ISSUE 20 - WINTER 2000

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SUMMIT

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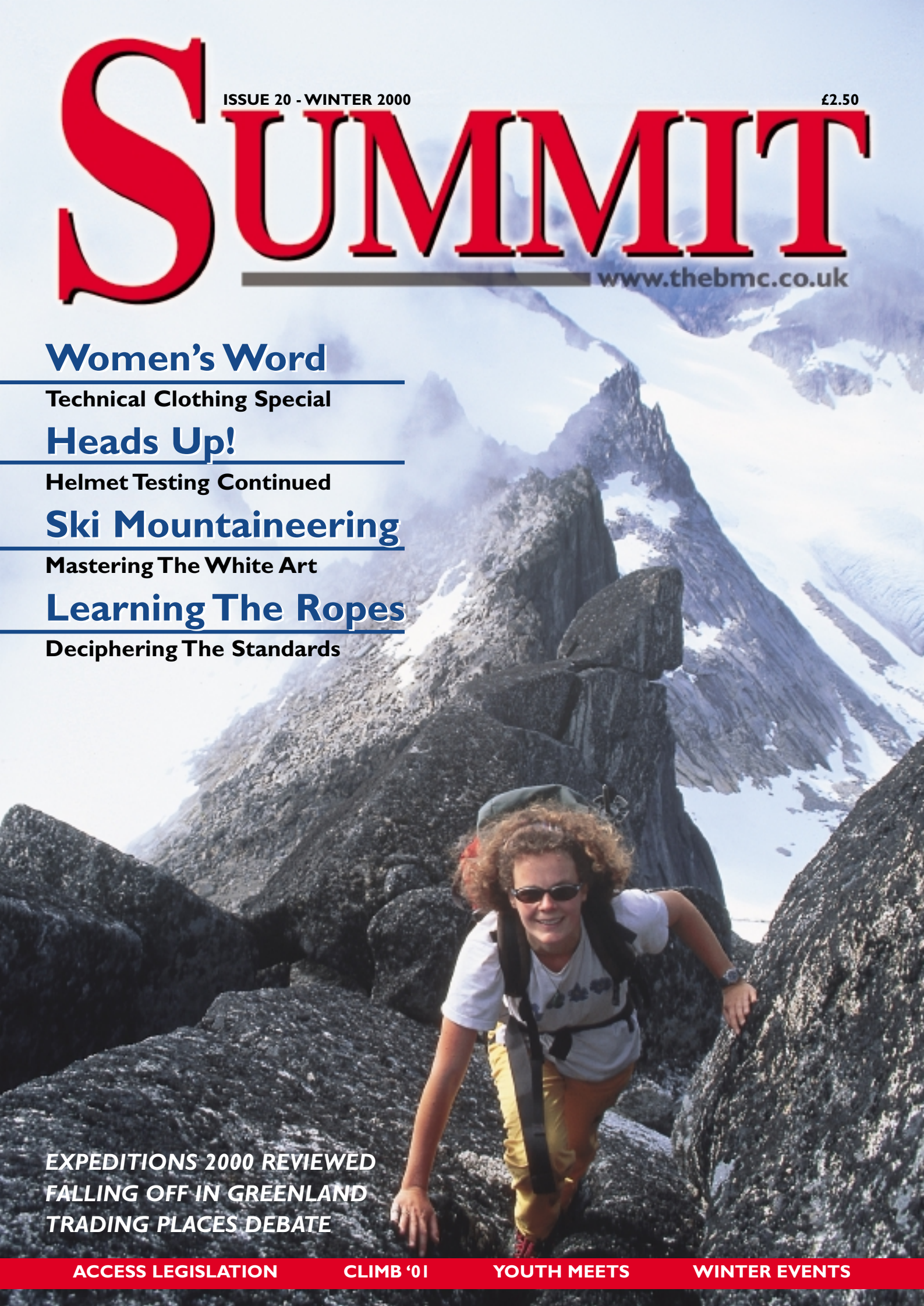

EXPEDITIONS 2000 REVIEWED
FALLING OFF IN GREENLAND
TRADING PLACES DEBATE

ACCESS LEGISLATION | CLIMB '01 | YOUTH MEETS | WINTER EVENTS

FOREWORD...SUMMIT PYJAMAS

Apart from playing football in the local park my first independent sport and recreation as a youngster was to join the local swimming club. In that long since demolished Victorian public baths the swimming club coach organised training, ran competitions, and carried out Amateur Swimming Association (ASA) proficiency tests. He even managed to organise an excellent exchange with a swimming club in Augsburg that gave me an eye-opening opportunity to stay with a German family and explore a bit of Europe. I enjoyed doing all the usual ASA proficiency awards, and later went on to do the life saving bronze medallion and RLSS intermediate teaching award; which were very useful when I had the chance to try sea and white water canoeing and dinghy sailing.

Roger Payne summiting in the Alps

Just over a year ago a 10 year old scout fell 200 m to his death while descending Snowdon. In October this year two school pupils aged 13 and 14 drowned while river walking in the Yorkshire Dales, and a 15 year old scout was crushed to death by stonefall while rock climbing on Little Tryfan. These are all tragic reminders about the hazards of adventure activities and the responsibilities of leaders. Mountaineering clubs safely operate with experienced and proficient volunteer leaders, and guidelines exist for group leader and instructor qualifications for formally led groups. But even experienced and qualified leadership is no guarantee that fatal incidents will not occur; as happened in November 1971 when six young people aged between 15 and 18 lost their lives high on the Cairngorm plateau. The scout master who led the group in last year's Snowdon tragedy has recently been charged with manslaughter.

At what age and with what experience is it reasonable for a young person to undertake an ascent of Snowdon or go walking in winter conditions in the Cairngorms? How experienced and proficient should group leaders be for different activities? The BMC's participation statement reminds everyone about the risk of injury or death, but a simple statement can not inform young participants and novices exactly what the hazards are and how to minimise them. We all owe a duty of care to those around us, and the level of this duty varies depending upon the experience and expertise of the participants. Also, in common law, those responsible for young people have a duty to act as a reasonably prudent parent would, and good practice for all leaders is to carry out a risk assessment before taking children on any excursion.

Going back to some of my first experiences, the controlled environment of a swimming pool is of course a far cry from being in a canoe charging down a thundering rapid. But all those lengths and treading water, and making unlikely looking improvised bouyancy aids from my pyjamas, obviously helped me get the skills for the fun and adventure of white water rivers and the open sea. The introduction to life saving and hazard awareness became a firm foundation for many years of adventurous climbing and mountaineering on the basis of personal responsibility and self-reliance.

Increasingly indoor climbing centres are taking on a city based adventure activities role. Many centres have excellent junior clubs, that like youth organisations, run events and offer proficiency training. Like schools with adventure activities on their curriculum some indoor climbing centres run their own proficiency tests and achievement awards. In the past it has been argued that proficiency tests for climbing, hill walking and mountaineering could be counter productive because a single one-off assessment of skill may convey a false sense of security. However, the BMC can provide something much better than a crude proficiency test. A national scheme of achievement standards for young people of all abilities, with an on-going record of experience, could promote safety awareness and encourage improved performance whether it be micro navigation or warming up to avoid injury. Such a scheme would also promote an understanding of the history and ethics of the sport and the environment in which it takes place; surely all of which is to be welcomed?

The next issue of Summit will describe the BMC's new initiatives and guidance aimed at ensuring young people, novices, and volunteer leaders and assistants all have a support and training framework in which to develop their experience and carry out their activities in a responsible way. In the meantime, have fun but take care in the hills, and if you have any comments on youth and leadership programmes please let the BMC know.

Roger Payne

General Secretary

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Welcome to issue 20 of

SUMMIT

Summit is the membership magazine of the British Mountaineering Council. The BMC promotes the interests of climbers, hill walkers and mountaineers and the freedom to enjoy their activities. The primary work of the BMC is to:

Negotiate access improvements and promote cliff and mountain conservation.
Promote and advise on good practice, facilities, training and equipment.
Support events and specialist programmes including youth and excellence.
Provide services and information for members.

