

The Professional **Mountaineer**

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of Mountaineering
Instructors

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Guides

British Association
of International
Mountain Leaders

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The Professional Mountaineer

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Our front cover

Minna Riihimäki on the South ridge of the Aiguille d'Entrèves, France/Italy.
© Ben Tibbetts.

EDITORIAL



PHOTO Denali, June 2017. © Iain Peter.

As we finalise this edition of the magazine, Shauna Coxsey and Elizabeth Revol are the climber and the mountaineer dominating the news for me.

UK Sport's assessment of Shauna and her contemporaries' potential in the build up to the Tokyo Olympics in 2020 has resulted in them setting £630k aside to fund the elite climbers who will represent us at these games. This money will allow climbers to travel and to access specialist training facilities and advice more normally associated with the track or gym. I can only begin to imagine how this will inspire current and budding competition climbers as well as their many coaches towards this pinnacle of achievement.

Elizabeth Revol's story is a world apart with her battle for survival high on Nanga Parbat. The fact that she and Tomek Mackiewicz made the second winter ascent of this 8,000+ metre peak is sadly not the story. Instead it was her agonising decision to leave her partner and begin to descend for help only to then need rescuing herself.

The power of the sat phone, social media and the worldwide community of climbers and mountaineers meant that a crowdfunding helicopter rescue was set up in what seemed like hours. Inspiring in itself that so many people chipped in to help, but then that four members of a Polish team attempting K2 at the same time were willing to give up their ascent, fly by helicopter to Nanga Parbat and ascend 1100m overnight to Elizabeth's aid is incredible.

This edition of the magazine should also help inspire you, whether it's a new venue, technical skills, better understanding of your business needs, leadership and teaching skills or increased knowledge about our planet in this packed issue for you to enjoy this spring.

Guest editorial written by

John Cousins

OUR COVER



Ben Tibbetts

Ben is an adventure photographer, artist and British Mountain Guide based in Chamonix and the UK.
www.bentibbetts.com

OUR SPRING ISSUE CONTRIBUTORS INCLUDE



Hannah Burrows-Smith

Hannah is a British Mountain Guide and she shares her time between the Scottish Highlands and the Alps.



Lucy Dunn

Lucy is a Mountain Leader and a PhD student researching the values of rewilding. She runs CPD workshops in the Lake District on mountain wildlife and writes a blog and articles for conservation groups.



David Jones

David is founder, chairman and principal guide at Walk-ability, a new Scottish charity planning and guiding hillwalks for the disabled and their carers.



Zoë Procter

Zoë is a research scientist at the National Centre for Atmospheric Science (NCAS). Field work and research has taken her to remote places like Antarctica and the Arctic. She is a Mountain Leader and led on field work and expeditions.

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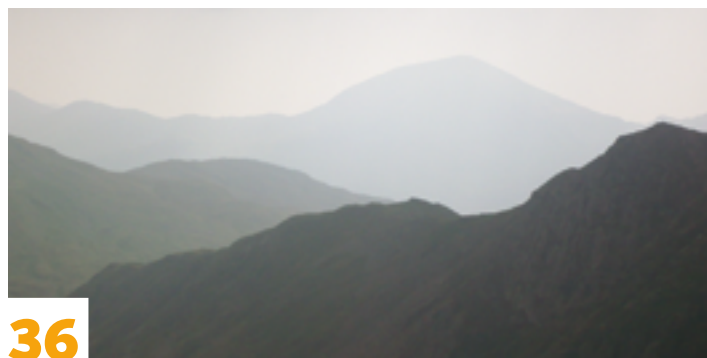
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inspired?**

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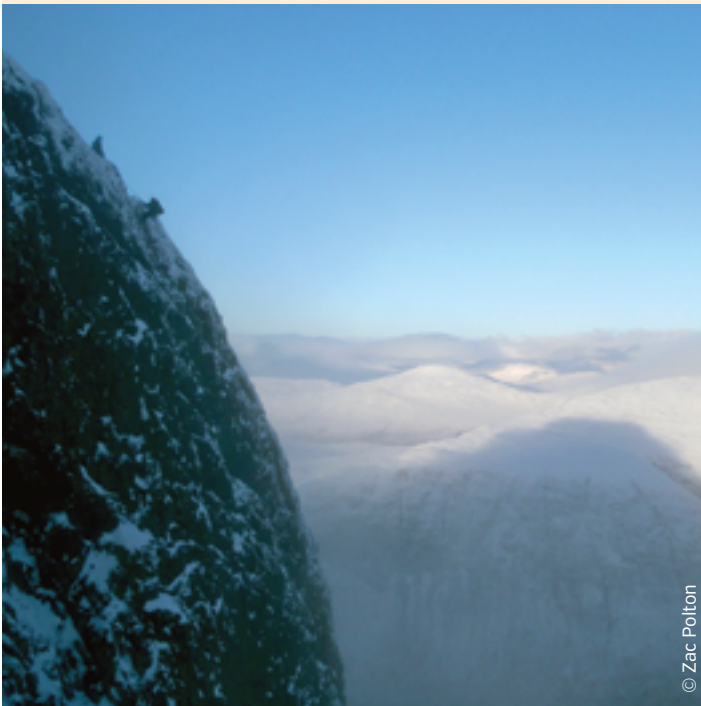
NEWS



THE ASSOCIATION OF MOUNTAINEERING INSTRUCTORS (AMI)

We are looking forward to another great year for AMI which had the best of starts with a successful AGM. The highlights from last year have been captured in the 2017 Review available on the website along with the results from the members' survey, which will help drive the direction of the committee and association. We welcome six new members to the committee, all of whom have been introduced in the last members' email, including Phil Baker who has been elected as the Chair Elect for this year [and Chair from next year]. Of note, we will see the start of the official Mountaineering Instructor mentoring scheme and the establishment of various training roles in collaboration with Mountaineering Scotland. We will also be establishing a Working Group under Paul Platt to look into the renaming of the MIA and MIC awards, as well as amending/extending the prerequisites for membership of our association (volunteers for the Working Group are welcome); this will report in time for the next AGM for membership voting. See you on the hills.

Guy Buckingham (Chairman)



© Zac Polton

AMI is the representative body for professionally qualified Mountaineering Instructors in the UK and Ireland and is committed to promoting good practice in all mountaineering instruction. Full members hold the Mountaineering Instructor Award (MIA) or higher award the Mountaineering Instructor Certificate (MIC).

T 01690 720123
www.ami.org.uk



BRITISH MOUNTAIN GUIDES (BMG)

It is with great sadness that I report on the passing of Paul Farmer on Christmas Eve. A good friend and fellow colleague; Paul's charming humour and cutting wit will be greatly missed by all that knew him. Our thoughts and condolences go out to his wife Alex, his family and friends.

The winter season has come with a bang this year, giving some very real conditions for the winter climbing and ski courses running in both the UK and alpine areas – long may they continue.

An environmental project (Nature First) has been initiated with the IFMGA and UIAA to help with the mountain community plan and protect what is close to our hearts. Expect some survey questions in the near future!

Only one new member, Dave Rudkin qualified in 2017. Congratulations!

The strategic plan work group is progressing and questions and answers for the membership will soon follow. The IFMGA spring meeting will take place in Samnaun Switzerland in April. This will also include the International Mountain Guides ski races, downhill and uphill.

We are currently looking for a number of new area representatives who are keen to help with the running of the association. I'd also like to extend a big thank you to the current officers and representatives. Last but not least, I would like to thank Paul Moores for looking after and leaving the BMG in good order through his tenure.

Mark Charlton (President)



© Mark Charlton

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



THE BRITISH ASSOCIATION OF INTERNATIONAL MOUNTAIN LEADERS (BAIML)

The BAIML Communication Director Ian Spare was elected as the new President of UIMLA, signalling potential for more UK interaction and enabling us to further explore the ease of working around the world, sharing expertise and boosting cooperation. Simon Conroy, Membership Director, will also be joining the meetings as a new UK representative, adding to the UK team.

BAIML will be moving forward on tackling bigger strategic issues in 2018 and 2019 through its new strategic plan. The next AGM will be held at the Palace Hotel in Buxton on 23rd-25th November 2018. Following last year's AGM we are very much looking forward to following the exploits of the BAIML Montane ambassadors, gaining an insight into their working life, travels and of course equipment recommendations. They include Kirsty Brien, Julie Tregaskis-Allen, Scott Smith and Stuart Ritchie.

We as BAIML can show more people the valuable role that the IML can play by engaging in environmental and community education projects as part of our work. Plenty to look forward to in 2018!

Anne Arran (President)



© Steve Davies

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)

This year MTA is running a winter CPD weekend focusing on 'getting into winter' at Glenmore Lodge on the 10th-11th March 2018. Due to the popularity of our winter events we will be making this an annual occurrence and next year's weekend is already confirmed for 26th-27th January 2019, so save the date!

MTA has recently teamed up with EduCare®, an established provider of online safeguarding and duty of care training, to offer member's access to the EduCare for Sport® package of safeguarding training courses at an exclusive discounted rate.

Over the next few months we will be reviewing our workshop programme and our process for providing CPD workshops, to ensure there is a good balance of CPD available to support our CPD policy.

We are also in the process of recruiting a number of new regional coordinators and other support volunteers to increase the number of regional groups and enhance the reach of all our groups, bringing more opportunities to you. In continuation of our 'Experts on Tour' campaign, we'll be bringing more CPD opportunities to Yorkshire and the Lakes, as well as running a number of targeted autumn CPD events in other parts of the UK – more details to come!

Belinda Buckingham (Development Officer)



© Allan Aubeelack

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

GETTING INTO SKI MOUNTAINEERING

There are many ski tours to choose from across the Alps to develop your skills as a ski mountaineer. Each can focus to a greater or lesser degree on the sense and challenge of the journey, the mountaineering terrain and the ski descents that can be experienced.

WORDS AND PHOTOS BY HANNAH BURROWS-SMITH

An example of such a great ski mountaineering tour is the Imperial Crown Haute Route, which roughly travels through the high peaks and glaciers between the Val d'Anniviers and the Mattertal in the central Valais Alps of Switzerland. This works really well as a ski tour for those that already have some multi-day, glacier ski touring experience who wish to develop their ski mountaineering skills without any one section being too technical or sustained. I've journeyed in this area a number of times now and I've always enjoyed the adventure of the place; there are ski peaks to ascend and ski from the top of and there is a great variety of mountainous terrain to journey through, to bring together all your skills as a tourer, mountaineer and skier.



Hannah Burrows-Smith is a British Mountain Guide and she shares her time between the Scottish Highlands and the Alps. www.hbs-guide.com

Although there are other variations, this tour best begins from the top ski lift in Val d'Anniviers ski resort of St Luc and heads south, to finish either back within the same valley in Zinal or by travelling over the Col Durand to finish in

Zermatt. The mountain huts that you can use along the way are the Turtmann Hut (2519m), the Cabane de Tracuit (3256m), the Cabane d'Arpitettaz (2766m) and the Cabane du Grand Mountet (2886m).

Ski peaks as objectives

Ski tours amongst the high Alps often don't get to climb the main mountains around them and the tourer is happy enough to travel amongst them and attain cols as high points. However on this tour there are a number of peaks that work for those travelling on skis. The Bishorn at 4135m is a superb ski peak that is the shoulder of the impressive Weiss-horn, and a '4,000m peak' in its own right. Here the skis can take you within 50 metres of the Bishorn summit, which is attained by easy climbing up this short section of snow and ice. This peak can often be seen as the main summit objective of the whole tour, yet prior to this above the Turtmann Hut, you have both the



Barrhorn (3610m) and the Bruneggghorn (3833m) which are also fantastic objectives in their own right. Both have a great sense of the ascent and the summit as mountains, involving interesting steeper terrain and are at good altitudes for acclimatising prior to the Bishorn.

After the Bishorn, on your journey south you can take in the Blanc de Moming (3657m) which is attained by an adventurous journey though the glaciated terrain first beneath the Weisshorn and then up below the Zinalrothorn. Reached entirely on skis, this is an amazing summit to reach amongst so many great mountains, with the Matterhorn and Dent Blanche in view to the south.

Route planning and mountaineering terrain

One particular factor of this tour which develops your skills as a ski mountaineer is that in many respects you cannot take the terrain or the established route for granted. Your own decision making process about how to take each section is always important. The decision to remain skinning and skiing or instead to carry the skis or use ropework can sometimes be obvious but at other times the decision will be more ambiguous. You must appreciate the skills and aptitude of your group and appreciate the nature and consequences of the terrain you are venturing into. Sometimes the skinning can feel quite bold, with kick-turns

needing to be proficient and secure, even when wearing ski crampons – in firmer snow conditions, the thought of sliding backwards halfway through a turn in some of the places might help you think about putting your boot crampons on!

