelling up on carb-dense foods may meet calorie needs but leave

*Metabolic syndrome (MS) is a collection of health risk factors that include central adiposity, insulin resistance, hypertension and high cholesterol. This cluster of risk factors is linked to an increased risk of developing type 2 diabetes and cardiovascular disease.

1

2

1. Re-think your mountain "fuel" - incorporate real, whole foods whenever possible. 2. Fish is a good source of protein and omega-3 fatty acids.

you lacking vital nutrients. Poor muscle recovery, muscle weakness and injuries are all signs that you are getting insufficient protein. A diet lacking essential fats can lead to dry skin, low mood, anxiety and joint pain. Signs of vitamin and mineral deficiencies are wide-ranging and include lowered immunity, frequent muscle cramps, poor co-ordination and slow wound healing. And, a lack of overall calories will cause your body to break-down muscle tissue for fuel – aargh! So, whilst beer and pizza may seem like the perfect way to relax after a busy week, your "down time" is your chance to pack in the nutrients and make every meal count.

Management Strategies

- Eat more vegetables e.g. spinach, broccoli, green beans, kale, courgette, asparagus
- Add berry fruits to breakfast e.g. blueberries, raspberries
- Eat 2-3 portions of oily fish each week e.g. salmon, mackerel, sardines, cod liver
- Increase plant-based healthy fats e.g. avocado, seeds & nuts, olive oil and nut butters
- Increase intake of first class protein (preferably organic) e.g. eggs, chicken, turkey, venison
- Incorporate more plant-based proteins e.g. chickpeas, lentils, quinoa, nuts & seeds
- Consider supplementation *(see summary)*

Dehydration & Alcohol

We all know that altitude and sweaty work increase hydration needs but often it's impossible to carry enough. And, working in the "holiday business" means that social drinking can be more frequent; alcohol causes further dehydration, blood sugar destabilisation and nutrient depletion as well as contributing to inflammation, sleep disruption and cognitive impairment. So, sticking to non-alcoholic drinks in the bar afterwards offers a win-win solution; you can share celebrations with your clients whilst also rehydrating! It is also a great way of demonstrating you care about your long-term health!

Management Strategies

- Drink more water in the morning and evening to compensate for daily dehydration
- Stick to non-alcoholic drinks when out with clients
- Order a jug of boiling water on arrival at huts and make tisanes instead of ordering coffee
- Alongside plain water try drinking tomato juice, coconut water & almond milk
- Consider using protein shakes and or magnesium-rich recovery drinks (just watch for sugar)

Summary

I often remind my clients of the advice airlines give us – "fit your own oxygen mask before you help others"! I think this is relevant advice for Mountain Professionals too; treating yourself more like an Olympic athlete will keep you at the top of your game for longer, working will feel easier and you'll have more energy to "go play" when you have time off!

Useful Nutritional Supplements	Mountain Day Snacks/Food
• Omega 3/Fish Oil Capsule (daily) • Vitamin C (1000mg) (hut days) • Vitamin B complex (daily) • Quality protein powder • Muscle recovery formula – look for one containing Magnesium Glycinate, Malic Acid & Calcium Phosphate (daily through summer months)	• Hard-boiled eggs • Avocado (just take a spork) • Canned cod liver or sardines • Raw walnuts, cashews or almonds • Dark chocolate (85-90%) • Cubes of hard cheese (e.g. Tomme) • Nut butter (use sachets for convenience) • Sachets of protein powder – add to water

Sarah Kekus has an MSc in Nutritional Therapy, is an experienced yoga teacher and holds the Winter Mountaineering and Climbing Instructor qualification. She lives in the Lake District where she runs her business The Health Architect, offering nutritional therapy, lifestyle coaching, yoga classes and retreats. She has a special interest in the effects of endurance exercise on female hormonal health and has completed a Yoga for Sport qualification and now offers functional movement classes specifically for triathletes, runners, cyclists and climbers.
www.thehealtharchitect.co.uk

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MOUNTAIN
EQUIPMENT

WORDS BY MARIANNE AND SAM DAVIES

Developing Skill #2

Information, autonomy and playing in the 'ugly zone'

Becoming Skilful

Like many parents, I owe so much of my learning to my son; Sam. The sheer intensity of my passion and love for him, and the resulting attention I paid to him and his experiences have taught me a lot. Watching him learning and exploring adventure sports was both terrifying and exhilarating. I tried to stop myself telling him to 'be careful' and I revelled in our shared experiences and his sheer joy and ability, despite him becoming more proficient than me at everything except horse riding, by the time he was just 18 years old.