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PUBLISHED & PRINTED BY
GreenShires Publishing
Telford Way, Kettering
Northants, NN16 8UN
Tel: 01536 382500

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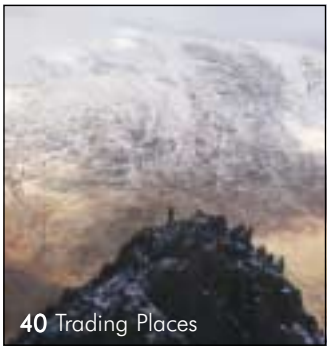
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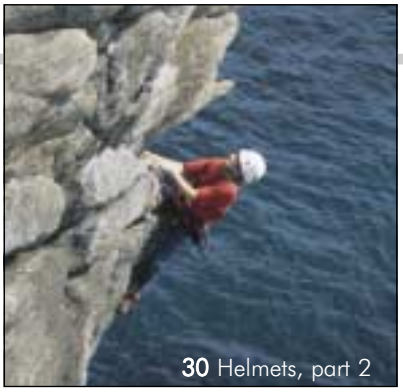
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Cover: Charlotte Manwaring on the exposed final ridge of Peak 1303, Torrssuqatoq Sound, Greenland. Credit: Alex Messenger

DARK PLOTS

Now in my eighth decade can I take this opportunity of saying how excellent 'Summit' is. I find it very readable and informative, improving with each issue. I was particularly interested in 'Knight Moves'. For over forty years a group of us have had a mid-week night walk or climb. In the winter months it has been quite amazing how one adapts to darkness (we don't take torches), more often than not a hill summit was reached and we never had any problems other than dirty boots. Listening to 'In Parliament Today' this morning I was saddened to hear the quite idiotic objections offered, clearly people with no interest in other peoples enjoyment of the countryside. I have written to my MP who is fully in favour of the bill.

David Smith

ARE YOU BEING RESPONSIBLE?

Whilst I thoroughly applaud Martyn Cattermole's letter extolling the benefits of wearing a helmet, am I to assume that he is one of the younger generation of climbers (who by now should be approaching at least early middle age) who - it used to be said - climbed with the intention of falling off?

My generation did NOT climb with the intention of falling off and although Martyn may do so, it seems highly irresponsible of Summit to publish a letter, which, on the face of it, encourages younger climbers to do just that.

This letter is not from an out of touch climber who has never seen a climbing wall. I designed and commissioned the second purpose built (then outdoor) climbing wall in Britain - using solid rock. My generation climbed before harnesses were thought of, let alone helmets and we drilled out our own nuts (real nuts). We now use harnesses, helmets, rocks and Friends and I am sure I speak for all when I say that we shall continue climbing with the intention of not falling off and sincerely hope that we never do.

Finally, it never ceases to amaze me how few climbers bother, or know how to, protect their partners in descent. We climb in partnership so why not descend in partnership? All we have to do is stand below and lightly hold the rope. In the event of emergency, just apply a little tension to arrest the abseiler, just as you would a casualty.

Geoff Tyson

ILKLEY RESPONSE

Following on from the removal of several tonnes of rock in the Wellington Crack area of the Cow & Calf Quarry, Ilkely, BMC Vice President and guidebook editor Dave Musgrove received the following response in mid-July. (As we go to press the rock debris remains in the quarry).

Thank you for your letter concerning the removal of overhanging blocks at the Cow and Calf quarry. I am sorry you were disappointed that we did not consult with the BMC before taking action. At the time we had no record of who the local representatives were and we were very concerned to resolve the situation before any problems occurred. As managers of the moor we have to have regard for public safety, particularly when action to make the area safe was recommended by a structural engineer. In addition, the quarry is visited and used by a large number of groups and individuals all year round - from casual day-trippers to school groups, rock climbers and the Army on training exercises.

We couldn't hope to consult with representatives of all the users before the work was done. I took the decision to organise some prompt action having visited the site and watched as three schoolchildren walked to the end of the overhanging boulder in question and jumped up and down. We were faced with either keeping the public out of the area whilst we decided what to do - which would have been almost impossible, or acting swiftly.

The points you make about the quarry being an important site for rock climbing are fully accepted and it is something we do keep in mind. I think it is important to acknowledge, however, that the site is a relatively dynamic place and is subject to processes, mostly weather related, which will cause changes from time to time. The only other climb which I am aware that has been altered in the last ten years or so was the result of a natural landslip, which had to be made safe.

We are currently considering a monitoring regime for the quarry which will tell us whether there have been any notable slips or changes over a period. I would be grateful for any information that your members may have as to any perceived changes.

We are hoping to carry out some further clearing-up in the quarry during the next fortnight - we have a machine working on the moor and this will be moved down to the quarry to clear away some of the debris which was left behind.

Danny Jackson
Countryside Service Manager, Bradford MBC

BADGES OF HONOUR

Why is it that UIAGM Guides, MIA and EML holders have lapel badges to wear, but MLA and SPA holders don't? The argument that the former have badges because they are professional, but that the latter aren't, surely doesn't hold water. Plenty of people make their living from the MLA and SPA as walking guides and outdoor instructors.

There are persuasive arguments for providing good looking, professionally designed badges. They would promote the award schemes; assure clients that they have a safe leader; enable commercial operators more fully to use their awards as selling points; and provide a little cache for those who have pursued the award schemes through to successful assessment.

Nigel Gill

The Summit prize for best letter goes to Geoff Tyson. Nice one Geoff and a Nitro Rucksack is on the way to you.

berghaus

The Berghaus Nitro has a 24 litre capacity and features a limpet compression system. It also includes a mesh helmet net. In 1998 the Nitro was awarded a Millennium Product Award for design and innovation.

Access bill hits Lords

Peers returned early from their summer holidays to resume work on the Countryside and Rights of Way Bill. Committee work on the access part of the Bill was completed on 9 October. At the time of writing, campaigners prepare for the crucial Report and Third Reading Stage, when most of the voting will take place.

BMC President Derek Walker and General Secretary Roger Payne attended the Lords debate on night access and witnessed at first hand the widely differing views in the House. All possible (and several impossible) arguments were employed by Tory peers during a two hour debate to raise support for a night-time curfew. One noble Lord rounded off his case for a ban on night access on grounds of public safety by citing Sherlock Holmes – the wicked Mr Stapleton (owner of the Hound of the Baskervilles) met a sticky end in Grimpen Mire because he had roamed on the moor at night.

Fiction was met by fact from Labour and Lib Dem peers, who spoke of the lack of problems caused by existing 24-hour access, and its importance for outdoor recreation. Quoting from BMC briefings, peers vigorously demolished opposition arguments. Lord (Tony) Greaves, BMC champion in the Lords, defended BMC interests over this and other issues. Meanwhile, Environment Minister Lord Whitty repeated the Government's determination to resist a blanket ban.

The debate ended with a vote, won by a clear Government majority. The anti-curfew lobby won the first skirmish but, with another vote likely and Tory peers pledged to restrict night access, we're not out of the woods yet.

Get ready for Climb'01

First there was **Climb'97**: The Entre-Prises World Cup. Arnaud Petit and Muriel Sarkany won the big event, Muriel and Big Frank walked off with the World Cup titles. Chris Sharma and Katie Brown flew across the pond and showed us why they were so highly rated.

Then came **Climb'99**: The Entre-Prises World Championship. Liv Sansoz and unknown Italian Dino Lagni become world champions. The Ukranians and Russians dominated the Speed events (no surprise there), whilst Tom Lawrence and Jemma Powell showed us the future in the British Junior Challenge.

And next? **Climb'01**: So what's going to be there? Everything. The UIAA Bouldering World Cup Final - will Claire Murphy and Malcolm Smith become champions? Could Jemma Powell win the UIAA European Youth Cup Youth A Category, and Adam Dewhurst the Junior Category? Can strong Steve McClure easily beat off the strong continental challenge to win the international masters event? Will jumping Johnny Dawes win the Dyno Open? Do Joseph and Joanne Public win the Bouldering Challenge? No matter who the winners are, the climbing at Climb'01 will be coming at you thick and fast with virtually non-stop action on the 650 square metres of Entre-Prises climbing walls.

Steve Jones (Entre-Prises UK), looks forward to Climb'01

You probably won't even have time to visit the huge retail outlets, trade stands, lectures, Come and Try it Walls, workshops, and slide shows. Keep an eye out for more details as they emerge.

Congratulations Susanna.