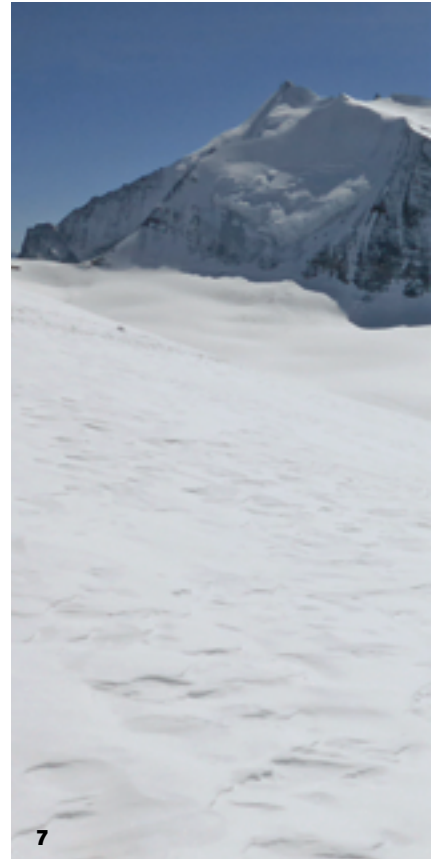
There are a number of mountaineering sections that you encounter on the main journey, aside from what the ski peaks themselves present.

Here the skis may need to be carried, crampons may need to be worn and ropework may be considered in ascent or descent.

One example is the Güssi Couloir, above the Turtmann Hut, which is the route that accesses the upper glacier. Otherwise surrounded by great limestone cliffs and multiple hanging seracs of the Turtmannletscher, your arrival at this first hut can be met with wonder as to how progress is going to happen the next day. The Güssi is the only way onwards, and once you realise you'll be using 'mountaineering-mode' for this almost Grade I gully, it's quite straightforward to ascend.

Much further on in the tour, if you choose to take the high-level route between the Arpitettaz and the Grands Mountets huts, you are faced with an exciting traverse on the narrow snow crest connecting the Blanc de Moming with the shoulder of the Zinalrothorn. This option can be avoided but is also one of the many highlights of the tour.

MAIN PHOTO Looking on to the Bruneggghorn. 1. L-R view from St Luc, Barrhorn, Bruneggghorn, Bishorn and Weisshorn. 2. Skiing down from the Blanc de Moming under the traverse ridge to the Zinalrothorn.



Avalanche hazards and glacier travel

A drawback of any multi-day ski tour with an A to B itinerary is the sense of compulsion to follow that main line of the journey. Of course in good conditions this is your main aim, but it is important to think laterally about how good those conditions are and the nature of the terrain you will be travelling through; how it will be affected by different snow conditions and at different times in the day. Always be aware of all the alternative route options and also of routes that will enable you to bypass a section of the journey altogether.

In the case of avalanche hazards, these can predominantly be a threat on the first and final days of the tour when you are travelling through lower approach valleys surrounded by steeper slopes. These places can be different once stable, but with fresh snow and then high springtime temperatures, they should be best attempted early in the day, if not avoided altogether. Both the Turtmann valley and the upper Zinal valley can have impressive avalanche debris in them that you pick your way over, somewhat relieved that it has

already released.

Once into the higher glacier zone, the line of your route is key. Use the established route laid down by previous parties and guides, but also don't take this for granted. Consider roping up as a party when skinning, even if no one else is. The snowpack will be pretty frozen and solid at these high altitudes but still the crevasses are there and have caught tourers out. Be prudent if it is necessary to travel over glaciers particularly after fresh snow and in whiteout conditions when conditions will be more serious than the norm.

But once things have settled down, the landscape you travel through on these glaciers is truly spectacular. All the different forms the mountains around you make in snow, ice and rock are constantly catching your eye. The glaciers themselves vary from sweeping open spaces to zones of hanging seracs, and from crevasses zigzagging across the slopes ahead of you to high-altitude frozen snow fields around the summits.



COLD? YOU NEED TO FOCUS ON THE SKIN



As people venture into the outdoors to undertake extreme challenges they place significant reliance on their performance clothing for enjoyment and survival. In extreme cold weather conditions your choice of clothing is as important as to how you wear it.

Try to stay "comfortably cold" as you never want to get hot enough to start sweating! Dress in multiple layers and take layers off as your temperature increases. The baselayer must move sweat away from your skin. Merino wool is very effective as it removes moisture in both vapour and liquid states. Avoid using heavy baselayers because they are more likely to make you sweat. A lightweight

merino midlayer provides insulation and helps move sweat away from the baselayer. It is highly breathable, dries quickly and will insulate you even if slightly damp. Remember your enjoyment is linked to keeping the skin dry.

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3. Returning down the Brunegghorn. 4. Skinning on the Bishorn above the Turtmann valley. 5. Outside the Arpitettaz hut, Zinalrothorn in the background. 6. Nearing the summit of the Bishorn. 7. Setting off from the top of the Barrhorn.

Be ski-fit for the off-piste skiing

Don't forget this important skill! The skiing on this tour makes demands on your off-piste skiing skills and ski fitness too. When carrying the typical multi-day, glacier-terrain rucksack and being at altitude, both these factors can take toll on the strength in your legs when it comes to the descents. The snow can have a range of qualities and it's good to have an approach to skiing each of these that keeps you stable, well-balanced and less likely to have a fall.

In addition to the summit peaks that you can climb on this tour, it's the ski descents that keep me coming back. It's fantastic to set off from the top of a high mountain (or almost the top in some cases) and look forward to skiing ahead. The descent down the Barrhorn and the Bishorn are both memorable; the ski explorations out the back of the Arpitettaz hut finding powder under the vast west face of the Weisshorn; the north-facing descent from the top of the Blanc de Moming all the way back to Zinal, starting on a glaciated peak and finishing in snow covered woods and fields. And if you make it over the Col Durand, a similar journey all the way back to Zermatt in front of the Matterhorn's north face.

Resources

Although this ski tour is frustratingly on the corner of 4 maps, the Swiss ski maps for this region at 1:50,000 scale are the best places to start: *Montana 273 S, Visp 274 S, Arolla 283 S, Mischabel 284 S*. The details on these maps correspond with the Swiss guidebook, *Ski Alpin 3 - Alpes Valaisannes*.

It is worth also looking at the corresponding 1:25,000 scale maps for this ski tour.

Much of the online resources will relate to guided versions of this ski tour, or as with the above resources, they will be in French. Indeed, this tour travels between the languages of French and German then returning to French-speaking parts of Switzerland, so adapting to this will be part of the adventure! ■

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Laos

Huddled around a candle in the darkness of a jungle cabin, we watched the village shaman perform a ritual practised to welcome guests and wish them luck on their travels.

WORDS AND PHOTOS BY JANIE OATES

Mumbling mysterious words in a foreign tongue, he moved between us tying cotton string to our wrists to keep the spirits in place. He also offered them a gift of rice liquor which he passed around the circle. This was Animism in practise – a belief system of indigenous tribal people based on the idea that objects, places and people all possess a distinct spiritual essence which must be looked after and respected. This was a fascinating cultural experience we enjoyed while on trek in Laos.

Landlocked and mountainous, covered with tropical forests, agriculture provides most of the employment in Laos. The main crop is rice. As our local bus lurched over the bumpy hills on our way to Luang Nam Tha, fields and fields of it filled the foreground while faint mountains stretched to the horizon. On this long-distance bus journey we found ourselves sharing the space with local farmers and plenty of rice sacks. Asian tunes playing on the radio filled our ears as we observed quiet rural scenes out the window. Some of the group were surprised to see that the only toilet stop on this journey was a clearing in the jungle. Small trucks were often needed for local journeys as bus stations were mainly out of town. These vehicles each carried about six people with rucksacks and were readily available.

In the highlands you will encounter tribal religions but elsewhere Buddhism is the main one. Make sure you visit the beautiful temples that are the cornerstone of community life. Look out for the many friendly monks who walk the streets elegantly dressed in orange robes. Visit the markets where you will find locals cooking up stews, mixing juices and boiling fresh soups with ingredients directly from farmers' fields. Try the spicy, colourful curries full of flavour, with a choice of either chicken or tofu. When thinking about

the best month to enjoy these experiences, take advantage of the dry season between October and April when the country is at its warmest and driest, making travel to remote and jungle areas much easier.

On my visit I was working as the expedition leader with a youth group and our main stop in Laos was for jungle trekking near Luang Nam Tha. It was a challenging 3 day itinerary, even for a very capable and fit group. The distances trekked were not far but there were deep river crossings, steep and muddy ground, leeches and spiders, high humidity and some heavy rain (we were visiting in July which is the rainy season). It felt like a very remote region and we saw no other trekking groups on the trail. Luckily my group were pretty tough and could see through the hard conditions to appreciate this incredible adventure. Walking through the simple huts on arrival into a tiny and isolated jungle village was a great opportunity to learn about other cultures and start worthwhile and interesting debates on development issues.

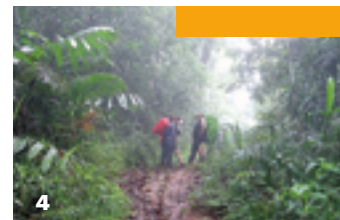
While I was looking after the overall safety and well-being of the students, our excellent guides from the trekking agency in Luang Nam Tha had the local knowledge and jungle skills to guide us along the trails and support us on river crossings. Also, their presence would have been indispensable in the event of an evacuation. Spending time with the guides was a real opportunity to learn about jungle life. Most of my group were open to these new experiences but some individuals needed more support and encouragement from myself in dealing with the many leeches, unusual food, adverse weather and rough terrain.



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MAIN PHOTO Crossing the Bridge at the end of our jungle trek. 1. Cooking rice on the fire in jungle camp. 2. Staying in a local village. 3. Crossing rice fields on the jungle trek. 4. Trekking through the jungle near Luang Namtha. 5. Shopping for supplies in Luang Namtha. 6. Sunset over the Mekong river in Huay Xai. 7. Shaman ceremony.

The guides were fun and really added to our experience by telling us stories from their childhoods and sharing their knowledge of the jungle flora and fauna. They chiselled spoons for us out of bamboo, roasted crab for us on the camp fire and made headpieces out of ferns and leaves. The food they cooked for us was delicious: sticky rice wrapped up in leaves, fresh and delicious tomato sauce and spicy scrambled egg. All served up on the floor of the jungle, on a table cloth of banana leaves, and sometimes accompanied with fresh coffee in a bamboo cup.

On arrival back at the hotel in town, the group were more appreciative than ever of that hot shower to wash away all that jungle mud and sweat. Buzzing with brilliant experiences and crazy stories to tell, it had been a very worthwhile and rewarding jungle trek for everybody.

Some practical tips

In preparation for your trip to Laos, I would recommend reading up on the history of this unique country in order to better understand its distinct people and culture. In brief, after Laos gained independence from the French in the 1950s, Communist forces eventually won the ensuing civil war against the royalists in 1975, thus bringing years of isolation for Laos. Only opening up to the outside world in the 1990s, it remains one of the poorest states in the region.

Laos is located in the heart of South East Asia and therefore very easy to visit alongside other destinations. Visas are easily obtained on the border. At the time of our visit we paid 35 US Dollars each and also needed a passport photo. Local currency was available here as well. There was a marked difference in development when crossing over from Thailand. We noticed how the urban infrastructure was simpler, the countryside was wilder and there were less foreign visitors. ■



Janie Oates is from the Lake District and is an aspirant International Mountain Leader and a member of BAIML. In 2014 she spent 9 months cycling the length of the Andes from Cartagena, Colombia to Ushuaia, Argentina.

The full story can be found on her blog www.janieoates.wordpress.com. Previously, she has worked many summer and winter seasons across Europe in Italy, Austria, France, Switzerland and Spain. At 21 she spent 2 months cycling solo across the Alps and later explored Eastern Europe and Turkey by bike. After working as a Latin America specialist for a UK travel company, she now plans to spend the foreseeable future exploring Asia, the Himalayas and New Zealand.



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NAVIGATION ON SKIS

Ski touring is still to me the undisputed best mode of transport in winter



ABOVE Students on a Glenmore Lodge navigation course pleased to have navigated through the bad weather.

WORDS AND PHOTOS BY ANDY TOWNSEND

Nothing beats skinning at a relaxed pace before cutting perfect turns through light champagne powder under an azure sky and brilliant sun. However, Mother Nature has other ideas and the cloud can clamp down and reduce our visibility to nil in a matter of minutes.

Navigating in a whiteout often brings to my mind a scene from Star Wars. Luke Skywalker is on board the Millennium Falcon wearing a helmet with the blast screen down as he uses his light sabre to defend against a drone, 'Reach out with your feelings' Obi Wan helpfully suggests. I have often tried reaching out with my feelings as I ski in a whiteout but no matter how hard I try I can't seem to get much back through my goggles! Unable to harness the power of the force I have had to rely on some more practical techniques to steer myself and my students around the mountains.