Watching, questioning and practising

Despite growing up in Llanberis, Sam's interest in climbing only started when he attended university at Imperial College London. Once he finished university in London, Sam started a masters' degree in Bangor in Applied Sports Psychology and moved back to North Wales. Much time was then spent bouldering and climbing on the fabulous range of natural climbing venues for which North Wales is justifiably famous. This was supplemented by indoor climbing and regular trips away. Damp days were often spent bouldering in the shelter of the fiercely overhanging Parisella's Cave in Llandudno.

Problems that were initially impossible to get off the ground would surrender to time, intently watching and exchanging beta with other climbers, experimentation, and deep deliberate practice. The intensity of practice was matched by the camaraderie of the groups of climbers. To me, as an occasional visitor, it reminded me of the days when a much younger Sam and his friends would spend hours and hours working skating moves on a rail set up in our garden.

One day Sam ventured down to the sea cliff of Lower Pen Trwyn (LPT) to try his hand at some of the sport routes. After warming up on an easier climb, he decided to try Night Glue. This classic F7a+ starts out with steep moves on good holds and then the cliff becomes less steep and the holds get smaller, finishing with a few thin moves

OPPOSITE PHOTO James McHaffie focusing intently on the fierce *Strawberries* (E6 6b), Tremadog. © Jethro Kiernan Photography.

to the lower off. He set off on-sight (not knowing the sequence, or having previously tried any of the moves) in the hope that the skills he had developed at Parisella's would be sufficient to get him to the top.

Although relatively easy, the steep moves at the beginning quickly began to tire his forearms. After the steep start, the headwall is only slightly overhanging, giving Sam a chance to rest on some moderately sized crimps. He then made his way up the overhanging face on small, meandering holds, moving fluidly, conserving his energy as much as possible. I stood at the bottom of the route with Rocio, watching (and belaying) intently.

On reaching the crux he couldn't see how to climb past it to the top. With rapidly tiring forearms, he shouted down to Rocio to ask for advice. Rocio had climbed the route earlier that day and she had used a dynamic move to get past the crux by throwing for a crimp. Sam was not confident he could make such a move. Instead, he quickly opted for a different solution. Realising he could get a high foot and rock-over in the general direction of the hold that Rocio had described, he went for that, hoping that he would be able to inch his way up until he could reach the crimp.

Sam pulled through the crux and cruised to the top. He had a big grin on his face when he reached the ground. Although he'd been bouldering pretty hard at Parisella's, this was his first flash (not on-sight, since Rocia had shouted up some advice) of a F7a+ sport climb. It was a good day.

What information was Sam using?

Sam had been confident of trying an on-sight ascent because of the time he had spent at Parisella's. He was sure of his ability to read and understand the features of the rock. However, the limestone in Parisella's is actually quite different to LPT, with the bouldering taking place on very steep ground and often using flat holds or even drilled pockets, whereas LPT is natural sea cliff limestone and is sharp and rugged with only small crimps and edges.

With our shared passion for sports psychology and skill acquisition, we talked through his climbing experience later that day. The bouldering had been useful for developing the strength needed to pull through the steep early section of the climb and for him to be comfortable standing on the small polished (i.e. slippy) limestone footholds at the Great Orme. But, Sam realised that he would not have been able to flash Night Glue if he hadn't developed route reading skills and endurance from face climbs on rhyolite in the Llanberis Valley. Without his previous training on indoor sport climbs he would not have learnt to use, and develop the endurance required to recover on the small holds. Finally, the crux was overcome by a move which he'd perfected on the slate cliffs of the Dinorwic quarry, where he had become very good at high foot rock-overs on tiny edges.

The extensive hours of climbing on limestone and in other environments had given Sam a deep and detailed understanding of the rock. It had also developed his understanding of his own climbing abilities and what features he could and could not use across a range of rock types. This had honed his ability to link the perceptual information available to him, to tactical decisions and movement outcomes, both consciously and unconsciously. He was learning to recognize the rock features and *affordances*.

So, what do we mean by the term *affordances*? This is a concept coined by the perceptual psychologist, James Gibson to explain how we individually make sense of the world around us in terms of what movement and actions we are offered (afforded) by the environment in which we find ourselves. For each of us, these are unique, but many basic ones are shared because we share many experiences. We are also, as a species, attuned to pick up the same perceptual information (more or less). The features that most climbers use are very similar; the easiest and most obvious lines up the rock face and the most efficient ways to move through the features. These affordances are perceived directly and much of our movement requires no conscious control.

Some of these affordances are shared between the climbers, others are not. Climbing, watching, listening, sharing ideas with the other climbers with their different physiologies, strengths and levels of ability, had given Sam the opportunity to experience a hugely rich variety of movement solutions. Due to the difficulty of the bouldering at Parisella's, time there is often an experience shared with many exceptional climbers. Sometimes watching the other climbers generated entirely new opportunities for Sam. It offered creative solutions that he had never even thought of, firing his imagination, inspiring, and offering new possibilities.