The BMC is saying goodbye and thank you to Access & Conservation Officer Susanna Perkins. Since joining over two years ago, Susanna has ceaselessly lobbied for the rights of climbers, hill walkers, and mountaineers, and has played a major part in the development of the new Access Legislation. Referred to by John Horscroft in Climber as "perky" Perkins, she has recently been taking on the might of the House of Lords in the battle for night access. All this hard work did not go unnoticed by Countryside Agency, and we wish her all the best in her new position there.

Susanna Perkins - All the best

Leah Crane at Burbage South during the Peak youth meet

BMC Youth Meets 2000

The **Lakes BMC Committee** organised another fine junior meet in Langdale, this time blessed with sunshine and entertaining slide shows from Graham Desroy and Dave Turnbull. Some people led their first E1 whilst others learned how to remove gear or enjoyed topping out for the first time.

Moving down, **South Wales Mountaineering Club** joined up with the Warehouse Wall in defying the petrol strike to continue with their youth meet for 20 young climbers. There was a brilliant atmosphere at the crag with pinnacles being climbed then abseiled, and everyone getting to grips with the nuances of placing gear and linking anchors on the ground. It was an ideal combination of structured instruction with a "club meet" feel.

The **two Peak meets** with Derbyshire County Council saw the formation of a new style Parents' Club. And in 2001 the Youth Advisory Panel would like to work more with other organisations like the DofE to provide opportunities for people who are interested in climbing, hill walking and mountaineering.

In 2001 the BMC will be offering **free or subsidised skills training** for those Club members or volunteers who are prepared to help out on youth or equity events. For example support will be given to those wishing to undertake SPA training as part of the Volunteer skills training programme. We have a regional volunteer database so if you would like to be involved please contact the BMC Office.

Check the BMC website for details of NE Area and Chester MC Spring 2001 meets and BMC 2000 *gripped?* meets plus Plas y Brenin meet reports.

Thanks to the Andy Fanshaw Memorial Trust and MTT in particular for their support. ***gripped?*** has a discussion forum on the BMC website so check it out and let us have your views. ***gripped?*** is supported by HB climbing equipment.

STOP PRESS:
Free places for young climbers (18-25) on the Scottish climbing performance seminar.
See www.thebmc.co.uk for details

Liberty Leash wire recall

Grivel Liberty leash with the wire

The Equipment Investigation Panel recently completed examination of a broken wire from a Grivel Liberty leash. Ironically, this leash belonged to Andy Perkins, a member of the EIP and Technical Specialist for Troll, the UK importers of Grivel. The wire broke during the final day of his Scottish winter guides test while digging a slot for an axe belay. A similar incident happened to an instructor at Glenmore Lodge, the National Centre for Mountaineering in Scotland.

Following examination utalising Scanning Electron Microscopy, the EIP's view is that the wires failed in a low repetition high stress fatigue mode. This occurred because the wire is placed in bending over a sharp edge, on the edge of the connector that links the wire to the head of the axe. The wire was originally designed to take tension straight down, and Grivel did not envisage the kinds of stresses that the peculiar circumstances of UK winter climbing place on the system.

Grivel have now changed the design of the wire, so that instead of a rigid connector, there is now a loop of wire connecting the wire to the axe. Troll will be contacting directly the customers who have purchased Liberty leashes, though some will have been sold on to end users. Troll have been in a unique position in this case, where they are acting as both reporters of the incident, technical specialists and distributors of the product.

Climbers who bought their Liberty leashes in a shop should return them to the same shop, not directly to Troll. This is to maintain traceability during the recall process.

The BMC/MCofS 2001 Winter Meet

25 February - 3 March & Glenmore Lodge Winter Climbing Seminar 23-25 February.

In action on the 1999 winter meet

As the first snows of winter gather in the Cairngorms, planning for the 2001 winter meet is in full swing. Once again the world will be coming to Glenmore Lodge to experience the subtle pleasures of Scottish winter climbing. But this year the meet is not the only big event that the Lodge is hosting.

In the three days preceeding the meet the Lodge will be running the first ever Scottish climbing performance seminar. This event consists of a range of short courses, suitable for all skill levels, aimed at helping both indvividual and instructors improve their winter skills. Seminar bookings are on a first come, first served basis, and there will be subsidised places for young climbers. For full details call 01479 861 256 or see the Glenmore Lodge website at www.glenmorelodge.org.uk.

As far as the Meet is concerned the event is already getting stacks of interest from abroad, no doubt based on stories of brilliant conditions in 1999. As always, hosts are needed to climb with our foreign friends. If you would like a week in Scotland, accomodation provided, climbing with fine characters from around the world - then write in, telling us something about yourself, to Andy MacNae at the BMC Office. Hosts climbing at all standards are needed and the only prerequisite is a good knowledge of the Scottish Mountains and conditions. Recalling past meets and in tune with the theme of this issue of Summit, it would be great to see a few more women coming forward as hosts.

Winter Conville courses 2001

Want to learn more about winter mountaineering? Apply now for a place on one of the six winter Conville courses to be held in January. These 'skills' courses are specially designed to give young climbers a sound introduction to the techniques needed for moving on snow and ice - both in Britain and abroad. This includes the use of crampons and ice axes, belaying and rope work, avalanche assessment and all of the other topics related to winter mountaineering.

The courses are subsidised by the Jonathon Conville Memorial Trust, the BMC, and the Scottish Mountain Trust. The Jonathan Conville Memorial Trust was set up by the family of Jonathan Conville after he lost his life on the Matterhorn in the winter of 1979-80, aged 27.

Winter Conville Dates 2001

6/7	Jan	15/16 Jan
8/9	Jan	13/14 Jan
20/21	Jan	22/23 Jan

These 2 day courses are fully residential, based in Ardenbeg in the Cairngorms, and cost just £30. Application forms are available now from the BMC Office.

The BMC Alpine Experience lectures in partnership with Cotswold Outdoor March 2001

Become inspired by these interactive introductions to the Alpine environment. Top mountaineer Simon Yates and alpine guide Steve Long will provide advice on coping with alpine hazards, interesting areas to visit, how to improve your skills and how to make the most of your time on the hill. There will be an opportunity to receive good deals on equipment at Cotswold stores and in the interval you'll be able to quiz the lecturers on both their exploits and your holiday plans.

This series of six lectures will begin on the 19th March, venue details and tickets available soon.

The "Alpine Experience" on Chapelle de la Gliere, Aiguilles Rouge

The competition season begins..

Rockit BRYCS

The Rockit British Regional Youth Climbing Series is a nationwide climbing competition for 7-15 year olds, consisting of three regional rounds and culminating in a National final at the Foundry Climbing Centre. Last year saw over 400 young climbers inspire and astound spectators with their tenacity and determination. The 2001 dates are: Regional rounds 28 April, 12 and 19 May, then the Final on 9th June. Application forms will be available in the New Year.

During 2001 belaying training will be offered to all BRYCS volunteers and Area Youth Co-ordinators. For key volunteers there will be a free **2 day BMC Route Setting course** prior to the 2001 season. Contact Graeme or Anne at the BMC Office to register your interest.

Urban Rock BRACS'01

A new series being beta-tested in the London and South East Area. Pitched below the TROLL BICC as an adult version of the hugely popular Rockit BRYCS, this series will combine leading and bouldering. Veteran categories will be included. The Urban Rock BRACS will be held at The Castle, Mile End and The Climb (Amersham) during January 2001. Further details will be available from the venues, the BMC website (www.thebmc.co.uk) or from Graeme Alderson at the BMC (graeme@thebmc.co.uk).

Troll BICC'01 & S7 British Bouldering Championships

The dates and venues for the TROLL BICC'01 and S7 BBC are now confirmed. See Briefing on page 42 for full details.

Kenyan Challenge

In January following months of training, Paul Pritchard is heading off to climb Mount Kenya. At 5000 metres this isn't the highest mountain he has climbed, but it will certainly be the most challenging.