The challenges of navigating on skis should not be underestimated; complex terrain coupled with slippery skis makes difficult navigation really pretty tricky. But before we look at the skills and techniques there is a fundamental question of whether we should even begin. Skinning up or skiing down in bad visibility is a serious business, the lack of visual references increases everyone's exposure to the inherent risks of the winter environment and this is exacerbated by the lack of a speedy helicopter rescue. In general the techniques

of navigating on skis should be viewed as a skillset to get yourself 'out' of trouble and not as a way to carry on with your tour or itinerary regardless, since this will lead you 'into' the kind of trouble that you should be avoiding in the first place.

The hardest skill of any ski tourer is to know when to not go and to have the patience to sit tight and wait for better weather.

The tools

As ski tourers we have never had so many options, tools, gear and gadgets to help us navigate. A well prepared and experienced navigator will have access to all the gear but will also have the knowledge to pick and choose between the various tools to get the best performance for any given situation.

Maps

I still get a real thrill out of unfolding a paper map and staring at the contours, plotting routes and searching for the hidden powder stashes. With the addition of digital mapping we are able to access a huge range and quality of mapping. Whilst the availability of digital mapping is increasing, the paper map is nowhere near extinct. In fact, access to digital printable mapping allows the ski tourer to prepare a range of maps to help them



1. It is pretty tricky skiing on a compass bearing... lots of practice required. 2. Essential to be well prepared when navigating on skis.

with navigation. When heading off on a tour I really like to have a full sized map and a number of smaller sections, this I find gives me a variety of practical options. The big paper map is great for planning in a hut, as when spread out it allows you to see the 'big' picture and helps prevent you from the tunnel vision of religiously following the planned route. On the hill these big paper maps are a bit of a hassle and smaller laminated sections are easier to use, they fit into your pockets and are easily accessible so you can quickly refer to them whilst travelling.

Compass

Still the undisputed workhorse of ski navigation, big or small you can't ski or skin in bad weather without one. A big base plate compass will definitely make your life easier when wearing gloves and another option is to go for a fast settling orienteering type of compass. These come in a variety of shapes and sizes, some of which can be worn on the wrist or thumb giving obvious advantages to the skier.

Altimeters

Altimeters are the essential tool for any ski tourer, not only for bad weather navigation but they also help gauge skinning pace and in good weather to set limits for ski descents. When the weather

closes in they become essential for positioning on a slope and help stop you from descending too far.

The most popular altimeters are now built into some pretty complex wrist watches which not only tell you how high you are but also how many calories you can eat in the hut that night.

As with all navigation tools they need to be accessible, worn on the wrist over your layers or strapped to your rucksack.

GPS and Phones

Handheld 'Global Positioning System' devices are now a key item of kit for any ski tourer. Coupled with advances in smart phones, these items are making bad weather navigation a lot less stressful. I personally carry both, using the handheld GPS to navigate between pre-programmed waypoints whilst keeping my phone in reserve for location finding, but conscious that I must preserve the battery life for emergency use. There are numerous navigation apps being developed for smart phones; Fatmap being a great tool that uses the GPS signal to locate you on 3D topographical map allowing you to look ahead and assess the terrain. As with all these devices and apps they should be used as a tool to assist you in escaping the mountains rather than a tool to continue on your planned itinerary ignoring the weather and conditions.



ABOVE Pole stashed, compass in hand ready to head into the whiteout.

The Tactics

The crucible of navigation on skis is planning and preparation. The planning is quite easy if you have time before to lay out your maps and get organised, but it becomes much more challenging if the weather quickly changes and you have to devise a plan on the hoof.

The key is to go for simplicity; the more complicated, the more elements require management and therefore more possible errors can be made. This approach should also be applied to how we prepare ourselves for navigation. Skiing in a whiteout should be conservative, slow speed and cautious. A reliable snow plough or side slip will allow you to hold a compass bearing, whilst being able to ski uniform short turns in a corridor will also help. You may need at least a hand free to hold a compass so being able to skin or ski with one pole is worth practising in advance. Having a quick solution for stashing a pole down the back of your rucksack is important so you can hold the compass but also grab the pole if the terrain gets tricky.

A compass attached to a jacket might not be 'Euro' ski cool but having it to hand is essential so you can ski on a bearing whilst being able to make regular checks or take back bearings along the line of your (or your ski partners') tracks. Many skiers complain of nausea when travelling in a whiteout. The lack of a visual reference tricks the mind and you often struggle to know if you're stationary or moving. Dragging a pole or both will help give you extra balance but also provide a reference to the ground around you. Taking turns in the lead will also allow for recovery from that sea sick feeling but will require everyone in the team to be briefed about the plan to able to take a full part.

In really bad visibility a 'ski whip' is a superb tool. A 6 or 8 metre length of 4mm cord with a heavy knot in the end is tied to a ski pole and then whipped out in front of the skier. As the cord lays on the snow surface it will provide a visual reference and also highlight any sudden changes in slope angle. It might look a little quirky but once deployed it's a life saver in the worst visibility.

If the terrain requires skiing on a rope then this also gives a useful visual tool to help navigation. The rope itself gives you a line to assist with holding a compass bearing. You can also use the rope to help the lead skier, giving them a fixed line to balance against but also a method of allowing them to ski straight whilst a partner at the other end of the rope applies the brakes. This needs practice in good weather before trying it out for real!

The choice of line is the real key for success. Skiing is best done straight down the fall-line, meaning that your turns can be even and uniform. Not all ski touring routes will follow this approach and in good weather diagonal lines across a slope are quite straight forward, but remove the visibility and this quickly becomes a challenging nightmare. If you can, plan your descents to be straight across the fall-line, descending to a set altitude and then add a contouring traverse to cross the slope to reach the same location. These descents and traverses can be short or long, giving you the flexibility to cope with diagonal slopes of all sizes.

In ascent on skins the navigation becomes much more like winter mountaineering, making use of pacing and timing of height gained. Pacing on skis can be extremely accurate; you can use the graphics on the skis to maintain a set pacing length and the skis will also prevent you from stumbling around in soft snow like you would when on foot. If you skin at a set pace with a consistent rate of ascent then this can also be used to calculate distance travelled, for example a comfortable skinning pace could be 300m vertical per hour. When skinning, it is also possible to maintain a compass bearing even whilst zig zagging up a steep slope. Each zig or zag will need to be the same length and the height gain between each kick turn will also need to be similar; this uniformed approach will create a corridor aligned with your compass bearing. The kick turns at each end of the zig or zags can also be used to align a back bearing allowing you to maintain your accuracy and direction.

The best approach to perfecting your navigation on skis is to put in some practice; you will need to reflect on your systems and the organisation of your kit. Whilst the skiing might not be truly memorable, the satisfaction and smugness that comes from navigating out of the whiteout exactly as you planned is just as rewarding.

If you find yourself skiing into a daunting whiteout then just remember the sage words of Obi Wan; 'Use the force!' ■



Andy Townsend is the Head of Skiing at Glenmore Lodge, Scotland's National Outdoor training centre. Andy is an IFMGA Mountain and Ski Guide and member of the British Mountain Guides.



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KEEPING DRY AND STAYING WARM

WORDS BY NICK CANNON JONES, ALUN POWELL AND ROB PUGH

We don't normally publish reports from CPD events in this magazine because we feel that the association websites are generally the best place to store these.

However, this was a remarkable cross-association pilot event about a subject that affects us all – clothing for mountain activities.

In what might be the biggest collaborative workshop so far, 26 members of the four associations and even a Cumbrian Blue Badge Tourist Guide met at Kendal Wall for a fascinating workshop, delivered by the co-authors of the forthcoming book 'Keeping Dry and Staying Warm'.

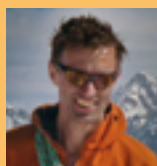
Mike Parsons (former MD of Karrimor International, founder of the OMM Mountain Marathon etc) and Mary B Rose (Textiles Historian and retired lecturer from Lancaster University – Mary lead the Mallory Everest Clothing Project, re-creating the clothing systems used on the 1924 Everest Expedition, amongst other things) are in the process of setting up a 3-level training and education program for retailers, outdoor professionals and design and manufacturing professionals working in the outdoor clothing industry. This workshop was largely based upon the syllabus for level 2.

Part 1 The science

This section looked at Human Thermoregulation, fuelling and refuelling and the five Mechanisms of Heat Loss – (Conduction, Convection, Radiation, Evaporation and Respiration).

Some key takeaways:

- **We are constantly losing water through our skin** – directly by insensible perspiration and when sweating is triggered by skin sensors and the hypothalamus.. This is important to understand because managing the transport of this water through clothing systems is fundamental to staying warm and comfortable.
- **25% of our food energy is used for moving, 75% turns into heat** – i.e. in the outdoors, we are totally reliant on food to keep us warm, so nutrition is very important.
- **It takes 22 hours for depleted glycogen reserves to be replaced in our muscles** – i.e. start eating straight away after coming down off the hill – hitting the supermarket is more important than hitting the bar! Protein also aids recovery.
- **Water conducts heat 30-50 times faster than air** – and also has a very high heat capacity, so you lose a lot of body heat very quickly when clothing gets wet.



Alun Powell is a British Mountain Guide and director of the guiding company Alpine Guides. www.alpine-guides.com



Nick Cannon Jones is an experienced MIC holder, offering a variety of rock climbing and mountaineering courses. www.morethanmountains.co.uk

Part 2 The technology

The afternoon session looked at different materials used in garments, how the fabrics are made, their different uses and construction techniques, how layering systems work and the science behind managing water transport through layering systems, breathability, wind resistance and waterproofing etc.

Some key takeaways:

- **For lofting fabrics, compressibility and water absorption are very important** – high lofting also means highly compressible, so think about what you are putting over the top and what happens if/when the garment gets wet. The latest “Hydrophobic” down is now very resistant to wetting out.
- **Denier gradient fabrics only wick in one direction** (e.g. Powerstretch) – these are worth looking out for, as they are much more effective than standard wicking fabrics which do wick inwards as well.
- **DWR coatings are going to get worse!** – most brands are switching to ‘greener’ non-PTFE alternatives, which don't work as well. Either buy a new waterproof jacket now, or get used to washing and reproofing your jacket more often in the future.
- **Air permeable, synthetically insulated mid layers are good** (e.g. Polartech Alpha fabric, Arcteryx Proton jackets) – more ‘breathable’ mid layers.

To summarise, the workshop was a very informative day and we would encourage anyone to buy the eBook when it comes out. The other great aspect of the day was meeting up with such a wide variety of different outdoor practitioners - this was something I think we all appreciated. ■



Rob Pugh is a Mountaineering Instructor and AMI's North West Regional Representative. E rob@unlimitedtraining.co.uk

THE NEW CLIMBING SCHEMES



WHY?

On 2nd April three of our current climbing qualifications will change

WORDS BY GUY JARVIS

The Single Pitch Award will become the Rock Climbing Instructor, the Climbing Wall Award will become the Climbing Wall Instructor and the Climbing Wall Leading Award will become the Climbing Wall Development Instructor. The Coaching Scheme is also increasing its scope to include outdoor climbing and the Mountaineering Instructor Award has been updated with revised guidance notes.

This is the culmination of phase 1 of the Mountain Training Climbing Awards Review. Phases 2 and 3 will see the introduction of a new Indoor Climbing Assistant, four Rock Skills courses and the Rock Climbing Development Instructor. Following this will be a review of the pathways to gaining the Mountaineering Instructor qualifications. So why is all this happening, and what might it mean for you?

Why change?

In autumn 2015 we began the process of reviewing our climbing qualifications to determine whether they were fit to serve the needs of the outdoor sector into the 2020's and beyond. We recognised that the sector had changed greatly over the last 15 years. Traditional outdoor centres and school-based outdoor education programmes had declined while freelance instruction, indoor climbing, bouldering centres and commercial provision have all grown. We wanted to achieve the following objectives with a root and branch review of the whole pathway:

- To increase the diversity of instructors, more reflective of modern society.
- To enable progression through scheme pathways, thus encouraging onward development.
- To develop high quality instructors who reflect the ethos of Mountain Training.
- To enable a process that values prior learning and experience, upon which good judgement depends.
- To create strong bridges from participation into Mountain Training qualification pathways.

We want to be better at training up, not filtering out candidates.

Research findings

After gaining a lot of feedback from a wide range of qualified individuals and organisations within the sector we commissioned an independent report from the University of Central Lancashire. They surveyed over 1,400 instructors and 173 organisations for their views. Their conclusions were:

- The need to strengthen the 'Instructor' role. Organisations wanted more than just supervisors - they wanted the ability to inspire participants and foster their development.
- The need to develop teaching skills throughout the qualifications, thus enhancing the instructor role.
- Support for an assistant role in the earlier qualifications was strong. Our qualifications were often seen as difficult to access and nearly half of all the organisations surveyed ran their own

in-house schemes.