Working a boulder problem is a great example of highly motivated, highly autonomous, deep practice. It necessitates spending a lot of time in the 'ugly zone'. Trying, failing, exploring, failing again, until the rock becomes intimately known. How it feels to touch, tiny features, the effects of small temperature and humidity changes, the afforded rhythm and musicality. When you can pause on a feature. When you need to move through it. Timing the transfer of power from hold to momentum. The spontaneous jolt of sheer, systemic exhilaration when a move works and feels fluid. Both Aled and JD (in part 1) described worlds that they were tightly attuned to, and Sam's description of his bouldering experiences made me think back to those conversations.

Sam was becoming skilful through developing affordances; his ability to perceive the rock in great detail and use and interact with the features that he perceived.

On Night Glue, Sam had asked for beta from Rocio to allow him to reduce the amount of information available and make a quick decision (before he pumped out and fell off). However, the moves that Rocio had used to get past the crux were not available to Sam. He did not have the same skills or *perception-action coupling* to be able to capably mimic what she had done, but her advice did help to focus his efforts towards reaching a specific hold. And he was then able to adapt experience from another environment and rock type to develop a solution to the problem that he faced.

In this example, Sam was trying to climb a sport route on-sight. This required him to route read on-the-fly; taking in information and the *affordances* presented to him by the rock as he was climbing. His *perception* of these affordances and the solutions he was able to come up with were specific to his immediate physical abilities (including how pumped he was), but they were also limited by his imagination and existing repertoire of climbing moves.

The process of matching affordances to movement solutions is known as *perception-action coupling*. In the next instalment of the Developing Skill series, we will look into perception-action coupling in more detail.

Marianne Davies's practical experience includes more than 20 years coaching and 8 years as a coaching manager, coach educator and assessor. This is complimented with active Mountain Rescue experience, giving an insight into why things may go wrong. Marianne is currently doing a PhD in Skill Acquisition at Hartpury University. Her main interests are climbing, paddlesports and equestrian activities.
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If you're reading this then it's a pretty safe bet to say you like physical activity, more specifically climbing, walking, mountaineering or a mixture of them all.

PHYSICAL LITERACY

WORDS AND PHOTOS BY JOHN NORMAN

But have you ever thought about why you enjoy it so much, and what motivates you to get up at silly o'clock in the morning to slog up a hill in pursuit of a view, only to come back down to where you started eight hours earlier? Or hanging onto a rock face psyching yourself to make that next move even though your head is telling you to go back down to the ground, where nature intended you to be…

Are your reasons the same as everyone else's? Unlikely! And why isn't the outdoors for everyone? We've all had the response from someone, "oh I couldn't think of anything worse", or "I'm allergic to exercise", when you tell them what you do. Have you ever wondered why some people are driven to seek out physical activity as a part of their life, and how can we get more people to value and take part in it, specifically climbing and hill and mountain walking?

Physical inactivity has been a problem in the UK for some time and, although the latest Sport England Active Lives survey indicates that more people are getting active (the good news is the increase has been largely credited to more people walking, climbing and mountaineering), only 63% of adults are getting more than 150 minutes of physical activity a week, and worryingly, only 26% of children average 60 plus minutes a week.

Various organisations have attempted to address this problem, whether it be Sport England or the Government, but with obesity and sedentary behaviour rates not significantly improving it may be time for a fresh approach.

This article will focus on climbing but the principles are the same for hikers and other mountain activities.

What is Physical Literacy & what's so good about it?

The International Physical Literacy Association (IPLA) defines Physical Literacy as:

> **"Physical Literacy can be described as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life." (IPLA, 2017)**

Physical Literacy is a holistic approach to physical activity and has multiple aims. Firstly, it wants to engender the motivation, confidence and competence in individuals so they value taking part in physical activity for life. Second, this concept encourages interaction with a physical environment, whether that's a climbing wall, gym or swimming pool. Third, it recognises and celebrates the fact that each of us is different, we all have distinctive characters, influences, opportunities and motivators, and we are each on our own unique journey through life. If we are all different why are we expected to perform physically to the same level? It's like opening two random tins of paint and expecting them to be the same colour. As Margaret Whitehead (the academic that is credited with developing the modern concept) says, "as appropriate to each individual's endowment" (Whitehead, 2010). If we look at this rather refreshing approach in the context of climbing walls, the coaches would be encouraging their students to do their best, for some that would be reaching the top of the wall, for others it would be making it half way up and for others it may be summoning up the courage to walk into a climbing wall and talk to another member of the group.

Why should coaches use this concept at climbing walls?