The aim of the trip is to raise funds for Headway - the brain injury association, a subject close to his heart after his climbing accident in Tasmania in 1998 left him with a paralysis down the right side of his body. **www.paulpritchard.com** has full details of how you can support him in this challenge, and information about a charity book auction featuring over 30 signed titles by well known authors. Raffle prizes from Stone Monkey, Wild Country, Petzl and Marmot are also up for grabs. Alternatively you can send a cheque made payable to "Mount Kenya for Headway" to Paul at 5 Goodman Street, Llanberis, Gwynedd, Wales, LL55 4HH, UK. Paul is covering all his own costs for the trip, so all proceeds will go straight to Headway.

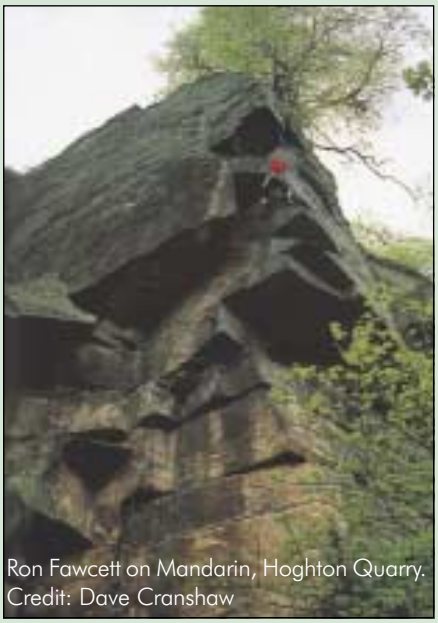
Web Crawling

In January a new website appeared; ClimbUK at **www.climbing.co.uk** is run by a climbing web designer, and a couple of very active climbing editors. Its aim is to be the first port of call for any climber looking for information on climbing in the UK. One of the most popular areas of the site is proving to be the discussion boards. A recent post on the innocent subject of the BMC shop received over 90 swift comments on all aspects of the BMC's work, and led to the Forum (p40) in this issue.

Prussik practice at the Student Seminar

Students Hanging Around Again..

The annual Student Seminar ran again at Plas y Brenin during the beginning of October. This 2 day event was aimed at those involved with student clubs, and offered advice on a range of topics, from liability issues to self rescue. Over 90 students from around the country attended, and it was acclaimed as one of the best yet. The need for such support for student clubs was clearly illustrated by one example - The High Peak Club from Sheffield University has just been barred by their Union from organising any events during the winter since they are deemed "too dangerous" Hopefully with help from the BMC such misunderstandings can be minimised in the future.


Ron Fawcett on Mandarin, Hoghton Quarry. Credit: Dave Cranshaw

Hoghton Quarry: Access for 2001

Following years of negotiations between the BMC and the Hoghton Estate it has finally been agreed that the quarry will be open for climbing for a limited period next year. The 'open' period will be in June and July – the precise timing being dependant on the resident peregrine falcon. Climbing will not be permitted after July due to game shooting. Once available details will be posted on a site sign and the BMC website. Special thanks are owed to Les Ainsworth for his persistence in seeking a solution to the recent access difficulties at Hoghton.

Rhoscolyn: Park Carefully, Please

Climbers are requested to park on the triangular area of grass to the right of Rhoscolyn Church (GR 268 757). Please do not obscure the front of the church – especially when services are taking place at weekends.

Harpur Hill: Parking

The owners are concerned about climbers' cars blocking the entrance to the loading bays at Harpur Hill. The best parking is in the lay-by on the road leading to the industrial estate (west of the crag) where there is room for three cars.

Southern Sandstone: Rock Repair Work Continues

Mike Vetterlein has had a busy summer putting in over 190 hours of resin work at Harrison's and Stone Farm Rocks to repair damaged routes. Some of the rope grooves have also been repaired at Harrison's and a list of priorities for further work has been drawn up. The BMC's purchase of Stone Farm from Forest Enterprise is still going ahead despite conveyancing delays - completion is anticipated later this year.

Peak Litter Clean-Ups

The Roaches litter clean-up in September was voted a great success by the 40+ volunteers who turned out from as far away as Essex and Newcastle-upon-Tyne and collected over 30 bags of litter. There were prizes for the strangest object found and the most difficult object to retrieve (a memento of the European Cup buried 3ft deep in a crack). The consensus was that though there seemed to be less visible litter there seemed to be an increasing trend of burying cans, bottles and paper under boulders and deep inside cracks. The evening BBQ courtesy of Richard Pickford of Mountain Fever was an excellent end to the day and Dougie Moller ('King of the Roaches') did a great job drawing the raffle, persuading people to fork-out cash for the Access Fund, and entertaining old and new friends. Ours thanks go to all those who helped out on the day - particularly Dave Bishop the main organiser.


Dougie Moller "King and Lord of the Roaches" holds court at the Roaches clean up. Credit: Dave Bishop

Thanks also to Mountain Fever, North West Face Warrington, Roaches Café, Salomon, Troll and Wild Country for donating raffle prizes to raise money for the Access Fund. A clean-up of Higgar Tor also took place earlier this summer courtesy of a hardy band of DARE members.


Bags of results at the DARE litter clean up, Higgar Tor

Scugdale: Path Repairs

Cleveland Mountaineering Club and the Yorkshire Dales NPA have begun phase 1 of work at Scugdale to address ground erosion problems. Biodegradeable matting (as used at Harrison's Rocks)is being used to cover eroded sections of the approach path and the work is supported by the BMC Access Fund.

Great Orme: Bolt Belay Inspections

Plas y Brenin staff are carrying out bolt belay inspections on Upper Pen Trwyn this Autumn in accordance with procedures laid down by the BMC Technical Committee. Suspect bolts will be replaced and the work is being supported by the Access Fund.

Access Meetings with National Park Authorities

The BMC's annual liaison meetings with National Park Authorities get under way in late November with a series of meetings in the Yorkshire Dales, Snowdonia, the Lake District and Pembrokeshire. Anyone with access or conservation issues they would like to raise should contact Dave Turnbull at the BMC.

Northern Snowdonia Transport Study

The organisations supporting this project have submitted an application for £250,000 of EC Objective 1 funding to develop the project over the next three years. The funding will be used to support project management costs, development of a marketing strategy, community liaison and public consultation.

Free Food at the ODG: 50 Volunteers Needed

The National Trust and Rock + Run are organising a footpath repair weekend at Raven Crag, Langdale - provisionally on 9/10th Dec. Up to 50 volunteers are needed and a meal will be provided by the ODG on Sat pm followed by a slide show. The National Trust is offering free camping on the Langdale Campsite for volunteers. Contact Andy Hyslop (andy@rockrun.com or Tel: 015394 32855) if you want to help.

SKI mountaineering

By Rob Collister, Plas y Brenin

Not so long ago, skiing was something mountaineers, well British ones anyway, regarded with suspicion. Like eating quiche, real climbers didn't ski.

Just think of the descent!

If they did, it was as a separate sport, a winter holiday with the family using lifts, not to be confused with serious mountaineering. When they went to the Alps in winter, they would stolidly plug lines of holes two feet deep up the glaciers and take days to reach their route; or they would hire snow shoes in Chamonix and take almost as long.

Of course there were exceptions who proved the rule; Dougal Haston, for one, and there has always been a small band of devotees in the Eagle Ski Club and the Alpine Ski Club. But on the whole, skis, whether as a means to an end or as an end in themselves, were not part of the average mountaineer's equipment.

Now, all that has changed. Skiing is seen as a useful skill to acquire and as enjoyable a form of mountaineering as rock-climbing or ice climbing. Almost everybody is doing it. And with good reason, for it is the only sensible way to travel in deep winter snow: easier than walking on the uphill and as exciting or scary as you care to make it on the descent.

The Gear

One reason for the growth of interest has been the improvement in equipment. When I first went touring in 1970, I was using wooden skis which were far too long for me (and snapped, halfway through the holiday). They were fitted with cable bindings which had no lateral release, and I wore lace-up leather boots that were a pleasure to walk in but only a slight advance on flip-flops to ski in. Consequently I used to enjoy the uphill and barely survive the downhill!

Gear has come a long way since then. Boots like the Scarpa Denali or the Nordica TR10 are almost as good as downhill boots to ski in and nothing like as uncomfortable to walk in as they appear. Modern broad skis like the Salomon X-Mountain, Dynastar 4x4, Rossignol Bandit or Atomic Beta-Ride have made the off-piste accessible to far more people.