- The importance of learning from and maximising experience was highly regarded by award holders and organisations alike. The quality and variety of this experience was seen as key.
- The need for trainer education. Good instruction requires more than just decision making and technical skill and training courses also need to address the role of supporting participants' development.

What have we come up with?

After thousands of hours of research, discussion, drafts and consultation we have come up with a suite of schemes that we believe will deliver our objectives.

So what's changed?

Activator schemes: personal skills and assisting
We will introduce Rock Skills courses, the Indoor Climbing Assistant and in-house bouldering supervisor guidance to create pathways into our instructor and coaching schemes. These will appeal to a wider range of climbers and volunteers allowing them to gain experience and confidence in their skills before moving on to instructing qualifications if they wish. Rock Skills, the Indoor Climbing Assistant and the Coaching Scheme will be accessible to under 18s to bridge the gap from youth participation into instructing and coaching. The Coaching Scheme will also be accessible for boulderers providing a strong pathway for this fastest growing climbing discipline.

Instructor qualifications

The Rock Climbing Instructor and Climbing Wall Instructor now have more defined teaching skills than their older versions. Candidates will be expected to be able to learn about and demonstrate basic teaching techniques that will make them more capable instructors. There is also content on managing assistants safely and effectively; something that is common practice in the sector.

The Climbing Wall Development Instructor and the new Rock Climbing Development Instructor will allow individuals to develop participants' climbing skills over time. This requires an individualised approach to planning, observation and giving quality feedback. Given that this may involve the teaching of lead climbing in a single pitch (indoor or outdoor) environment they require high levels of experience and judgement in their respective domains. Once this latter scheme is in place we will review and may revise the pathway to our Mountaineering Instructor schemes. ■



Guy Jarvis is the Executive Officer for Mountain Training England. Previously to this he was Director of Training at Undercover Rock in Bristol where he founded the National Indoor Climbing Award Scheme. He holds the Mountaineering Instructor Award and the International Mountain Leader qualification.



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PART 1

Outdoor

coaching

ABOVE Climber high stepping. It is clear that transferring weight to the left foot in this position is not possible.

Recently the demand for outdoor sport climbing coaching has increased hugely. Because I regularly deliver performance climbing courses, I have noticed some patterns in the way climbers tend to move.

WORDS BY TREVOR MASSIAH AND PHOTOS BY ALUN RICHARDSON

Much of this might be down to the way we as humans naturally move on natural rock but it's also possible that the nature of artificial climbing is playing a large part in developing a pattern of movement that is at odds with the way you would ideally want to move on rock.

Having been a climbing instructor for over 30 years it seems that much has changed – both physically and in the way people move. Clients are generally fitter and stronger, the grade they climb is generally higher than it used to be, but the gap between the grade people climb indoors compared to outdoors seems to be widening. What I find most interesting is seeing a well-established pattern of movement which is very similar from one climber to the next. Before climbing walls became popular, instructors would most likely be introducing someone to climbing for the first time and find the novice presented a “blank canvas” to coach movement skills. These days however, the average client has already been climbing indoors for about two years and has a well-established pattern of movement.

When modern climbing gyms appeared on the scene in the early

1990's they were very much seen as a place for climbers to train, build and maintain fitness during times of poor weather and the long dark winter months. But how well do they work nowadays for the new climber looking to progress outdoors?

What is the pattern of movement that climbing on artificial walls tends to encourage?

Climbing indoors likely develops a pattern of movement that is best described as: a high, often wide step (anything above the opposite knee is a good indication of what might be considered high), very little sideways movement of the hips if any, then pull on the arms before rocking over the high foot. This move is usually executed with a trailing back leg (a heavy limb weighing you down as you try to move up). This is about as inefficient a move as you can make!

Of course, there comes a time when a high step rock over is necessary. However, if we are just doing so out of habit and missing the easier options when available we are unnecessarily wasting valuable upper body strength.

1. Climber moving up in a high step position. Notice the angle of the upper leg. When pressure is applied, the body will move away from the wall as it moves up, applying more pressure to the hands and arms. 2. It is not always possible to make small and narrow steps with the feet on hard routes, which is why they are hard of course. If we are making high and wide steps unnecessarily and out of habit we are however making things harder for ourselves. 3. Coaching course in Kalymnos, demonstrating how a high foot limits the climbers ability to shift weight over the foot. 4. Poor handholds can be easier to hold when the feet are directly under the body taking weight off of the arms.

What makes us more likely to establish this pattern of movement when climbing indoors?

The limited options of foot placements on an indoor wall compared to rock, combined with the difficulty in smearing can greatly reduce the opportunity to practice and develop basic movement skills – if we choose to climb the routes as they are set.

When climbing outside, especially on the easier routes, an almost limitless number of foot placement options are available.

Indoors however, in order to make routes harder, the holds will become fewer and further apart, smaller but still obvious. Once a climber progresses through the grades they are often left with little option but to be climbing out of position (i.e. off-balance) – with their feet much wider than the body’s centre of gravity and too high to be able to shift the hips sideways over the high foot in order to be balanced over the foot prior to the body

moving upward. If this sideways movement does not happen it causes an over reliance on the upper body. When making the transition to the outdoors, climbers are unnecessarily repeating these moves. They move in a way that their body has become accustomed to; high-step, pull with arms, rock over. The feet are moving past perfectly good footholds to recreate a body position that feels ‘natural’. In reality, it’s a bit more complicated than this – but this is essentially how almost everybody is moving on the first day of a coaching course: pulling instead of pushing. *(Incidentally this is often replicated by “newbie” ice climbers.)*

What might constitute an efficient climbing pattern for real rock?

Place your foot on to a hold, then transfer the body weight onto the foot by moving the hips over the foot. It is possible to do this without the body moving up. In fact, if the body moves down as it



moves sideways the arms can usually straighten. When fully balanced over the high foot, bend the knee of the opposite leg and use the hip joint to raise the leg and foot until it reaches the next foothold. All of this can be done without the hips moving in an upward direction. Now the body can be pushed up by straightening both legs; generating the upward momentum from the legs rather than pulling on the arms.

Climbing a ladder

If the aim is to use the legs to conserve our arms then it might be useful to think about a common metaphor: “*as easy as climbing a ladder*”. What makes a ladder easy to climb? How would you design a ladder if you were going to make one? I find this analogy a good place to start when coaching outdoors.

The rungs would be close together below knee height and the width no wider than the hips. This way the feet are always directly underneath the body and never outside the width of our body. Making moves where our high foot is relatively low and easy to execute with minimal upper body strength. However, as soon as we take our foot above the opposite knee, pressing up from one leg starts to get hard so we tend to pull with the arms. The same is true when the foot is beyond the width of our body. If we don't move our hips sideways over the high

foot before lifting our back foot then our arms are holding a good percentage of our weight and we are therefore out of balance. Of course, it is not always possible even when climbing on rock to keep your feet within body width, but the more confident and skilful the climber is in their footwork, the more able they are to avoid being drawn out of position by bigger footholds that might not be best-placed for transferring weight onto.

Having a push-focussed movement programme allows us to maintain our form, and to easily recognise when we are choosing to go out of position and are no longer able to move our hips over the lead foot.

If we can recognise this we can more easily select the correct body position in order to execute the next move efficiently.

In part two I will be looking at how to analyse climbing movement and also use the climbing gym effectively to develop efficient movement. ■



Trevor Massiah is a Mountaineering Instructor based in Spain and is the owner operator of Rock and Sun which runs climbing and bouldering courses and holidays in many parts of the world. He has been working in the outdoors for 33 years and has climbed extensively around the world. His favourite crags are Pembroke, Taipan wall and the Needles California. He has put up many new routes – both trad and sport – in the UK, Thailand, Australia, China and India, and is currently involved in rebolting existing routes and developing new routes in Thailand and Costa Blanca.

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SUB-CONTRACTING: INSURANCE PERSPECTIVE

WORDS BY BRUCE HOGG

Lockton's insurance specialists have produced an updated perspective on the issue of sub-contracting work within our industry as guidance. Lockton currently provide the Ascend Insurance Scheme for AMI and MTA members, launched in April 2017.

In general, it is recommended for professional instructors working independently to hold their own insurance cover appropriate to their activities. In many situations, it would be reasonable to believe that a bonafide subcontractor relationship exists. The nature of your work dictates that individual instructors will act remotely and make decisions independently.

When do Freelance Instructors need their own personal Public Liability Insurance?

Short answer: When they are working exclusively for themselves or responsible for the specific content and delivery of their own activities on behalf of someone else.

In some situations there may be an advantage to a principal instructor subcontracting out work, or engaging a labour-only freelance instructor as an employee. It may be that either is possible, but the key is to ensure a relationship is established and formalised in writing and that insurance is in place to cover the actions of all involved.

First and foremost you should do your due diligence. Does the freelance Instructor hold the appropriate qualifications and experience to undertake the activity? Secondly, If acting independently to you they should be deemed a bonafide subcontractor and provide evidence of their Public Liability Insurance. This should provide no less than a £5m limit of indemnity ideally.

Alternatively, if they are working under your control and management and **not** making decisions independently then they should be deemed a labour-only freelance instructor and effectively they would become an 'employee' from a legal perspective.

At this stage you need to ensure you have the appropriate cover. Therefore, if you only have a policy covering you as an individual instructor you need to contact your Insurance Broker and upgrade cover. Public Liability needs to be extended to incorporate the actions of others

working on your behalf and Employers Liability is necessary.

If you have a policy for a company with more than one Director/Principal you should already have the appropriate cover, providing you do your due diligence. However, you should speak to your Insurance Broker and ensure this is the case.

A freelance instructor accepting work must be assured of the nature of their relationship.

It is recommended that freelance self-employed instructors in the outdoor industry hold their own policy to cover them for their actions when working independently, regardless whether they are working independently, on behalf of another instructor or as a bonafide subcontractor.

The following case studies give examples of working scenarios and the correct way of managing them:

A Peak District Mountain Leader has a client who wants to progress onto winter climbing. The Mountain Leader engages the services of a Mountaineering Instructor Certificate (MIC) holder based in Scotland to lead their client for a weekend.

The MIC is engaged as a subcontractor. They are working independently and with their own equipment. They are a bonafide subcontractor working on a contract for service basis. Typically a Letter of Engagement or Contract would be signed and agreed by both instructors to make this clear. The principal instructor needs to be assured that the subcontractor holds appropriate insurance for the work. There is likely no contingent insurance cover within the principal instructor's policy should the subcontractor's insurance lapse.

The principal instructor would be expected to perform some due diligence in ensuring the instructor appointed as subcontractor is appropriate for the work, particularly if not known personally. This may involve a qualification/experience check and logbook review.



Bruce Hogg is a broker at Lockton Companies LLP and has worked within the sport and leisure sector for several years finding insurance solutions for groups and individuals. Bruce collaborated with the AMI and MTA to create Ascend Insurance, which a large volume of members have exclusively benefited from since its launch in April 2017.

The principal instructor is to an extent protected by their own Public Liability Insurance if they are negligent in the appropriateness of subcontractor appointment, e.g. they unwittingly engage an unqualified/inexperienced/incompetent instructor. There are limits to this, and it's worth checking your insurance policy.

A company running charity abseils engages a freelance Single Pitch Award holder as an additional member of staff on the day of an event. The instructor is paid a daily rate only (no PAYE) and is expected to provide his/her own PPE. They work on the day under the direction of a company director or senior member of staff who holds the Mountaineering Instructor Award (MIA).

The instructor follows the risk assessments, method statements and related policies of the company who appoints them, using the company's equipment for rigging and equipping clients. They are engaged as a labour-only freelancer on a contract of service basis. 'Company' insurance should cover their actions as an employee. You would need to ensure that you hold Employers Liability Insurance and that your Public Liability is extended to incorporate the actions of employees.

If the freelance instructor holds an MIA qualification, and is at times working independently on the day, does this change the relationship above?

If the self-employed instructor still follows the policies and practices of the company, uses their equipment and follows their guidance, then usually not. They would still typically be considered an employee. They may offer more technical input or be more involved in decision making on the day,

but still as a labour-only freelance instructor and covered as an employee. There may be some interpretation regarding the specific circumstances and actions relating to the specific event.

An example of a bonafide subcontractor relationship on a contract for service basis in this situation may be where multiple abseil events are running on the same day at different locations. The principal charity abseil company engages the services of another company/sole trader who use their own equipment and work independently on the day at their given venue.

An Approved Provider runs a Mountain Training course. The Provider may run the course themselves as a Course Director, or bring in a Course Director. Sharing work between Providers is common and Course Directors frequently work on each other's courses. The syllabus and course content is created by Mountain Training not the Provider, though they have flexibility over delivery style and structure.