Well, maybe it depends on what you want your students to get out of their time with you. Do you want to inspire them to enjoy and value physical activity as part of their lives, or simply to enjoy climbing? Physical Literacy champions the idea of taking part in lots of different types of physical activity, and the transferability of those skills. For instance, someone that takes part in a martial art where there is a lot of time spent stretching may find that the flexibility they gain helps them when climbing, just as the social skills they learn during climbing club may help them when they have to work with people they don't know at school. In addition, the different activities may help reduce the likelihood of injuries by building all round strength and fitness. Would you like to see the time they spend with you have a positive influence on their lives beyond the climbing wall, maybe making them more confident, motivated young people who are more likely to continue being active. By taking a more Physical Literacy based approach to climbing wall sessions, coaches have the opportunity to make a real positive impact on more than purely climbing.

1. Getting them to love physical activity at a young age can set them up for life. 2. For some the achievement is getting to the top, its personal. 3. Remember we are all on our own journey. 4. Getting to a certain hold can be an achievement worth celebrating.

So how can climbing coaches include Physical Literacy in their sessions, what questions and reflections could they be using?

Posing the following questions may help you identify some areas to improve your sessions.

- Are your students motivated to be active, and what motivates them? Are they performance orientated, or do they come more for the social interaction? What can you do to improve this?
- What develops their self-confidence – is it as they become better climbers, or as they become "at home" in the climbing wall environment?
- How do you define success – do they have to get to the top to get a "well done"? Are you judging them all by the same standard?
- How much of your session is about teaching them to climb, rather than building their confidence in the wall environment, which may then in turn have a positive influence on their climbing?
- Are you setting individualised goals?

How can you put strategies in place to ensure these things are happening? What can you do to make sure your sessions are focused on individual students' needs (not easy when you have a large, challenging group) so that each of them gets the opportunity to develop in the most appropriate way? A lot of the games and exercises developed for youth work can be adapted or given an interesting new twist for the wall environment.

Conclusion

Of course, your focus might be solely on activity, and you are aiming to produce climbers. Well, that's great, we need people to be fed into our sport for it to survive and grow! Also, maybe you are already doing all of the above in your sessions, in which case you can give yourself a pat on the back, confident that you are doing a good job, not only for your students, yourself and the climbing community, but for physical activity in general. If nothing else hopefully this article will encourage you to reflect on what you are doing during climbing sessions, and why you are doing it. Is it just something that has always been done a certain way, but no one has asked why, or is there a clear reason for the activities beyond getting them on the wall? I would encourage you to discuss this with the other coaches at your wall, it's a great way to share ideas and develop good practice. What is certain is that Physical Literacy within climbing offers a unique environment, and an opportunity to make a real positive impact on the students we come into contact with.

John Norman is a Hill and Moorland Leader and member of MTA, John gained a BSc in Sports Development and Coaching Science and is now studying for a Masters by Research (MRES) at Bournemouth University which he'll be finishing this summer. He is a local Coastguard Rescue Officer and spends his spare time climbing, running, mountain biking and being a taxi for his very active kids.

AIR RESCUE CAPABILITIES IN THE UK

WORDS AND PHOTO BY WILL LEGON

ABOVE PHOTO SAR helicopter comes to the aid of a fallen walker from Crib Goch.

We frequently hear of reports where mountain rescue teams are assisted by air rescue services. Knowing how long we are going to be with a casualty can be vital information for the first-aider. As a first-aider, if I know that rescue by the professionals is imminent, I will be reluctant to intervene as much as I might knowing that I was in for the long haul on a cold wet mountain.

Air rescue in the UK will be covered either by the HM Coastguard Search and Rescue services (SAR), or by the Helicopter Emergency Medical Services (HEMS). The SAR helicopters are typically large and come equipped with a winch which is necessary where the terrain won't allow the helicopter to land. The winch-man is a trained paramedic – so you can think of one of these SAR helicopters as being a bit like a flying ambulance that has the capability to get in to some tricky locations.

HEMS helicopters are typically smaller and won't have the capabilities offered by a winch. If you're on the side of a mountain, don't expect a rescue from one of these. But HEMS helicopters generally carry Critical Care Paramedics (CCPs) and Pre-hospital Care Doctors, (but not always): pretty much as high a standard as you can have in the NHS. They are experts in pre-hospital care. CCPs can issue greater levels of anaesthesia without a doctor present. Having a doctor on-board brings greater surgical intervention to the roadside that a paramedic cannot accomplish at the moment. This is critical for such things as traumatic cardiac arrests and head injuries as examples. The idea of HEMS is to stabilise the casualty and get them to hospital ASAP.

Who can request air support?

If you can see that the location you're in won't be accessible to a vehicle you should always call 999 and ask for the police to coordinate the rescue.