Bindings have altered radically. Most are now of the step-in type, with sensitive forward and lateral release for downhill skiing and a climbing aid to raise the heel on steep ascents. Harscheisen (ski crampons) are standard on most models. Ski-brakes are becoming more common as an optional alternative to safety straps, but you do have to choose between the possibility of losing a ski in deep snow (which does happen) and slicing yourself open with a tip or an edge in a bad tumble (which also happens). Skins for going uphill have improved too.

An increasingly popular alternative is telemark equipment. Bindings are very light and boots are fastened only at the toe, with either a three pin or a cable system. Boots need to be solid and warm but bendy so that you can 'kick' with each stride on the flat and crouch down to execute a telemark turn. Using this sort of gear, the High Level Route from Chamonix to Zermatt has been skied in twenty-four hours instead of the usual week, but you need to be a very good telemark skier to handle that type of terrain.

Where to go

Many people confine their ski touring to the Alps where there are plenty of huts, good maps and guide books, reliable snow and plenty of people around in Spring to reduce the seriousness of it all. However, there is no lack of possibilities in Scotland, Wales and the Lakes when the snow is right, which is admittedly less often than it used to be. A few years ago a group from the Eagle Ski Club even skied the length of the South Downs Way over New Year. In fact, once you have the gear you can ski anywhere there is snow which, in Winter, is a sizeable chunk of the northern hemisphere, including some less obvious destinations like Morocco, Corsica, Lebanon and Greece.

Ability

To enjoy ski mountaineering, however, you do need to be fairly fit and you need to be able to ski. Skiing with a pack in deep crud calls for a certain amount of both strength and skill, and the more you have of each the more you can enjoy it. You can get by with one or the other. If you are very fit you can put up with frequent head-plants and the protracted performance of putting self and skis together again afterwards. If you are a good off-piste skier but unfit you may be able to hang on uphill and still cope with the downhill.

But you will have the most fun if you are both, and if you are neither, your holiday could be a disaster, not only for you, but also for the rest of the party who have to wait for you. For climbers learning to ski, it is tempting to head off into the untracked snow straightaway, but it is well worth having some lessons and waiting until you feel confident that you can handle most pisted slopes, one way or another, and have had a go at some off-piste. Looking good matters not a jot, but knowing when not to fall over and being able to traverse, side-slip and kick-turn are important skills for

getting out of trouble. It is wise to adopt a conservative approach to your skiing, too. The back of beyond is a bad place to break a leg.

How to start

If you wish to start under tuition or to try out the gear at someone else's expense, the national centres, Glenmore Lodge and Plas y Brenin, run introductory courses, as do a number of British Mountain Guides. The Eagle Ski Club has an extensive programme of guided and unguided tours for all levels of experience in different parts of the Alps and welcomes new members. The Ski Club of Great Britain also has a touring programme along with ski-safaris and off-piste holidays.

If you prefer to do your own thing, remember that avalanches are a very real hazard for the skier. Learn all you can about snow, and carry a transceiver and a shovel, just in case. The one is no use without the other. If you don't believe me, see how long it takes to dig a hole in the snow a metre deep with your hands. That said, there is no finer feeling than skiing untracked powder that you have reached on your own two feet. Go for it!

Skiing uphill

To enjoy touring one definitely needs to enjoy the up as well as the down, for on an average tour eighty per cent of the time will be spent going uphill. Undeniably, beginners are often more conscious of sweat and toil than of beauty in the landscape, more aware of aching muscles and sore feet than of mountain magic and, when the skis are at last pointed downhill, it becomes only too evident that rubber legs will no longer respond to the demands being made of them. This is a pity because in all probability it is equipment or technique as much as fitness that is the problem. Good uphill technique is a much-neglected aspect of ski touring, but to develop it you need the right gear as well.

Skinning

The crux of the matter is skinning. Skins - once made of sealskin, nowadays of nylon (which lasts longer) or mohair (which glides better) or a mix of the two - stick to the base of the ski and have a pile that enables the ski to glide forward over the surface of the snow but prevents it from slipping backwards. It is important that the skin covers as much of the base of the ski as possible; at the very least, the central third of the ski should be covered to the edge. Some skins now come with a trimmer to cut them to size, whatever the shape of the ski. Don't be tempted to use old narrow skins (64 cms) with a modern broad ski; when the terrain becomes steeper, they simply don't work ...

Combined with a binding which can be clamped down in descent but will release at the heel in ascent, skins make it possible to walk uphill on skis.

However, this is where technique comes in, for it is important to glide the ski forward rather than actually walk. It is surprising how many quite experienced tourers skin uphill badly, lifting the ski with every step and leaving a slightly herring-bone track instead of two neat parallel lines. The combined weight of boot, binding and ski on each foot can be as much as 5kg. After 1000 metres of ascent, the skier who lifts 5kg with every step is unlikely to be appreciating the view! Or, as Tilman put it long ago, a pound on your feet is the same as ten on your back.

Performed well, however, in a good track and at a sensible pace, skinning can be a rhythmic, almost effortless movement that leaves the mind free to wander, or even to quieten into a trance-like state in which time loses all significance.

To skin efficiently, one ski is slid forward in a long but not uncomfortable stride and the weight transferred to it. At this point in a normal walking pace the foot (and so a ski as well) would come off the ground. Instead, allow the boot to come up until it is almost vertical, but still pressing the ski lightly onto the snow, before sliding it forward and past the first ski. The weight should be kept directly over the centre of the ski, with a firm push downwards on steeper gradients to help the skin to grip. The tendency on steep slopes is to lean too far forward, causing the skin to lose traction and before you can say "head plant' you are in the snow!

Modern touring bindings (Fritschi and Silvretta are the current market leaders) have an attachment for giving the heel of the boot a higher platform to rest on, which makes steep ascents easier. Taking shorter strides helps, too; as does placing the sticks behind you for support, with palms of the hands on top of the handles pushing down. But if the skinning still feels difficult or uncomfortably steep, simply put in a track at an easier angle or ask the trail-breaker to do so. Slipping and struggling up a track that is just a few degrees too steep, even if it is more direct, is counter-productive in the long run.

Kick-Turns

A good skinning track winds its way up the mountain as though it belongs there rather than being arbitrarily imposed on the landscape. It gains height gradually and uses natural hollows and flattenings to change direction in smooth, rounded curves. Sooner or later, however, the angle will steepen, the track needs to begin to zig-zag and the skier is faced with performing the most important manoeuvre in up-hill skiing - the kick-turn. Unfortunately, it is a skill that older people and those with stiff hips often have trouble mastering. Nevertheless, as with skinning, good technique, or even just a knowledge of what to aim for, can make life a lot easier.

Most skiers will have been taught to kick-turn facing down the hill, but uphill skiers need to do it uphill - not only is it easier, with a loose heel, but not having to contemplate the drop below makes it less scary as well!

I like to start with one pole down the slope for support, the other uphill for balance but well to one side out of the way. With both skis at right-angles to the fall-line, lift the uphill ski until it is vertical then turn both boot and ski to replace it on the snow so that the skis point in opposite directions. This is the most strenuous part of the exercise and where flexibility helps. It is best done as a single fluid movement. Drawing the uphill ski back first can help to give it some momentum in swinging forwards and upwards.

At this point, with the skis in opposite directions, the closer the boots are to each other and the nearer the two skis are to parallel, the easier the next stage will be. The wider the gap between the boots - and there will be a gap if the two skis are not parallel - the harder it is to crank the lower ski up and round to join its partner in a more natural position. The ideal is to pivot the lower boot around the upper, simultaneously giving the tip of the ski a little flick to bring it up clear of the snow. On steep slopes drop the lower boot slightly downhill before the flick-and-pivot movement. Avoid the temptation to swing the whole ski up-slope - on steep terrain this becomes highly precarious, and on easier slopes it is unnecessarily strenuous. It is very much a matter of "feel". Performed correctly, it requires little effort. Some master it in seconds and for them kick-turns hold no terrors. Others find it much harder but it is worth persevering for otherwise every uphill turn will be a stressful and energy-sapping event.

SKI mountaineering

Harscheisen

When skinning on a hard surface - wind crust or frozen snow, for example - edging should be avoided, for it quickly leads to strenuous side-stepping. Instead, roll ankles and knees slightly outwards, down the hill, so that the skin can be in contact with the snow, rather like cramponing. If the slope is too steep to do this, the answer lies with harscheisen. These devices fit between the boot and the plate of the binding and allow a row of metal teeth to protrude downwards on either side of the ski.