This is readily recognised as a subcontracting relationship, and both the Provider and the Course Director need to hold appropriate cover. This may also be the case if a Provider brings in additional instructors to deliver the course alongside the Course Director to meet ratio requirements.

Please understand that this information is provided for guidance only. It is not possible to provide detailed advice in this manner for every possible scenario or individual situation that members experience. ■

Members of **AMI** and **MTA** can visit the website to learn more about the **Ascend Insurance** scheme and see if Lockton can provide you with a competitive option on your insurance.



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Mike Pescod



MIKE PESCOD ON MINUS TWO GULLY ON BEN NEVIS

REWILDING A CHANGING LANDSCAPE

Just over 10 years ago, I returned to the Lake District after living in Australia for about 5 years. It was strange being back in a temperate climate with lush green vegetation covering the mountains; a stark contrast to hot, dry days, with tall sandstone cliffs covered in Eucalyptus trees.

WORDS AND PHOTOS BY LUCY DUNN

But it was good to be back. I had missed the mountains of home and I threw myself back into fell running with a vengeance. I spent many long days out, training for and competing in various fell races such as the Borrowdale and the Wasdale fell race, so I definitely covered some ground. When I was running it was the views and the landscape that I enjoyed the most; pushing hard to a summit, pausing for a few moments to take in the surroundings, as I caught my breath before launching off for the descent. That was what made my days enjoyable.

I have always been interested in wildlife and nature, but it was only when I started to slow down from running and spend more of my time walking and 'trotting' that I really began to think about the flora and fauna of Britain and I started to compare this to my experiences in Australia.

In Australia, I lived in the Grampians National Park and near to the world-renowned climbing area of Mount Arapiles in Victoria. I spent most of my free time climbing and walking and there are many differences that stand out between Britain and Australia. Walking in Australia generally involves following a path of little dabs of orange paint on rocks to guide you as you wind your way through the bush. I would spend most of my walk in dense vegetation, wondering when I was going to get a view.

The key difference however, was that in

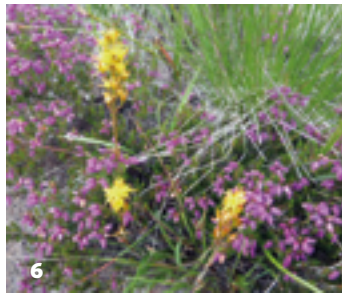
Australia I saw more wildlife. As I walked through the low level bush I was surrounded by the sounds of kookaburra's calling and sightings of brightly coloured blue and red rosellas. Rock wallabies and kangaroos would often bounce across the track in front of me. Goannas, prehistoric looking lizards, would either stride out in front of me or run up a nearby tree. On one occasion, I also saw an echidna merrily digging away in the sand.

In the Lake District, I have also had some great days where I have seen kestrels hovering over the heath, wheatear on the path just in front of me, herds of red deer bounding up the hillside and voles darting about in the long grass. But my days out in the Lake District were definitely more about views and the landscape. A clear day gives you a stunning 360 degree view of open fells, mountains, crags, waterfalls, rivers and lakes. When I made the transition from fell running to walking I had more time to take this in. The more I thought about it the more I realised that there was something missing...yet how could that be as the landscape had not changed a great deal during my absent years in Australia and also in my lifetime? It was what I had grown up with.

In his book *Feral*, George Monbiot (2013, p.69) discusses "Shifting Baseline Syndrome", a concept formed by a fisheries scientist Daniel Pauly. It is the idea that we all perceive our surroundings that we grew up with to be normal. Therefore, the deforested



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MAIN PHOTO Lake District view.
 1. Wheatear. 2. Kestrel. 3. Red deer.
 4. Butterwort. 5. Sundew. 6. Bell heather
 and bog asphodel.

mountains of the Lake District with the stunning views are in theory what should be normal to me.

However, the landscape we see now has changed vastly over the last 7000 years, from when Britain was almost completely covered in deciduous woodland (Yalden & Maroo, 2000). In the Lake District evidence of this can be seen in the summer by the presence of foxgloves and dog violets high on the fells. Traditionally woodland plants, they still grow on the hillsides but indicate that there may also have once been trees with them. With more woodland and less persecution by man, there would also have been large mammal communities such as brown bear, elk, wolf and lynx (Yalden & Maroo, 2000).

When man arrived, they began to clear the majority of the woodland, which was replaced by farmland, heath, bog and chalk grasslands. The introduction of domestic livestock by man such as pig, cattle and sheep would have changed the land further due to grazing and trampling (Yalden, 1999). In many areas including the fells of the Lake District that have been subjected to heavy grazing by sheep, there is now a general lack of diversity and a lot of grass and scrub (Monbiot, 2013).

In some areas of the uplands there is a variety of flora to see if you look hard enough. Bell heather, ling and cross-leaved heath cover a lot of upland areas and admittedly this is still lacking diversity, but you can also find plants such as tormentil, heath milkwort and lousewort. In the boggier and wetter areas there are various species of sphagnum moss, sweetly smelling bog myrtle, brightly coloured sundew, bog asphodel and butterwort with its stunning purple flowers in spring. There are also lichens such as devil's matchstick and upland mosses such as fir clubmoss and alpine clubmoss.

But George Monbiot and many others would argue that there are

vast expanses of our landscape that are degraded from their former diversity and it is just that we now accept that this is normal.

For those of us who venture onto the fells and mountains for the views or for that feel good factor from being out all day, what does it actually matter? When we talk about rewilding, what do we actually mean and what are we actually trying to achieve? It is impossible to go back to 7000 years ago, to our completely forested wilderness, as to do that we would have to eradicate man! We can't just reintroduce all of the lost species onto our bare hills as it currently stands as the habitat is just not there to support some of them and the whole ecosystem has changed.

We now live in a world of progression. We don't just live off the land, we now venture into the mountains for leisure, educational and health reasons. Our cultural connection to the land has changed. We now live surrounded by gadgets, such as GPS and smart phones with numerous apps, which has allowed us to take technology into the mountains with us.

However, although we have changed the landscape and how we use it, it doesn't mean that we have to accept that this is how it should remain. Instead of moving back, we can move forward and reintroduce some of the flora and fauna that we have lost. We have already made some progression with this and protection and conservation of areas has helped. In the next edition, I will address these issues further and write more about the current situation with rewilding and the current projects to rewild some areas of the UK. ■

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RIGHT White-tailed eagle.
© BTO/Edmund Fellowes.

WHITE-TAILED EAGLE

WORDS BY SUE HAYSOM

Vital Statistics

Length: 80cm

Wing-span: 220cm

Weight: Male 4.3kg, Female 5.5kg.

Habitat: Largely coastal but also inland near large lochs. Nests on steep cliff edges or trees.

Food: Fish, birds, mammals, eggs, carrion, will steal food from other birds.

Voice: Female's call an octave lower in pitch than the male's which is reminiscent of a yelping puppy.



Sue Haysom is a professional ecologist, Mountain Leader and owner of Greyhen Adventures.

The thirteenth in a series of articles on wildlife by Sue Haysom, Mountain Leader.

Contrary to expectation, perhaps, white-tailed eagles are not upland birds. Their breeding sites are associated with coastline, inland waterbodies, forests and flat land. These giants of the skies were once widespread across Britain and Ireland but currently the Outer Hebrides, Wester Ross, Skye and the Small Isles and north Argyll form their four key breeding areas. In 2017 there were at least 113 pairs of white-tailed eagles in Scotland, the remarkable results of a reintroduction programme.

Prior to their reintroduction the last Scottish white-tailed eagle was shot in Shetland in 1918. They had become rare through the alteration of habitats by man – clearance of stream-side woodlands and inshore fishing. The expansion of sheep farming after the Highland Clearances brought the birds into direct conflict with man so, in addition to collectors, they became a target for gamekeepers and shepherds.

The reintroduction programme included three release phases, two on the west coast in 1975-85 and 1993-98 and one on the east coast in 2007-12. Recent modelling suggests the population could grow to over 200 pairs by 2025 and almost 900 pairs by 2040. This success brings potential for

more conflict hence trials are underway seeking new methods to reduce the impact of sea eagle predation on sheep farming.

Cultural history reveals a more complex relationship with these birds. Six of their Gaelic names such as *Iolaire chladaich*, shore eagle, are purely descriptive; the lyrical seventh *Iolaire siùl na grèine* – eagle of the sunlit eye hints at admiration. Carvings of eagles on Pictish symbol stones imply a totemic role whilst discovery of the remains of at least eight birds inside the 'Tomb of the Eagles' in Orkney initially suggested a role in Bronze Age funerary rights. Radio-carbon dating shows that the birds were placed there up to 1000 years after the chamber was built, their significance remains a mystery.

- Q What can *you* do for white-tailed eagles?
- A Recognise, celebrate and record them via *BirdTrack* or by emailing your sightings giving grid reference, site name, date and number seen to whatsup@bto.org.
- Q What can white-tailed eagles do for *you*?
- A Illustrate the complexity of our relationship with nature. ■



ABOVE Ben Nevis summit from the Aonach Eagach.

How to stay informed about the environment

WORDS AND PHOTOS BY DAVID BROOM

To inspire, enthuse, educate and engage. This sums up the duty that all leaders, instructors and guides have to their clients and groups in providing a rich and fulfilling experience.

Time spent with a professional should benefit from a knowledgeable interpretation of the landscape, whether these are the genteel landscapes of the leafy lowlands or the rugged, wild landscapes of hills and mountains. Whether our clients and groups are engaged in a guided walk or a course of technical instruction we will always have opportunities to draw upon the beauty, interest and fragility of the landscape to bring interest and colour to our time outdoors.

As members of an association we benefit from handbooks, features in The Professional Mountaineer and CPD workshop opportunities that help us to achieve a good knowledge of landscape interest features. However, the character and quality of our upland and lowland landscapes are not static. They are influenced by changing attitudes towards conservation, political aspirations and by the impact of major development projects. Our challenge is to remain up to date in our knowledge and understanding of these influences.

In this article I describe a number of environmental organisations that can help us meet this challenge to remain well-informed on environmental conservation issues of importance to our work. These organisations undertake environmental education initiatives that help to identify and articulate landscape conservation topics of great relevance to members' interests. They also undertake valuable conservation management projects within areas of iconic upland and lowland landscape, ranging from footpath erosion control to complex ecological restoration programmes. Some of these organisations are involved in lobbying and campaigning to promote important aspects of wise and sensitive landscape conservation.

John Muir Trust (www.johnmuirtrust.org)

If you had to create an environmental organisation that could best support the access and environment work of association members it would look a lot like the John Muir Trust (JMT). Formed in 1983, the JMT is a UK charity dedicated to the protection and enhancement of wild places. This is achieved through ownership and management of iconic upland landscapes, including land on and around Ben Nevis, on the Isle of Skye, within Knoydart, across Scheihallion, at Glenlude in the Borders, on Quinaig in Assynt and at Sandwood in Sutherland. More recently, the JMT has taken on responsibility for the management of Glenridding Common in the Lake District which includes Helvellyn. The JMT administers the John Muir Award, helping schools, outdoor centres, youth groups, adults and families connect with, enjoy and care for wild places. The tireless lobbying work undertaken by JMT policy staff helps to keep wild land conservation issues high on the political agenda.

The JMT's work on habitat management within their properties, on environmental education programmes to support the John Muir Award and campaigning activities are of direct relevance to association member's access and environment interests. The JMT produces fantastic publications, informed by experts and containing just the right amount of information on key wild land conservation topics. I used JMT information to good effect in my Mountain Leader preparations many years ago, and continue to benefit from my membership of the Trust in my work as a Mountain Leader trainer and assessor.

The John Muir Trust has kindly agreed to offer a 25% discount on membership costs for MTA members. Visit the online MTA members area to retrieve the special discount code.



ABOVE MTA members on a CPD workshop viewing peatland restoration work undertaken by the Moors For the Future project on the Kinder plateau.

Moors For the Future (www.moorsforthefuture.org.uk)

Moors For the Future (MFF) is a project based in the Peak District National Park that is an example of an environmental interest group that is focused on a specific area of upland conservation of great importance to association members' work: the rehabilitation and conservation of Britain's peatlands. MFF is not a membership organisation but creates many opportunities for volunteer involvement in its peatland rehabilitation and conservation projects. These are well-run, and typically lead by knowledgeable and enthusiastic MFF staff. MFF work is gaining an international reputation for the development of ecological rehabilitation methods that are having a significant impact on reversing centuries of peatland degradation in the Peak District and South Pennines.

Involvement with MFF projects provides a thorough understanding of the global importance of Britain's peatlands, their fascinating ecology, the causes of their degradation and the rehabilitation methods that are being used within MFF project areas. I have enjoyed volunteering on MFF projects, and they have always enriched my understanding and enjoyment of our important peatland landscapes.