You should explain to them that you would need a mountain rescue team, and you could advise that due to the casualty's condition, as well as the remoteness of the location, that an air support may be needed. The final decision will not be yours however.

What happens once you request air support?

You make the request to the 999 coordinating authority (Police or Ambulance) and they process the information you give them and decide whether or not an air rescue is suitable. Your location and the severity of the casualty's condition come into play here.

They contact the Aeronautical Rescue Coordination Centre (ARCC) to request helicopter support who then look to see which resource is the most appropriate and available. It may be that the local helicopter base is already tasked and so another aircraft is sent. Possibly (though unlikely) the nearest available aircraft is across the country, and so a flight time of around 90 minutes may need to be factored in to the overall timings.

Once a helicopter is scrambled they are expected to take off inside 15 minutes (during the day), although typically this may be faster – around 7 to 8 minutes.

When might we not expect an air rescue?

Helicopters are incredibly versatile and that's why they are such a terrific resource as a means of casualty evacuation. But, they are not without their limitations.

As mentioned earlier, the SAR helicopters have the ability to winch casualties out of some pretty precarious locations. Also the winching capability means that they don't have to land and so can work in conditions of poor visibility such as at night time. That said if you're in fog or dense cloud or triggered lightning then it may be difficult for a helicopter to get to your location.

The HEMs helicopters are funded locally in their various regions through charitable donations. Their capabilities therefore vary up and down the land accordingly and so you can't expect these to operate in poor visibility or in locations where the helicopter can't land – however, some have the capability to fly at night time.

As well as physical constraints, air rescue is also a finite resource. If there is another casualty whose condition is worse, then they will get the priority. Priority cases will include cardiac arrest, casualties going into hypervolaemic shock or those suffering with a stroke. Broken limbs are not always up there as a high priority.

Helicopters will be tasked to relevant jobs as appropriate. You can be lucky or unlucky in terms of what is available. A lot of HEMS units also run rapid response cars and SUVs instead of helicopters when the weather is too bad to fly or at night.

If a first-aider thinks an air rescue is required, is there any key information that they need to pass on that would assist with this request?

When calling for help in a wilderness location and away from roads, an accurate map reference is crucial. The free app, OS Locate, gives you a pretty accurate fix and usually within seconds. It also works when there is little or no phone signal. The app then allows you to

share your location via text message, which if your phone is registered to 999, you can do when you next have some signal to work with.

Note: the grid reference is important and some ambulance control staff may be reluctant to take it. If it's all you have, it'll be all you can give though. And remember to include the two letter map code as well!

Don't risk lives or waste valuable time if there are obstructions nearby that may make an air rescue unsafe or untenable. For example, you must make mention of masts, towers or electricity pylons that are in the area. These can be lethal for a helicopter.

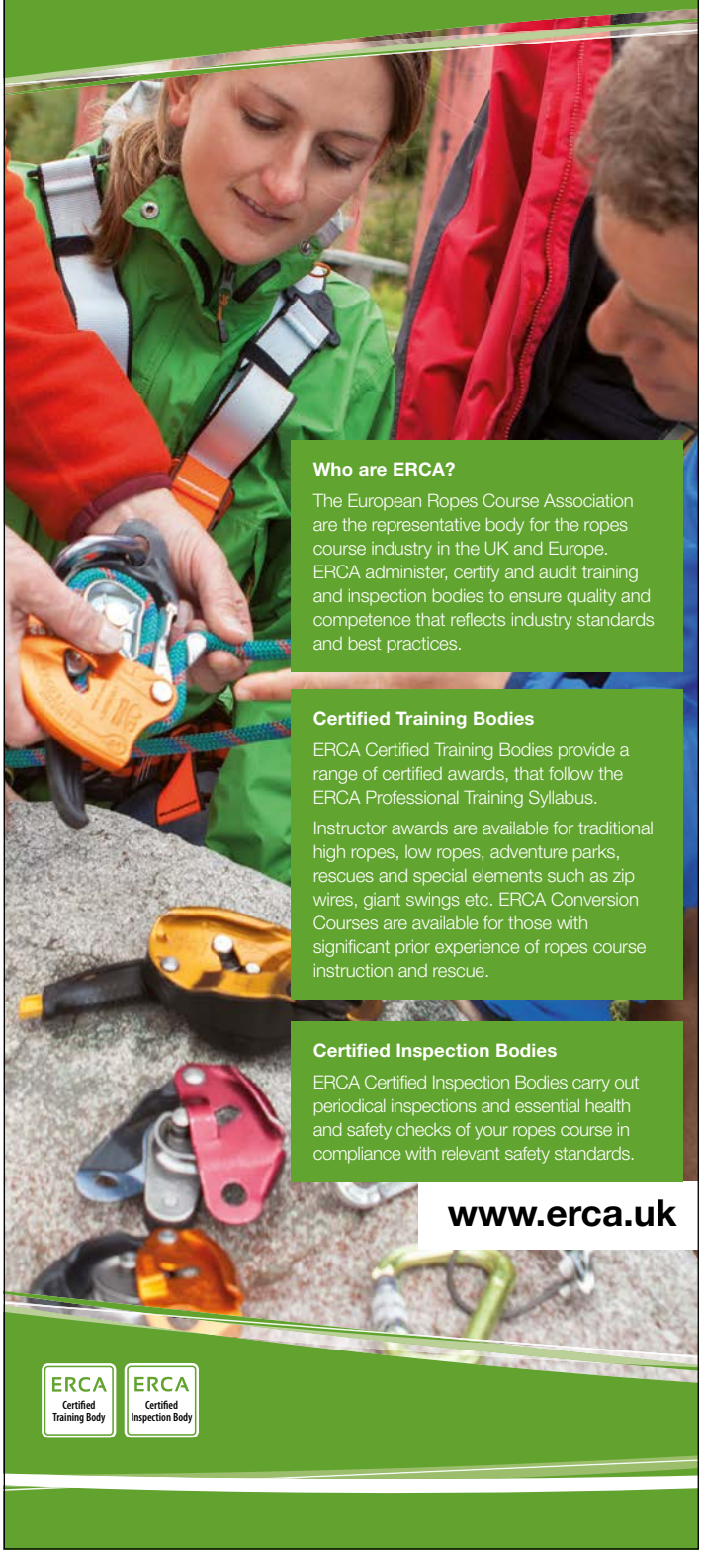
What can people on the ground do to make air rescue safer?