When the foot and the plate of the binding are raised the ski can glide forward; when the foot is lowered the teeth bite into the snow like a crampon (some harscheisen are fixed to the ski rather than to the binding which makes for greater security but means that the whole ski has to be lifted with every stride). Harscheisen are not worth wearing all the time or on easy-angled slopes as they reduce glide and restrict the stride; nor are they designed for use on water-ice or rock which can bend the soft metal of the teeth. But on steep slopes of hard snow, frequently encountered in Spring, they are worth their weight in gold for the confidence and security they provide. Like crampons, they are best fitted at the bottom of the slope rather than halfway up, where it is liable to become a stressful performance.

Skin Care

Looking after your skins is important if they are to function properly. After use, remove them from the skis and fold each end into the middle so that the skin sticks to itself. Hang them up to dry, folded, either inside or from the top of a vertical ski. Never leave them outside in the sun or in a warm room to dry on the base of the ski - the heat can cause the glue to transfer to the ski with disastrous results. It is impossible to remove it totally without a solvent.

However, most problems stem from the unpeeling of the skin from the ski. This happens most often when conditions are very wet or very cold. The warmer and drier both skins and skis can be kept, the better they will adhere to each other. It is essential to take trouble over cleaning and drying the base of the ski before applying the skin - admittedly not always easy, if it is snowing hard, for instance. But a skin working loose is at best irritating and at worst dangerous, as the whole party is held up while the problem is sorted out. The usual remedies are adhesive tape wrapped round skin and ski at the tail, quick-acting spray-on glue, or temporarily replacing the whole skin with a spare. Trouble with skins is much less likely to occur if they have an attachment at heel as well as tip. Although more expensive, this type of skin is well worth buying for the security and peace of mind it affords.

In cold conditions, if using skins more than once in the day, tuck them inside your jumper or jacket to keep them warm. It makes a surprising difference to the effectiveness of the glue.

More often than not, skins start to unpeel not because the glue is inadequate but because the base of the ski was not dry or because of clumsy skinning technique. However, after several weeks use they will need to be re-glued. Suitable glue can be bought in most ski equipment shops. It should be applied as thinly as possible and then left to dry overnight in a warm room. After the skins have been re-glued a few times it becomes necessary to remove the old glue. One way of doing this is to buy a solvent; another way is to place newspaper over the sticky surface and warm it with an iron. The glue transfers to the paper, which can then be peeled off.

5 hours on foot, or 1/2 an hour on skis...

Another common problem, especially in warm weather after fresh snow, is balling-up on the base of the skin. The ski can no longer glide and there is nothing, but nothing, more exhausting than heaving pounds of snow up the mountain with every step. The remedy is a spray-on solution or a rub-on wax produced by one of the skin manufacturers such as Coltex, Pomoca or Montana; candle wax will do, at a pinch. But for either spray or wax to be effective the skins need to be dried first; better to pre-empt the problem by treating skins the night before or at the start of a tour.

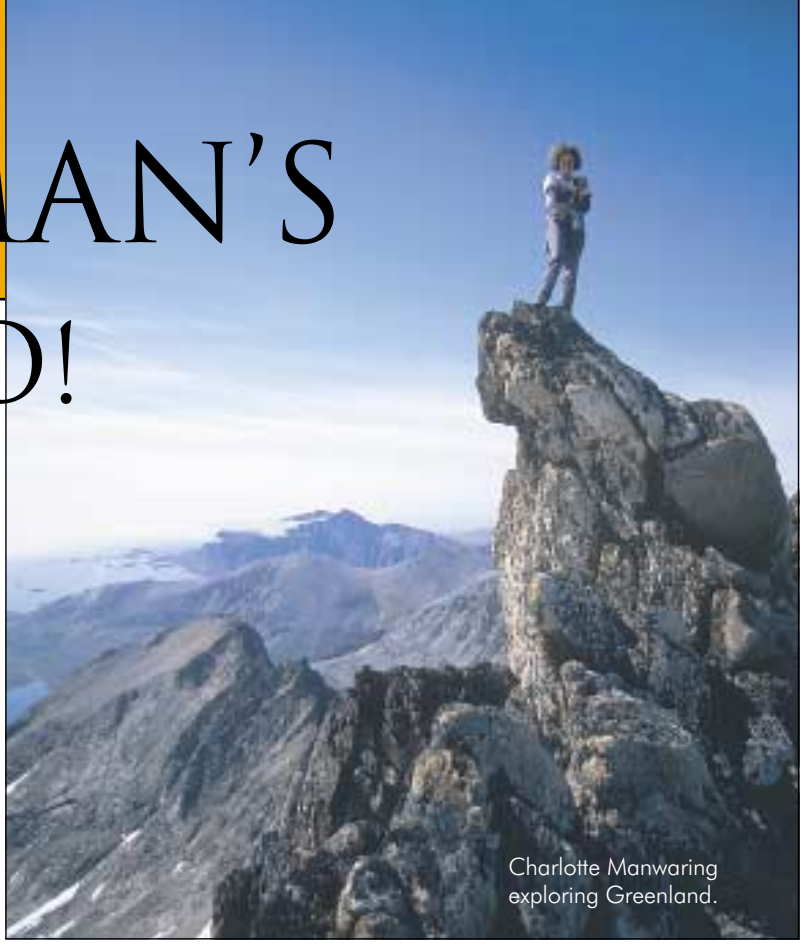
Conclusion

A combination of good technique and the right equipment, well maintained, takes much of the sting out of climbing on skis. Admittedly, there is still the rucksack on your back and the matter of altitude to contend with, but it is far easier to develop a rhythm on skis than it is walking uphill on foot. All in all, provided you are reasonably mountain fit, and you persuade someone else to break trail in that metre of new powder, there is no reason why long glacier ascents should not be a conscious pleasure, leaving you on col or summit in a fit state to enjoy the descent. Whether you do enjoy the skiing depends on a whole new set of considerations regarding technique and equipment. But that's another story.

Find Out More

Plas y Brenin	**www.pyb.co.uk** **01690 720 214**
Glenmore Lodge	**www.glenmorelodge.org.uk** **01479 861 256**
Eagle Ski Club	**www.eagleskiclub.org.uk**

IT'S A WOMAN'S WORLD TOO!


Charlotte Manwaring exploring Greenland.

For years women participating in outdoor pursuits have had to settle for ill-fitting clothing and equipment. Now the market is changing fast, explains Carol Hunter, as more and more women head for the hills.

Sex discrimination is no longer alive and well in the outdoor world; in fact it's definitely ailing. For years women have been in the minority in outdoor pursuits, and as such have been virtually ignored by manufacturers. Now, as more and more women head for the great outdoors, this situation is changing rapidly.

Until recently the limited selection of outdoor clothing and equipment for women has left them with little choice but to resort to buying unisex or men's sizes. Joan, a mountain walker in her 40s, recalls with wry nostalgia how when she started walking she could either wear "my normal clothes which were often totally unsuitable - like jeans which made my legs feel like lead weights the minute they got wet - or men's outdoor gear, which swamped me and turned scrambling into a battle with my clothes."

Even today you only have to venture inside most outdoor equipment shops, or flick through most catalogues, to see that men still rule the roost. In shops the women's section (if indeed such a thing even exists) is still likely to be as far removed as possible from the door, a location which requires any intrepid woman in search of gear to run the gauntlet of those macho men prowling round the front of the store.

While the situation has improved somewhat over recent years, even Clare, a relative newcomer to mountaineering, has often had to settle for unisex or men's small sizes. The problem is compounded by the fact that Clare is small and slim. She recalls her embarrassment when the sight of her (men's) waterproof trousers brought ill- concealed laughter from her fellow (male) walkers. Jokes about buying clothes in the children's department don't go down too well when you're struggling to keep up, not because you're unfit, but because you're wearing outsize waterproofs. Then there's the question of appearance - equally, if not more important for women than for men.

"It's unavoidable I suppose. ..after all, it's happening in most other areas of life now. Personally I prefer to walk with other men, because women often have less stamina, and there's nothing more annoying than having to keep waiting for people to catch up."