Trees for Life (treesforlife.org.uk), **Reforesting Scotland** (www.reforestingscotland.org), **Carrifran Wildwood Project** (www.carrifran.org.uk) and **Wild Ennerdale** (www.wildennerdale.co.uk)

Trees for Life, Reforesting Scotland, the Carrifran Wildwood project and Wild Ennerdale are four more interest groups and initiatives that are focused on specific aspects of upland conservation: rewilding and native woodland regeneration within the uplands. These organisations achieve their objectives through award-winning ecological restoration

and rewilding projects that have a powerful commitment to environmental education. As with the other organisations I have included in this review, they provide opportunities for membership, use of their literature and volunteering on their projects. These activities will provide members with fantastic opportunities to keep up to date with developments in upland ecological restoration and rewilding from a group of organisations and projects that are at the forefront of this important aspect of upland conservation.

It is important to remember that training courses at all levels are expected to provide sound instruction on interpretation of wildlife, habitats, geography and landscape conservation. The ability to communicate this knowledge with enthusiasm is a core requirement of our award schemes. It is also important to remember that assessment candidates can be deferred if they fail to demonstrate adequate knowledge and understanding of these important topics. Through membership and involvement with organisations such as those I have included in this review association members will have no difficulty in keeping their knowledge current. They will also have the satisfaction of supporting organisations that support our access and conservation priorities through their land management, lobbying and environmental education work. ■



David Broom has been an active hillwalker, climber and mountaineer for over 30 years, is a qualified ecologist and Mountain Leader and works as an Instructor on Mountain Leader training and assessment courses in the Lake District for Mountain Sense (www.mountainsense.co.uk). David runs Access & Environment CPD workshops for the MTA and is on the Board of Trustees for the John Muir Trust.



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AIR POLLUTION

Is the air in the countryside cleaner than in our cities and how clean is the air where I live? Is our air cleaner than it was in the past? Is it just an issue for human health or are ecosystems at risk too?

WORDS AND PHOTOS BY ZOË PROCTER



Zoë Procter is a research scientist at the National Centre for Atmospheric Science [NCAS]. She specialises in the atmospheric transport of air masses and long term trends in trace gases like ozone and NO₂ as well as measurements with low cost sensors. Field work and research has taken her to remote places like Antarctica and the Arctic, as well as polluted cities like Santiago. She is a Mountain Leader and has led young people on field work and on expeditions. E zf5@le.ac.uk

Air pollution has been termed the invisible killer. However, this was not always the case – it used to be much more visible and palpable. The London smogs of the 1950s (and similar situations in some industrial towns of the north) were caused by foggy conditions combined with extremely high levels of particulate matter and soot from open fires and industrial emissions. The Clean Air Act in 1956 in the UK paved the way towards atmospheric emissions reductions, from industry, domestic burning and eventually from vehicles. Cars have had successively stricter emission standards over the last few decades¹. Another success story is the gradual removal of toxic lead from petrol in most countries by 1995.

Air pollutants vs. greenhouse gases

Some people are confused between which gases affect our health and which ones have an effect on our climate. Greenhouse gases like carbon dioxide and methane (CO₂, CH₄) are released from fossil fuel burning and this same burning (including from a vehicle's engine) will also release air pollutants like nitrogen oxide and dioxide (NO and NO₂), carbon monoxide (CO) and hydrocarbons (ethane, benzene, propane etc.) as well as black carbon (tiny soot particles) and aerosols² (tiny suspended particles in the

atmosphere) and these are what are bad for human health. Carbon dioxide levels are rising globally at 406 parts per million (ppm) but at these levels it is not having an adverse effect on human health but, for example, a nitrogen oxide level of 20 parts per billion (ppb) – a 1000 times lower – is harmful for human health.

Human health

It is estimated that 40,000 deaths a year in the UK are attributable to exposure to outdoor air pollution³. In rural areas of developing countries with clean mountain air such as Nepal, women in particular are exposed to extremely high indoor pollution levels from cooking on open fires indoors. Many lifestyle factors affect one's health and the effect of long term exposure to air pollution is difficult to study in isolation.

Air pollution in the UK

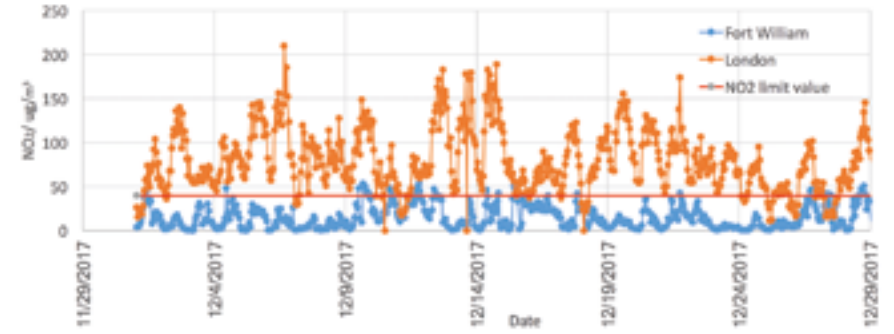
So, how can I find out about air pollution where I live and the mountains where I work? DEFRA is responsible for the air quality monitoring stations and reporting levels and their data is publicly available^{4,5,6}. The chart (top right) shows the NO₂ levels during the last month of 2017 at the contrasting measurement stations of Fort William and Marylebone road, London. The EU limit⁷ for



1



2



3

NO₂ is an annual average of 40 µg/m³ (20 ppb) so you can see that Fort William is well below that, while London is breaching the air quality limit.

Effects on ecosystems

Acid rain used to be a huge problem in the 1970s and 80s, hitting Scandinavia even harder than the UK. Increased levels of sulphur dioxide (SO₂) from industrial emissions would be carried northwards and react in clouds to form sulfuric acid that would fall in the rain. Vast areas of forest and lakes were acidified, harming trees and killing fish. The moorlands of the Peak district, subjected to the westerly winds passing over the industrial powerhouse of Manchester, have suffered acidification over many years since the industrial revolution, affecting the sphagnum mosses and the soil fertility⁸. Nowadays coal-burning power stations that would be huge emitters of SO₂ barely emit any as their emission scrubbing devices are so efficient. However, nitrogen deposition from NO₂ and also from fertilisers is still seen to affect sensitive moorlands. Lichens are often a sign of clean air but learn to identify⁹ them as are nitrogen-loving and nitrogen-sensitive ones.

Seasonal and meteorological effects will also vary the air quality. The Chamonix valley has suffered from very polluted winters due to the

temperature inversions that trap the air low in the valley bottom, stagnating the traffic and household wood-burning fumes. Santiago, a city of 7 million inhabitants at the foot of the Andes and trapped on the other side by the coastal mountains has to announce many emergency pollution days. The Po valley in northern Italy is the region with the worst air quality in Europe; the Alps traps air from this industrial area, causing it to stagnate. On the contrary, when there is more atmospheric mixing of the lower layers in summer, there is another issue that crops up: ozone. Los Angeles and Mexico are cases in point. A build-up of pollutants, heat (which also stresses the vegetation to release more hydrocarbons) and lots of sunlight create high levels of ozone which can be harmful for human health and vegetation. Many of the National Parks in the western US suffer from high ozone, many blaming it on Asian pollution transport. ■

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MAIN PHOTO Smog in the valley above Sallanches on the way to Chamonix.

1. Healthy lichens in clean air.
2. Auchencorth Moss Atmospheric station, CEH Edinburgh (Pentland hills in background). © CEH.
3. The red of a sunset and sunrise is due to the reflection of light through the longer path through the atmosphere when it is near the horizon. If there are more particles (aerosols, sea spray, volcanic ash, Saharan dust) in the atmosphere it will be more red.



ABOVE Inspiring young people. © Mark Richards.

The three stages of teaching

WORDS BY GUY JARVIS

A long time ago I was a young comprehensive school teacher. I cut my teeth in the white heat of the classroom and learnt many life skills that I have continued to use to this day. One day, an older colleague who was a brilliant teacher lent over to me and passed on the following wisdom which has remained with me ever since:

There are three stages to teaching. The first is *survival*. The second is *performance*. The final stage is *learning*.

What does this mean? Well I have spent the rest of my life understanding and passing on this wisdom. It applies to all teachers, leaders, coaches and instructors. I'll outline what it might mean to you.

Stage 1 Survival

When you qualify as a climbing instructor, coach, classroom teacher, mountain leader or trainer you have already learnt and experienced a great deal. But now you are on your own, you are responsible for your group and have to manage whatever curve balls they throw at you. This is scary, but all things really worth doing are a bit scary. You will make mistakes and will need to be very reflective to improve. You will need the support of your peers and will be thinking all the time about how to cope with each situation – all very cognitive. But slowly over time you will react more instinctively and become slicker, safer, more efficient and have a bag of stock answers to stock situations. You will be a *survivor*, stress levels will fall and confidence will rise.

Stage 2 Performance

Now you have the confidence and the head space to focus on teaching and making an impression during your sessions. You will come to know how to size up a group and pitch a good talk to them. You may be able to add a little flair – using humour or story telling for example. You will know your ground, the routes, the subject, you have the moves, the rope tricks, the teaching techniques and you are

developing a relaxed and confident style that engenders trust with your group. Now you feel you are on top of things. Not only do you have the technical skills all polished but you also feel that you can influence a group with your excellent communication skills. You are now a *performer*. It feels good.

But is this the finished article? No, because so far it's been all about you.

Stage 3 Learning

You have to let go of your ego to reach the next stage. Many instructors never get past stage 2. But to really inspire, rather than impress people you have to get inside their heads and think about *their* performance, not yours. Excellent rapport skills and competence in your craft will get you so far, but true inspiration – developing self-belief in a learner's own possibilities – rarely comes in one bright moment. This requires very empathetic and perceptive mentors, who understand how individuals think and feel and who support them while they are in the psychologically risky state of learning a new skill. The stage 3 teacher is able to unlock mental barriers and self-limiting beliefs that the learner cannot even articulate. There are many ways to do this, but this is an art that takes a lifetime to master. The difference is that the effects on the learner are profound and permanent. Life changing even.

So which stage are you at? ■



Guy Jarvis is the Executive Officer for Mountain Training England. Previously to this he was Director of Training at Undercover Rock in Bristol where he founded the National Indoor Climbing Award Scheme. He is also an experienced secondary school teacher of 12 years.



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**Their preparation was short sighted.
Their actions were ill considered.
They had adopted a blinkered approach.
He was very single minded.**



WORDS, PHOTO AND DIAGRAMS BY J.P. EDGINGTON

These are just examples of some ways of referring to negative situations or outcomes where the bigger picture has dropped from view or been obscured and I imagine we've all used or heard similar.

Let's begin with some definitions so we're all on the same page...

The Bigger Picture – The most important facts about a situation and the effects of that situation on other things.

Heuristic – There are a couple of definitions but the most appropriate for our purposes is this: a pattern of thought, mental habit or rule of thumb that eases the cognitive load of making decisions.

Heuristic Traps – When that pattern, habit or rule and subsequent response are not appropriate for the situation or replace the ability to be objective. There have been many articles written on these and a simple internet search will bring up a host of information.

- **Familiarity** – Same venues, client types, course/session content.
- **Scarcity** – Fickle or rare conditions, limited time.
- **Commitment** – Financial, time, promises made to self, clients, others.
- **Social Proof** – Others have done it so it must be ok for me/us.
- **Instructor/expert halo** – Assumption that the expert has all the answers/knowledge required.
- **Acceptance** – The desire to be accepted is a fundamental human trait. Often people will expose themselves to greater risk if they think they'll be accepted more.
- **Normalisation of Deviance** – The erosion of good practice into bad practice to the extent that it becomes common practice.

On initial consideration, it could be thought that normalising deviance, complacency and the falling into certain traps is just the result of laziness, of not bothering. Whilst this might be the case in some situations the real reasons are often more complex yet subtle. The cause for some of these issues can be attributed to a cultural, psychological and behavioural preference for comfort, familiarity and convenience... great qualities for a coffee shop, but less so in a risk management situation where they really need to be kept in check!

Let's consider a simple real life example:

You are crossing Dartmoor at night in the driving rain and howling wind - hoods up and heads down. You're fixated on the beam of your head torch and the next few feet ahead of you, trudging on, wanting to end the immediate discomfort as soon as possible. I'm sure many of us have been in similar situations!

Whilst the effort you're putting in is admirable, it's not going to serve you if you don't stop and put in the extra effort to get the map out and make sure that you're going in the right direction. Yes, doing so will increase the discomfort in the short term but will pay dividends by preventing you from ending up where you really don't want to be! The effort to re-trace your steps or course adjust will be far higher, and the discomfort will need to be endured for much longer than if you make the mental effort to consider the bigger picture and enforce the necessary action.