Stay calm and allow the helicopter access. Stay focused on the casualty and keep others away from the helicopter if possible. Helicopters won't want to land if there are loads of people milling about so try and keep the area clear of any bystanders. In addition, try to secure all loose kit as the down-draft from a helicopter can be pretty powerful: a blizzard blanket through the rotor blades could be catastrophic. Remove hats and sit on top of any bags for they too can easily be blown around. Stash away your group shelter too if you have one out. At night time be aware the pilot will be using night-vision goggles, so be careful not to direct your torch beam at the helicopter. Don't approach a helicopter while the rotors are turning. Above all, always follow the directions of the helicopter crew.

Will Legon runs Will4Adventure and works professionally as a mountain leader and rock climbing instructor. Additionally Will4Adventure run Outdoor First Aid and Expedition First Aid courses through the year.

European Ropes Course Association

ERCA



Who are ERCA?

The European Ropes Course Association are the representative body for the ropes course industry in the UK and Europe. ERCA administer, certify and audit training and inspection bodies to ensure quality and competence that reflects industry standards and best practices.

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Independent Mountaineering in the Alps

As professionals delivering days and weeks in the mountains, do we want to promote lists that everyone gravitates to and then just tick, or do we want to deliver the right skills, knowledge and mind-set, to gradually be able to enjoy the mountains themselves at whatever level they might achieve?

WORDS AND PHOTOS BY ADRIAN NELHAMS

From these experiences, ranges and mountains become better known; the grades, weather and conditions become better understood and objectives will spawn. This in turn helps people make their own decisions about the type of climbing they enjoy, the risk involved and the summits and routes that now inspire them.

These choices are born out of the time of year, the conditions and weather during that season, personal experience and ability and the partners that join them.

Sure, there are many clients who just want to book a guided climbing week, but even those clients would enjoy the experience so much more with an element of training and coaching leading to a greater understanding and feeling of independence. I know from my own experience, whilst building that skill-set in a client over time, you're also building trust – and trust means that you can progress increasingly onto bigger and more challenging objectives.

I personally believe that it is important to learn the right skills needed to move around the mountains safely before getting drawn into specific objectives. Any summits and mountains to climb will then evolve naturally from those experiences and the knowledge you gain through that initial training.

We as professionals present the whole picture to a person each day, and cumulatively within a course and repeat work.

It's a path of development, with that bigger picture continually painted and re-painted as that person learns and then practices those learnt skills. As they grow in knowledge their aspirations also develop as they better understand what they're capable of at that time. They also start to understand the skills required and the risk taken.

I could list what I feel are routes and summits perfect for someone new to the Alps, however, without the right skills, knowledge and experience I could also get them into some hot water!

As a BMG Mountain Guide, some of the more 'Facile' routes in the Alps can be some of the most dangerous. They might be 'easy' routes technically but if the snow conditions are poor under foot or hazardous up high depending on the season and time of day then the risk is high. These 'Facile' routes can often also be very difficult to protect and safeguard, drawing down much more

ABOVE PHOTO Gaining independence and practicing learnt skills on the Allalinhorn 4027m, Switzerland.