Wearing man-sized gear can be unflattering to say the least, and while women are not out there on the hills to make a fashion statement, as Clare says, "a woman has to have some pride!" Although some items are untailored to allow layering and freedom of movement, a garment designed with a man in mind is likely to engulf a woman, especially if she is petite like Clare.

The good news for women is that there has been a sudden acceleration in the availability of women's gear within the UK, as manufacturers have recognised the definite hole in the market. While the more cynical would see this as nothing more than manufacturers exploiting the latest marketing opportunity, it is also a reflection of the increasing demand as the previously male-dominated outdoor world becomes more populated by women.

But what do men, the traditional bastions of the outdoor world, think of women muscling in on "their" territory? It would appear that opinions vary widely. Tony, for instance, concedes, "It's unavoidable I suppose. ..after all, it's happening in most other areas of life now. Personally I prefer to walk with other men, because women often have less stamina, and there's nothing more annoying than having to keep waiting for people to catch up."

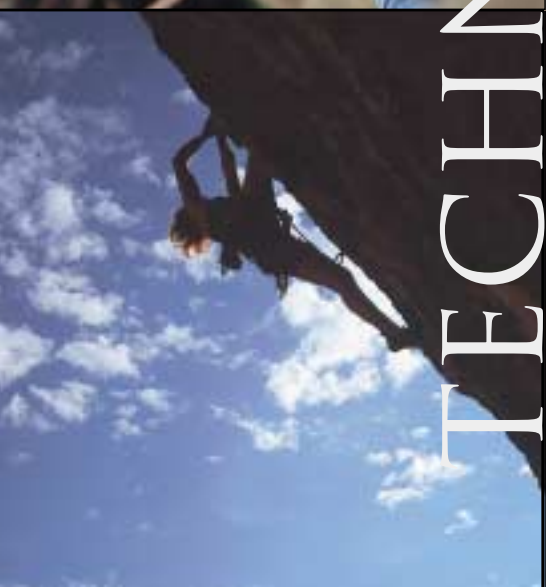
David, on the other hand, adopts a far more liberal approach. "I welcome women's involvement, and I see a fit woman walker as just as capable as a man. Perhaps I'm biased", he adds, "because my wife and I have walked together for years, and are fairly evenly matched. In fact, when it comes to scrambling I would have to say that she is streaks ahead of me - she's got better balance and more confidence".

The attitudes of Tony and David are clearly coloured by their own, very different, experiences of "women who walk", and this raises the issue of whether both sexes may still perceive women as somehow having to "prove their worth" in order to participate as equal partners with men.

Detractors sometimes criticise women who pursue outdoor activities as unfeminine, and it's doubtful whether dressing up in outsize men's wear and striding out with the best of them is likely to set any pulses racing. It's true that décolleté dresses and high-heeled shoes have no place on a walking weekend, but equally there can be something attractive about a woman who is sufficiently confident about her femininity to risk leaving those trappings behind. Such a woman dares to indulge another side of her nature while away - but that's not to say she cannot revert to more feminine ways when at home.

In fairness to men, not all the blame for this discrimination can be laid at their door. Women themselves can display an ambivalent attitude towards other members of their sex who participate in such "unfeminine" activities. While there is at times an element of envy of those women who are fit enough, or brave enough, to head for the heights, such women are also likely to be regarded as some sort of alien species who are due at least sympathy, at most disdain. Many of my friends could think of no worse torture than being compelled to camp, and as for walking up a hill, well, you must be mad. I suspect they're right, but it's something I, and other women like me, wouldn't change for the world.

WOMEN'S TECHNICAL CLOTHING



As increasing numbers of women are drawn to mountain sports, and outdoor wear slips into mainstream fashion, the demand for female high performance clothing is rising to new heights.

Six of the leading outdoor clothing manufacturers discuss the key considerations of designing technical apparel for the female market, and highlight their solutions to some of the problems involved.

TOP, LEFT, FAR LEFT:
John Norris/Lowe Alpine

Introduction by Angela Elliott-Walker, Lowe Alpine

Without doubt women have played a significant role in pushing the limits of outdoor performance for many years. Anne Lister ascended the Vignemale back in 1834. Lily Bristow was the first woman to traverse the Matterhorn, the Grepon and the Charmoz in the 1880s. Adventurous Scotswoman Isabella Bishop toured Colorado and ascended Long Peak in 1873. Fanny Bullock Workman climbed Pinnacle Peak in Kashmir in the early 20th century, beating her archrival Annie Peck to snatch the women's altitude record. Pioneer of women's climbing in New Zealand, Freda du Faur made a number of notable climbs just before World War 1. Barbara Washburn became the first woman to climb Mount McKinley in the 1940s.

More recently, Wanda Rutkiewicz committed herself to almost exclusively all-women expeditions through the 1960s and 70s, making a number of fine Alpine and Himalayan ascents. Alison Hargreaves made many remarkable ascents in the Alps and Himalayas before her untimely death on K2.

Lynn Hill, the first person to climb the Nose of El Capitan completely free, was one of many women who pushed forward the boundaries in climbing throughout the 1980s and 90s and she continues to do so into the 21st Century. In climbing, the gap between men and women is closing fast. Recently Josune Bereciartu from Spain became the first woman to redpoint 8c+, and several British women have onsighted E7.

The involvement of women in outdoor sports at all levels continues to grow every year, a trend easily seen in the membership statistics of both the BMC and the Ramblers Association.

But despite this involvement the availability of women's products has been very limited. There have been women's clothing and packs available for a number of years, at Lowe Alpine we first launched women's gear over 10 years ago. But sadly some retailers have been reluctant to stock women's specific technical clothing.

However, there has recently been a significant increase in the demand for technical women's gear – letters and calls to manufacturers and magazines have highlighted the real need for the right kind of gear for women. It is now becoming more widely available at whatever level you participate.

Research shows that women do not object to the design of men's products and the technical features they offer, in fact, women also want those same products and features. What women do take issue with is apparel that is incorrectly proportioned and sized, pockets and features that highlight sensitive areas such as the hips and bust.

(LEFT) Anne Arran, 7b+ onsight, Calanques
(LEFT MIDDLE) Jo Allen, The Roaches

Apart from the obvious shape differences, horizontal and vertical proportions have to be correctly balanced to create functionally, as well as aesthetically correct garments. Small details such as map pockets can be uncomfortable – they should be designed so that the map can sit horizontally above the waist line rather than vertically hitting the bust.

Angela Elliott-Walker, is a specialist in technical apparel development and a keen outdoor enthusiast: she joined Lowe Alpine in 1989 and now heads up the 14 strong apparel design team.

Rab

Jo George, a freelance designer for Rab faces similar challenges, and agrees that designing for women is a tricky affair.

With the vast array of products available in the market place, sizes and styles vary hugely from manufacturer to manufacturer and sizing for many people is a problem, not just women. As a manufacturer, when we consider the differences between unisex and women's specific clothing we consider that the following aspects of design are crucial elements of a successful ladies product: Shorter Arms, Long Back, Narrow shoulders, Higher waist, Pocket positioning, Shorter leg,

Polly Murray on the south summit of Everest. Credit: Rab

Colour-ways and Sizing. However, this is not a black and white solution.

This is also true of men. It is assumed that if a certain manufacturer's style does not fit, another might, or failing this perhaps a unisex style will fit and ladies should not rule this option out when they go to purchase an item of clothing. Likewise a small man may consider purchasing a ladies design garment.

When we look at sales of ladies styles across the Rab range of Downpour® waterproofs, Berber pile/fleece and VapourRise® all-terrain wear clothing it is the less technical models that sell in volume. This is probably a reflection of the athletic build of active female outdoor enthusiasts who find unisex styles fit best.

Julie-Anne Clyma and Joanna George, both well-respected female climbers in their own right, both take unisex sizes. They are both slim but tall and quite long in the arm. This contradicts our style premise as set out above for ladies design. It does prove very difficult for us manufacturers to hit the mark.

As market leaders in the UK for quality down sleeping bags we are intrigued by the development of ladies 'shaped' sleeping bags by other manufacturers. The first and foremost function of a sleeping bag is warmth. Therefore any 'dead' air space within a sleeping bag should be kept to a minimum. Increasing the dimensions of a sleeping bag to suit the female form seems to contradict the above requirement.