By losing sight of the bigger picture it becomes far easier to justify a cut corner, more comfortable to push beyond the boundaries of remit or experience or to forgo aspects of procedure that we 'don't see the point of'. Do so for long enough and it's easy to see how it can become the default practice.

When performance lowers – rationalising (rational-lies-ing!) increases.

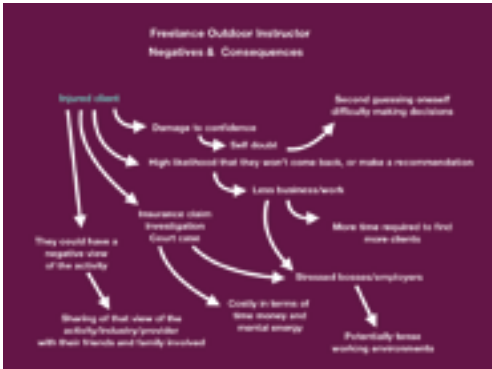
So, what can we do about it? I will focus on some practical exercises that have helped me, both as an instructor and as a coach. If you're anything like me you like a bit of background knowledge but what you're really after are things you can actually implement: theory has its place but without considered application it's not a lot of use.

Let's try a balance sheet approach to articulate our personal "bigger picture". The more mental effort that you put into this exercise, the more you will gain from it!

"Both ends of the stick"

Take two large sheets of paper (capturing things on paper is way more effective than trying to do this in your head) and at the top of both write down what your job/role is.

On one sheet write *Positives and Benefits* and on the other write *Negatives and Consequences*.



The task now is to note on the respective page all the positives/negatives about your job/role and then go into the benefits or consequences of each and expand on them:

- What's the repercussion of each consequence? What's the knock-on effect?
- Think not only of the impact or affect to you and your clients but also your colleagues, family, organisation/ business and maybe even out into the industry.
- Some aspects might appear under both. List them separately or show how a positive could lead to a negative and vice versa.
- Keep going until it starts to get a bit tenuous and then move on to the next one.
- Leave plenty of space under/around each one as you'll be surprised how big your picture can get.

Here's one example of how it might look and for simplicity sake I've only used one positive and one negative.

These are just a couple of examples from my personal bigger picture: yours may be very different – especially if you are not a freelancer!

Once again, don't just try to do this in your head, capture it on paper. Once you've finished, take a moment, sit back and take a good look. What you're looking at here is 'both ends of the stick' and if you choose to pick it up (take on your role/position) then you assume responsibility for both ends, you can't have one without the other.

You've got to have the whole stick too not just the bits that are easier, comfortable or more convenient... keep this somewhere safe, keep referring back to it and chances are you'll be able to add to it as time goes on.

Now that we have reminded ourselves of the bigger picture, in the next issue, we will explore practical steps to combat any tendencies towards comfort and convenience to minimise or negate those negative effects. ■



JP Edgington holds the Mountaineering Instructor Award and is a member of AMI. He runs his own business – **The Outer Edge**, providing mountaineering activities, charity challenges and risk management. John also offers workshops based on the principles in this article.

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THE LEADERSHIP CLINIC

ABOVE Solving a bouldering problem at RAC Boulders. © John Cousins.

We've heard lots in previous issues about transformational leadership, but how might you apply it to specific situations?

WORDS BY SAMANTHA McELLIGOTT

This issue will see the start of a series of 'clinics' designed to respond to readers' questions about how to implement the 'INSPIRE' behaviours in specific contexts.

Our first question focuses on the problem of demonstrating transformational behaviours when you have time constraints, for example a brief one or two hour coaching session. We initially examined this last summer, and being able to prioritise the behaviours was the take-home message, but let's look deeper now.

Sometimes we are faced with short sessions, perhaps simply one-off events that do not form part of a consistent coaching relationship. In these circumstances our focus may be on teaching skills, and not developing relationships. The argument, however, is that *any* effort to demonstrate the transformational behaviours will augment learning for your participant(s). When we intend to be the best instructor/coach/tutor we can be, surely this is our main aim?

Again, I hasten to add that these behaviours are about developing your participants, and do not conflict with safety. Safety is paramount, this is the 'value added'.

If we strive to focus on just one or two of the behaviours during the session, for example "*Encouraging them to create and implement their own solutions*", then we can allow them to develop more independence, create greater self-reliance, and embed those learning pathways by allowing them to 'trial and error'. Further, isn't it more fun to just play around with solutions, given the opportunity? And doesn't fun deepen the level of engagement and retention of learning?

For example, how many of you already get your participants involved in any of the following:

- Setting them a bouldering problem to solve?
- Navigating a leg by themselves?
- Experimenting with a paddle stroke, perhaps in both moving and non-moving water?
- Trying out balance with slow-peddalling on a bike?

If yes, excellent! You are already being transformational in your approach. Evidence shows (see previous issues for references) that your followers will be developing beyond their expectations.

Second, we might also find opportunity in our brief period together to "*Set the example we want to see in our followers*". If you are on time, can communicate effectively and thoughtfully, are well presented, are able to use/wear the necessary equipment as it should be, are able to work with other 'team' members (where appropriate), and demonstrate the techniques required, then you are already role-modelling what you want them to perform.

If you role-model the ideal state, this creates an aspiration for your participants to follow. There is no recourse on you, because you are already doing everything you should be, and all techniques are correct and well executed. Don't, however, confuse this with having to be 'perfect'. This is simply about achieving what is ideal, and making small mistakes also shows a level of humility and normality to your participants. This allows them to feel that the goals are achievable, and that they do not have to be super-human to attain them.



INSPIRE Leadership Behaviours

I	Inspire and motivate your followers with a unified vision
N	Nurture an environment of team-focused goals
S	Set the example you want to see in your followers
P	Praise, and give constructive feedback to help your followers develop
I	Insist on setting high standards, relative to each individual
R	Recognise and respond to each individual's needs
E	Encourage followers to create and implement their own solutions

PHOTO LEFT Group member leading a navigational leg. © Jon Garside.

This leads nicely on to “*Insist on setting high standards, relative to each individual*”. If you role-model the ideal state, in other words the highest standard, then they can aspire to that level. This may challenge them, and in some cases be unattainable in a short session, but we can moderate our expectations to suit each individual. If the standard is ‘X’, any progression towards that level is a bonus. Some of our participants may be absolute novices, and we see them for no more than one hour. If they show any progression during that time then that is great, it is a first step on a developing pathway. For some of our participants, this brief session may plant a seed of a greater desire to be involved with the outdoors.

How many of you wish to embed that willingness to learn and the desire to be in the outdoors in your followers? If so, perhaps try using the three examples above, or any of those in the table below, in your next session.

No matter how brief the timescale, there is always something simple and quick that you can do to show these behaviours. After all,

by doing so you are getting more from your followers and encouraging them to greater heights than they thought possible.

If you have a situational question based on how to implement the INSPIRE leadership behaviours that you'd like answered then email it to belinda@mountain-training.org ■



Dr Samantha McElligott is a leadership consultant and has been an active outdoor practitioner and expedition leader for over 15 years. She specialises in research-led leadership development, particularly in the outdoor context. Her research interests include quantitative examination of the impact of leadership; transformational leadership development; and the effects of outdoor learning on outcomes such as self-esteem and teamwork. Samantha lives in Snowdonia, loves adventures at home or overseas, and enjoying days out on the hills with tea and cake to follow.

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BLIND SUMMITS



Look at this photo of an ascent of *Beinn an Dothaidh* some years ago. It shows three of my friends: Hilary, Bob and Graham. Look at their eyes.

WORDS AND PHOTO BY DAVID JONES

Hilary is leading the group and is carefully assessing the path in front of her, deciding where to go next. Graham at the back has a huge smile on his face, and is clearly enjoying the day. But Bob, in the middle, seems more interested in looking at Hilary's feet. Why is this?

Bob has tunnel vision; he sees the world through a camera lens. So he follows Hilary's feet, deciding, step by step, where to put his own feet. Only when the group pauses can he afford to look up and take in the magnificent views.



Bob's story

Bob has Usher's Syndrome, a degenerative condition that affects his hearing and vision. Right now, he is acutely deaf and his field of vision is about three degrees; this means that when he is talking to you, he will see your mouth for lip-reading and some of your face, but nothing else. Bob has always enjoyed hill walking and he won't let his deteriorating sight stop him from carrying on for as long as possible.

So what considerations are there when accompanying Bob on a hill walk?

It's useful to consider how inexperienced,

sighted hill walkers react to a challenging walk. They typically have three levels of comfort:

Level one: a good, well-defined path, clearly laid out in front of them and they have no difficulty walking along it. Everybody is happy at level one.

Level two: the path becomes less well-defined, there are muddy stretches or burns to cross and the route becomes indistinct. Inexperienced walkers start getting a little nervous at this level.

Level three: there may be boulders to scramble over, hands may be needed and there may even be some mild exposure. People often become particularly nervous at this level.

For partially sighted or blind walkers, the same three levels exist, but levels two and three are the other way around. At levels one and three, all they need is a few words of advice and loads of encouragement; "turn to your left a bit", "watch out for the overhanging branches", "move your left leg up a bit", "there's a good hand hold to the left of this boulder", etc. Partially-sighted walkers rarely suffer from exposure; they can't fear what they can't see.

But level two is tricky. Each and every step is a step into the unknown. They won't know if a particular step will hit solid rock or soft mud; they won't know if it will land at the same level as the previous step; they won't know if the ground is level, or sloping up, down, left or right. In short, walking at level two can be treacherous for the partially-sighted.

David Jones is founder, chairman and principal guide at **Walk-ability**, a new Scottish charity planning and guiding hillwalks for the disabled and their carers. For more information, go to www.walk-ability.co.uk.



A guide may not need to offer advice at every step, but they will certainly need to be monitoring every step. On occasions it may be prudent for them to offer a helpful arm for the client to hold. Guiding partially-sighted people at level two can be a challenge but it is not difficult. It just requires patience and loads of time. As such, it can be very tiring and progress will inevitably be much slower than normal.

Michael's story

Michael also has Usher's Syndrome, but the condition is more advanced and he is now totally blind. Despite being well into his 70s, he keeps fit by running. In his earlier years he was a keen hill walker and sees no reason why he shouldn't continue.

In this photo he is being guided by his daughter Jane, carefully positioning herself just to the left of the easiest track.

Although he can no longer see anything, he is keen to know about the surrounding landscape. Jane will be telling him about the views; the mountains to their left, the tumbling burns, the lush farm land below them. Jane will also be keeping a close eye on the weather and advising Michael appropriately.

This route from Bridge of Orchy to Killin included a number of tricky river crossings. Even wading through a shallow burn has its problems. A useful technique here is for two guides to use a walking pole as a support. Although Michael is

still holding his daughter's arm, he knows that if he were to slip the pole provides extra stability.

Some of the river crossings involved stepping stones – for each step, the guide positioned the pole for Michael and then tells him to move his foot into that position. It's a painstaking and laborious process, but it reduces the risk of an unplanned dip.

You will also notice that Michael had no rucksack at this point. We had taken it over the river for him. If he were to fall it would clearly be better for him to be as light as possible.

Mary's story

Mary is totally blind and was keen to climb Bennachie, a hill she knew well and had climbed many times before blindness set in and curtailed her walking.

Mary is used to being led by Vince, her trusty guide dog. The dog has been trained to walk slowly in front of her and to pause whenever a tricky step is required.

Vince was, however, more used to busy high streets than to hill walks.

To help her on her ascent we decided to use a human equivalent using a short sling attached to the first guide's rucksack, with two more guides behind helping out and offering words of encouragement. Mary felt comfortable and safe (but note how she still needed her white stick for added security).

MAIN PHOTO Hilary, Bob and Graham.

1. Michael and Jane. 2. Michael and Jane.

3. Wading. 4. Stepping stones.



LEFT Leaving the summit. RIGHT Summit of Bennachie.



Like Michael, Mary was keen to know what views she was missing. However, unlike Michael, she had developed very sensitive hearing over the years to compensate for her poor sight. At one point when we paused to gather our breath, she commented that she heard birds singing and trees creaking in the wind. We had heard nothing, but she was quite right; we had stopped at a small copse and the birds in the trees around us were indeed singing. She was also able to feel the slope of the ground, and had a good mental picture of where we had come from and where we were going.

The final few metres to the summit of Bennachie require a little scrambling (this is definitely comfort level three!) and indeed many sighted hill walkers decide to miss out on this last challenge. Mary, however, was determined to make it to the very top. The ascent was straightforward enough, but slow and laborious.

The descent was trickier. First a guide walked backwards in front of Mary guiding her every step and a second guide followed behind with a sling to provide extra reassurance. Another guide had taken her white stick and rucksack.