1. The final snow arête climbing the classic South Ridge of the Weissmies 4017m. 2. Learning to move together and short rope on alpine terrain safely, Valais, Switzerland. 3. Practicing glacial skills on the Moiry Glacier, Switzerland.

heavily on a person's ability to crampon effectively or climb without putting a foot wrong. These routes can have a much higher consequence that something technically a little harder.

To help develop those thoughts and that bigger picture…

Carry the right equipment to safeguard glacial travel, snow and ice faces, rock ridges and climbs. Take enough to supplement a forced descent, a longer day out than expected, drier and icier conditions or more difficult route finding.

Turn it down a grade or two from what you usually climb in the UK to take into account climbing in mountain boots, longer days and heavy rucksacks – and of course scale and altitude. Allow time to assess the weather and conditions, navigation may be more difficult through crevassed terrain or you may be navigating in the dark before the sun comes up, which can take much more time. Route finding up long alpine ridges can be confusing. Deciding on roped techniques for any given section of terrain will take longer without training and experience. For example, whether it's safe to down climb, or do you lower or maybe even abseil? If you do down climb how do you protect yourself? Climbing at altitude and general decision-making can take its toll on the length of your alpine day.

Don't copy what others around you do. They may have less experience than you have. For example, if you are walking on a glacier do you have enough rope between yourself and the next person to safeguard and arrest a fall into a crevasse? If there are only two of you, have you tied knots in the rope to help aid an arrest if someone falls into a crevasse? If your friend has a fall, is the pull low on the coils you're carrying, so that the force is directly onto your harness and through your legs onto your crampons?

Make sure you cast your net as far and wide as you can, to gain as much information about the route or summit you want to do. You can do some of this before you go and also while you are in the Alps, by speaking to hut Guardians, Guides or other climbers who might be able to help paint that picture. The relevant conditions are NOW – not when a tick list was produced!

Make sure that your partner(s) is on the same page and does not have any hidden agendas. So, if you do have to turn back because it doesn't 'feel' right, there is no stress and nobody wants to push on, making others feel uncomfortable.

Keep it fun and with the right training, skills learnt and experience, you can focus on a list of objectives, but let it evolve naturally out of time spent just being in the mountains and first learning that basic alpine mountaineering foundation – and going from there.

Adrian Nelhams, IFMGA British Mountain Guide and director of both the International School of Mountaineering (ISM) and the BMG Guides Training Scheme, supported by Arc'teryx and the independent Climbers Shop and Joe Brown Shops.

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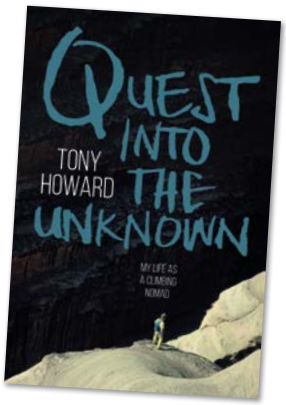
BOOK REVIEW



QUEST INTO THE UNKNOWN
by Tony Howard
Reviewed by James Davidson

'You never know unless you go'; a one-line lesson in curiosity, culture and climbing. This is the core of the book, admittedly quite a large autobiography which at times actually made my fingers ache despite being a regular reader. The cover photo is a good summary in itself – a small figure dwarfed by an immense landscape of sand and stone, only part of which is light enough to see. The rest is hidden in shadow and filled by the title. This book is about pure exploration, often without guidebooks, maps and sometimes food and drink. The preface and contents list are also fairly unconventional; in honesty I think the way it is set out is a bit of a jumble.

It starts at a good pace, leading through both interesting and familiar territory. Tony describes vividly how his youth was impacted by the war years and rationing, and how he one day stumbled across a guidebook at the bottom of a crag left behind by somebody. His timing was perfect for British adventure – he was one of the first to complete the new Pennine Way when it was wild and this interest is sustained throughout. For those readers looking for Troll trivia, you will not be disappointed. There are brief moments when I questioned his honesty, particularly time spent in Canada in the Yukon in minus temperatures that Ranulph Fiennes would have been hesitating to cope with, and also a marvellously horrible description of a run-down hotel which will hopefully beat anything you have personally experienced. Lastly, his first job after school on board a South Georgia whaling ship gives you an indication of the sort of 'stuff' that Tony is made out of.

This does not quite merit my full praise, but it comes close. The impulsivity, boldness, and 'you never know' attitude certainly provide the foundations for some great stories which I have no doubt he has a real talent to tell verbally. I even enjoyed the sections on his great Canadian river journey despite not being a fan of this myself. However, the second half of the book was more of a challenge for me. Where previously the reader would get hilarious tales of near-death escapes and global cultures, there are times when the technical descriptions of a particular climb, or and endless list of route names at an unfamiliar crag, foster boredom. There were definitely moments when I had to force myself to read. Additionally, I could not help but question his lifestyle impact on his friends and family, which he briefly touches on. Undoubtedly an almost unbelievable life, but at what price?

Despite this, it is an excellent guidebook if you are planning on completing the Jordan Trail at any point. There are many chapters devoted to this Herculean project which he undertook with his wife Di over a period of decades and which has been claimed as one of the best treks in the world. It is also fantastic if you are seeking a crag which is not frequently visited, or if you would like to do some new routeing. I imagine this would provide hours of fascination and inspiration in these regards. You never know until you read.

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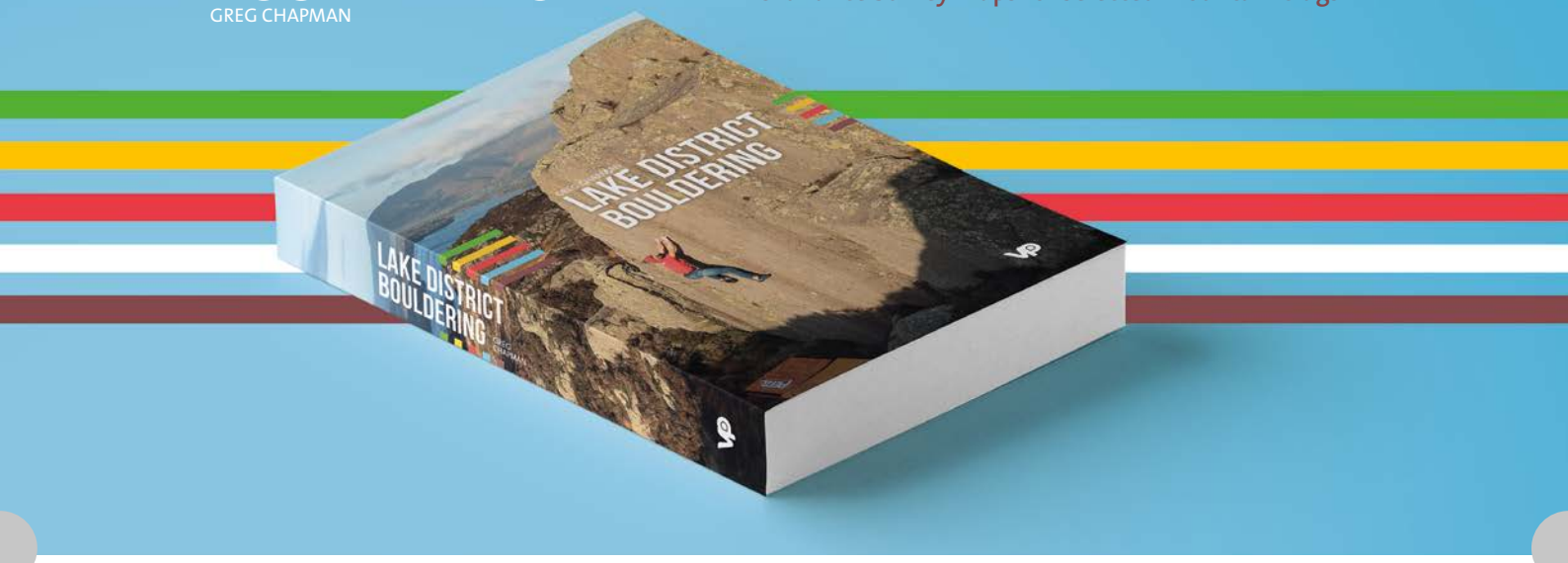

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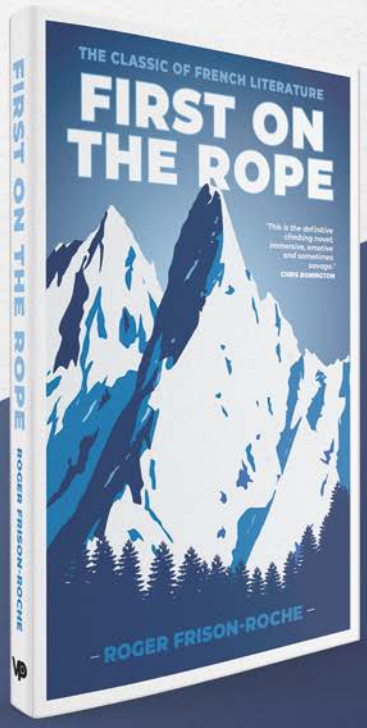

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