Top tips for guiding blind/partially sighted clients

- Chose an appropriate route based on the client's wishes, fitness and degree of blindness (in that order). Clearly some common sense is required, but most routes are accessible to most clients with appropriate planning and preparation.
- Walks with partially-sighted or blind clients will normally take much longer than with sighted ones, so plan for this. Also, remember that partially-sighted clients will probably lose what vision they do have as the light fades, so it is important to be prepared.
- One guide might be sufficient to help a fit, partially sighted client. More will often be required, particularly if the terrain is tricky. The skills required of these guides are no different to the skills they need for other clients, it's just that they may be using them every single step. This can be very tiring.
- The workload may be reduced if partially sighted clients are accompanied by their carers, but it is still important to have an appropriate guide to client ratio. ■

GEAR REVIEW

Tex: Energy Infinite Orbit Power Generating Hand Crank

Review by Al Barnard

Whilst technological advances have given us all the potential to become more frequent communicators, enhanced navigators and improved photographers, all this increased energy use comes at a cost. Several times I've been in the situation where my batteries have packed in. Fortunately, the biggest drama this has created has been missing a photo opportunity as opposed to being unable to raise communications during an emergency!

When I buy outdoors kit I consider simplicity, performance, durability, weight and cost.

The Infinite Orbit hand crank has a neat cylindrical design. It looks well-made and has a solid, quality feel to it. The unit has a cable fitted with a male micro-USB connector at one end of the crank casing & a slot for the handle at the other. I liked it's the simplicity. The handle slides in the machined groove, clicking in position. After connecting your device to the appropriate connector all you do is rotate the handle clockwise/counter clockwise at a steady rate. The handle is designed to detach if you crank too fast.

I connected my smartphone and started cranking. After 30 minutes, I had an increase of 10% charge. Yes, it performs. There's potential for the fixed cable to twist if you don't hold the case tight enough as it will rotate

in the same direction you are cranking.

Regarding the spare "O" ring seal, the instructions don't detail

when/how to fit it, stating on the packaging

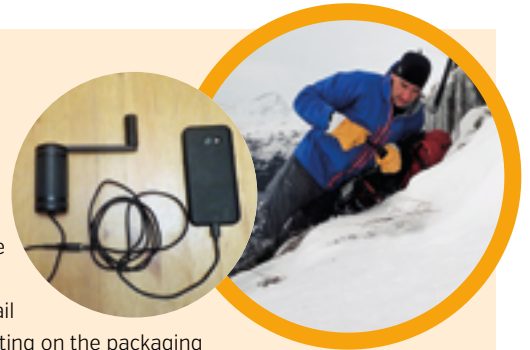
that disassembling or modifying the device will invalidate

the warranty. However, their technical support team gave me useful guidance: *"The end with the cable unscrews and then you can see the O ring. The cable can also be stored in the cap when in transit. It's the main turbine unit that mustn't be disassembled"*.

Weighing 330g it's comparable to a compact camera; not excessive & worth the carry. Trawling the internet unearths a range of prices, Tex:Energy's website was the lowest. At £85 it's not cheap. However, with a lifetime warranty and "free" energy, £85 is a fair price.

I wanted to try it on the hill. At -7°C on the 500m contour of Slioch I wasn't going to be hanging around for long. Even wearing thick gloves, connecting the charger was no more difficult than any other dexterous winter task. My phone connected and stuffed in to my jacket, I cranked away. The results were the same as before.

Would I use it? For short/local trips, the short answer is no. A chargeable battery would be my first option, but I would use it for more remote journeys or longer trips. "Topping-up" devices using the Infinite Orbit in the evenings in conjunction with a day-time solar regime would be my way to go. It would certainly keep you occupied in camp whilst waiting for your brew and help you keep warm during the long nights! ■



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BOOK REVIEW

THE INVENTION OF NATURE:

THE ADVENTURES OF ALEXANDER VON HUMBOLDT, THE LOST HERO OF SCIENCE

by Andrea Wulf

Reviewed by Paul Gannon



This enchanting biography of the 18th-19th century scientist, Alexander von Humboldt should be essential reading for all professional mountaineers. Many of the ideas and attitudes that pervade the modern mountaineering and environmental discussion originally found expression in Humboldt's accounts of his explorations and in his scientific writings. Although little known in the anglosphere, he is widely celebrated in other cultures and indeed Humboldt has more places and species named after him than any other person. Now he is also remembered by this highly readable and luscious account of his life and influence.

The book opens with an account of Humboldt and his party, climbing what was then thought to be the highest mountain in the world, the volcanic Chimborazo in the Andes. The tale of crossing a ridge a few inches wide in dire weather conditions could come from any of the memoirs of modern mountaineers regularly featured in the book review pages of this magazine.

Humboldt's journeys excite admiration from the modern reader and involved great

distances and great danger as a matter of course. Hoping to get a ship ride from Lima to Australia, Humboldt decided to walk to Lima. His indirect route involved a journey of a mere 2,500 miles and included that trip to Chimborazo. It mattered not that, on arriving at Lima, Humboldt discovered that the ship wasn't calling at that port. Undeterred, he resumed his travels across South America.

This book also covers Humboldt's scientific explorations of mountains, oceans, and life on Earth and it outlines Humboldt's view that the Earth and life should be approached in an emotional manner as well as scientifically. 'Mountains held a spell over Humboldt,' writes Wulf. It wasn't just the physical demands or the promises of new knowledge. There was also something more transcendental. Whenever he stood on a summit of a high ridge, he felt so moved by the scenery that his imagination carried him even higher. This imagination, he said, soothed the 'deep wounds' that pure 'reason' sometimes created. Voyages on foot, Humboldt said, taught him the poetry of nature. He was feeling nature by moving through it.

Humboldt's main legacy was being the first person to see the interconnectedness of Earth and life systems, laying out the philosophy that informs our modern understanding of the importance of looking after our environment. He also recognised the similarities of plant and animal life in South America and Africa

and, 150 years before the concept of plate tectonics was accepted by the geological scientific establishment, conjectured that these continents were once a single unit. He invented the concept of 'isotherms', lines of equal temperature that also came to encompass atmospheric pressure 'isobars' and our familiar height contours.

Perhaps most readers will have heard of the Humboldt Current off the west coast of South America, one of the great 'conveyor belts' in the oceans, regulating and controlling much of the Earth's climate. Among those directly influenced by Humboldt's work were such illustrious names as Charles Darwin, John Muir, David Henry Thoreau and Ernst Haeckel (who coined the idea of 'ecology'). Wulf helpfully weaves into the story, the social and political context of Humboldt's life and his influence, making this a book of interest to all. No short review can convey the richness and breadth of the book's contents.

As Wulf concludes, 'Humboldt's disciples and their disciples in turn, carried his legacy forward – quietly, subtly and sometimes unintentionally. Environmentalists, ecologists and nature writers today remain firmly rooted in Humboldt's vision – although many have never heard of him. Nonetheless, Humboldt is their founding father. This is a book that all with a love of the mountains, and a concern for our environment, should read to discover where those ideas and feelings were first expressed. ■

THE ALPS AND OUR PLANET: THE AFRICAN MATTERHORN, A GEOLOGICAL STORY

by Michel Marthaler

Reviewed by Alex Kay



The Alps and our Planet is undeniably a fascinating read, providing a deeper understanding into the complexities of various mountain landscapes around the world, with clear links to our local and global geography. From the overwhelming accounts of tectonic plate movements; intriguing structural composition of the Earth's crust and its respective rock types, and the upheaval of snow and ice during the last glaciation, this book will leave you refreshingly in awe of your *new* surroundings and compelled to dig a little deeper into the next chapter of our planet's past.

Just make sure not to take this one to bed

with you, as it's *far, far away* from being just a simple bedtime story! With forewords written by astronauts of the European Space Agency and university professors, you won't be surprised that the book gets rather academic at times – but don't be put off by this. An incredibly revealing journey along the Earth's timeline awaits, guided skilfully by the author.

This book rewards the diligent reader with a beautiful insight into the vast history of alpine geology, with regular star turns from familiar mountains such as the Matterhorn, Dent Blanche and the Weisshorn, along with ranges such as the Jura and the Aiguilles Rouges. I gained many insights into familiar landmarks, such as the origins of dinosaur paw prints up at the Emosson Dam, ancient breccia near the Pas de Chevre along the Haute Route, glaciers of the Mont Blanc Massif and the oceanic rocks of Mount Viso in the Italian Alps.

I recommend reading and following the introductory advice contained in "How to read this book" – I kid you not! Throughout

the book, captivating writing & eye-opening explanations, coupled with detailed maps, charts & diagrams, offer a plethora of information. Colourful images, including stunning panoramas, demonstrate the phenomenal preceding that created such an iconic mountain range like the Alps. Reference is made to a 'geological time-line', appearing at the top of the page in each subsequent chapter, and at numerous times where it is of individual emphasis. This enables the reader to stay attuned to the period in which each stage of evolution occurs and footnotes at the bottom of each page explain some of the more difficult language used.

This book offers you and your clients the chance to have a fresh look at the rocks beneath your feet. For me, it was exceptionally useful in completing my International Mountain Leader summer assessment. I gained a much broader understanding of the Alps, and it assisted with the preparation of one of my presentations. ■

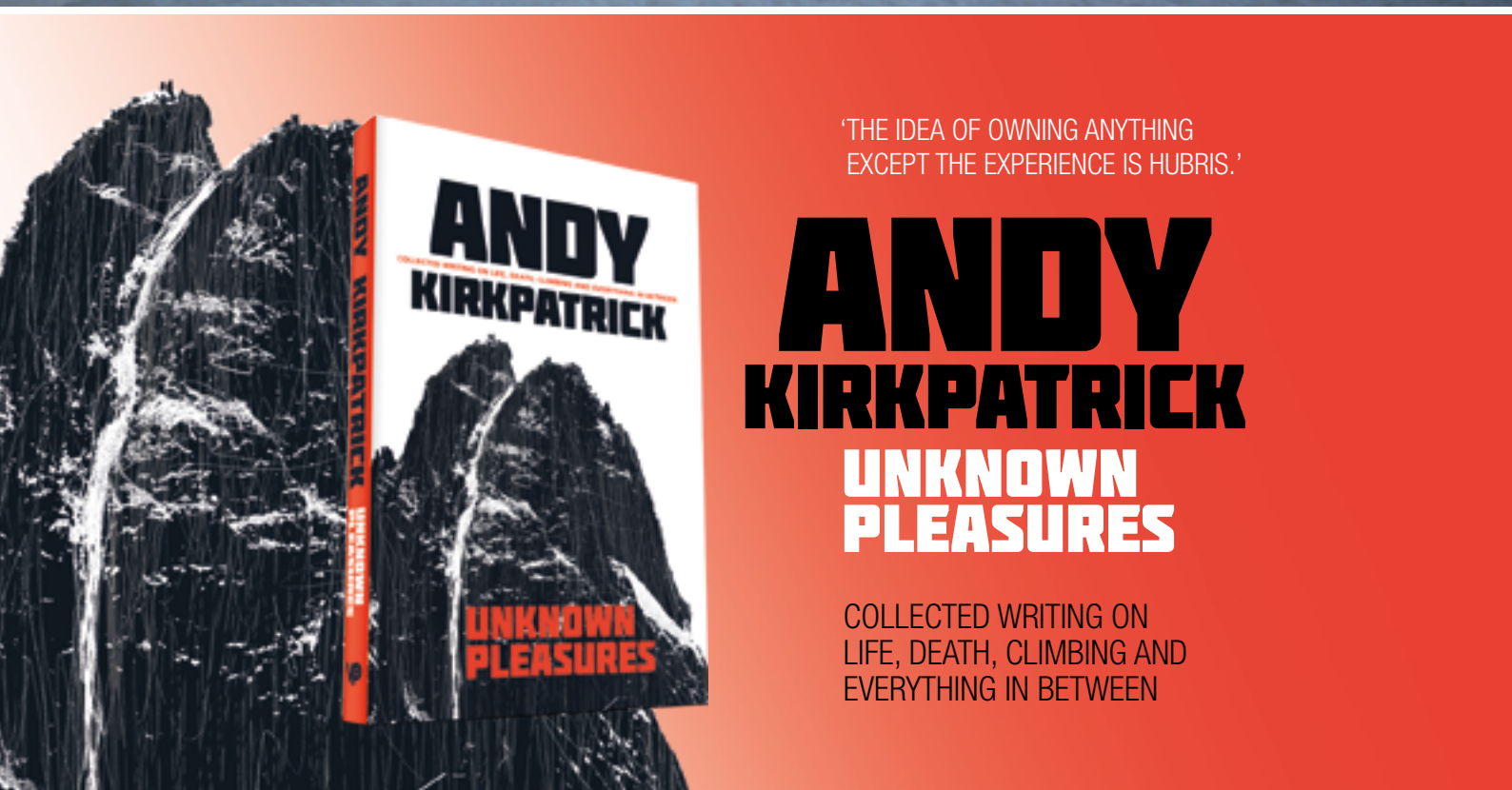
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