A possible solution would be to offer an 80% sized bag for smaller people (men and women) whereby the length and girth of the bag is reduced accordingly. Currently, we offer our sleeping bags in short, extra short, long, extra long and extra wide options and combinations of all. This seems to address most requirements. Our Atlas range sleeping bag dimensions are 6.5% smaller on length and width than our Ladakh and Summit ranges.

However, the problem arises with retailer stock holding. Very few companies are able to display or finance a wide range of sleeping bags within their stores. They would also like to keep the choice simple, with a clear and defined range of products that do not confuse the consumer.

A down jacket, like a sleeping bag, needs to be snug but not overly tight. For winter 2001 Rab is developing a ladies down jacket for the female market. Our dilemma is technical or lifestyle? As we have seen most technical sales for women are in the unisex range and the everyday casual user is more likely to fit the 'traditional' ladies shape as defined before. There is no easy solution and ultimately as the manufacturer we take the risk on these products by incurring investment in materials, manufacturing time and stock holding.

The garments we produce are purely designed for the end user, however what we sell is ultimately a reflection of the retailer's commitment to our product. As a manufacturer we are selling to the retailer and not the consumer and so this is the biggest issue that restricts the growth of the ladies apparel market in the UK.

What should you look for in a technical waterproof, breathable jacket?

Swivel sight hood: when deployed and fitted (there needs to be captive toggles that allow one-handed adjustment), the swivel sight hood will protect you even in the worst of storms. Your vision will not be impaired as you look from side to side due to the cinching system and ergonomic cut of the hood. Toggle volume adjustments ensure a good fit whether or not you're wearing a helmet.

Double Storm-flapped Front Zip: a double storm flap is essential, secured by snap studs and hook and loop, shields the front zip from wind and rain. The zip should be two-way, so you can open the jacket progressively from top or bottom to aid ventilation.

Pit Zips: these vent the upper arm area when it's impractical to stop and remove the jacket, such as when snow and ice climbing. At other times, storm flaps ensure complete weather protection. Hook and loop tabs hold the storm flaps open when full venting is required. Look for a fold back on the under flap that acts as a directional gutter. This will channel any penetrating rain down and away.

Watershed Shoulders: a seamless shoulder design sheds water fast and relocates seams to less vulnerable areas for greater comfort and durability. All seams should be stitched down to ensure water runs off and doesn't gather in the channel.

Articulated Elbows & Knees: there should be additional fabric at the elbow to promote freedom of movement when repeatedly bending the arm, articulation increases the amount of fabric required at the elbow and reduces it at the inner elbow point.

Adjustable Cuff and Gusset: A hook and loop tab allows rapid cuff closure and adjustment, even when wearing bulky mitts. An elasticated cuff reduces heat loss without impeding circulation at the wrist. Look for cuffs that give a positive operation when wearing mitts or gloves.

Venting Pockets: Ventilation via mesh chest pockets allows air to circulate around the top half of the torso. When using the pockets in this mode, fold back the flaps and tab into place to improve airflow.

Hide-away Drawcords: Waist and hem drawcords can control the 'chimney' effect, which aids ventilation. Pull to warm up, release to cool down - simple as that. Concealed toggles and cords won't flap in the wind or tangle around harnesses.

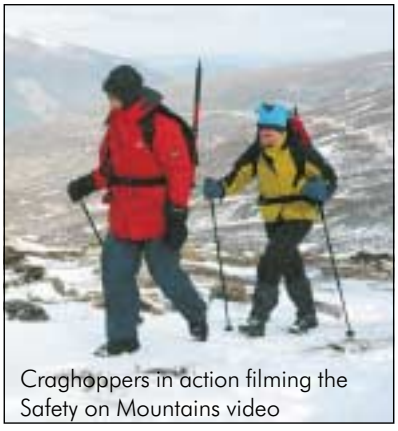
"I want clothes that are flattering yet functional. They must be light, breathable, and have a well sculpted design. I tend to go for stretch fabrics having a pretty well developed back and a narrow waist.

But being 5' 4" means that getting well fitting mountain trousers is almost impossible. It must be hard for the designers having to cope with the numerous shapes and sizes involved in our activity!" - Anne Arran, climber.

Craghoppers

Women's technical outdoor clothing is a serious business. More and more women are heading for the hills and naturally they demand products specifically designed for them. Craghoppers uses the philosophy that they design clothing and equipment to fit the purpose on a technical level and to fit properly on a style level. This is applied across its dedicated women's range, which comprises waterproofs, fleece, travel clothing, accessories, base layers and rucksacks. Women's products account for at least 35% of the Craghoppers range and for Spring/Summer 2001 there has been further developments for a more extensive women's range.

Craghoppers prides itself on its fit of women's garments and considerable research and development has been made in this area. For example, Craghoppers produce waterproof jackets designed for a woman's fit - not just a man's jacket with minor amendments. Craghoppers has reduced the amount of fabric around the biceps; built-in a more pronounced shape to the waist with more flowing dart lines to accentuate the woman's shape. The positions of the darts, piping and shapes of the pockets have been made to compliment the female form. Sleeves are shorter and the back narrower and the distance between waist drawcord and hem is longer than a standard men's jacket. Furthermore the map pocket is placed at the hem to avoid unnecessary bulk around the chest.



Craghoppers in action filming the Safety on Mountains video

Craghoppers' range of travel clothing has been further expanded for Spring/Summer 2001 and comprises specific women's styles in trousers, shirts, shorts and skirts within the Simoom and Kiwi ranges. Particular attention has been placed on the design of trousers due to women's different shapes and sizes, especially the waist and hips. Craghoppers trousers have been designed for a flattering yet comfortable fit to avoid any unnecessary restrictions.

Karrimor

The Pinnacle Jacket

Karrimor is actively developing more products for women as they account for a growing share of the market. Garments are being designed across the whole range from the very technical in the Alpiniste and Active ranges through to the Trek and Travel ranges. The main factors being addressed now that have been neglected in the past are the aesthetic look of the garments and how well they actually fit. In the past it was always a case of a woman's fit version of a mans style.

The emphasis is now on designing the garment as a woman's from the outset, even if it is doing the equivalent job of a man's style. To this end the focus is on making the style lines as complimentary as possible whilst still maintaining the technical features and end use of the garment. This has provided particular challenges such as with waist drawcords. This is a feature that is important for women, but directly conflicts with keeping a clean and feminine looking jacket. Innovative solutions - including half waisting, and placing the waist drawcord channel on to the inside of the jacket - had to be developed.

An example of the half-waist is in the Woman's Alpiniste Fleece Jacket. This garment is an industry standard, but the man's jacket has always been better, hence the woman's product has not received the attention that it deserves. It had four pockets whereas the woman's only had two. The problem with this style was that women do not always like chest pockets, but on a technical jacket like the Alpiniste, chest pockets are a necessity as a climbing harness prevents the use of the lower pockets. The answer was to give the woman's jacket four pockets like the mens. However, this meant that the waist drawcord would cut across the lower pockets! The solution was to have a half-waist where the drawcord went round the back of the garment and just round onto the front. This enabled both the pockets and the drawcord to be in the correct place.

In the Gore-Tex range, the Pinnacle woman's is one of our best selling jackets. The Pinnacle is one of our most technical jackets, but with the additional feature of a snow skirt it can cross over into use for skiing. It has two chest pockets, pit zips, rollaway hood, adjustable waist and hem, high reach arm, and is made from Gore-Tex XCR fabric. The visual design of this style is overtly female, and this has been one of the biggest single factors in its success.

The criteria for all woman's product at Karrimor is to provide all of the features and technical innovation that one would expect from any of our jackets, but ensuring that the fit is superb and the aesthetic stands it out as a woman's product.

North Cape

North Cape has a long established reputation for supplying outdoor clothing using high standard fabrics in functional designs, a job we continue to do out of our own factory in Stirling, Scotland. Our approach to the women's market is based on retailer feedback that above all women demand clean-cut functional outdoor clothing in solid colours, but without the inappropriate fit that comes with most unisex styles. Colours are important too, but only in combination with the correct fit which is critical on clothing designed for walking and climbing.

North Cape clothing is designed to be worn in layers, with a wicking base layer, insulating fleece layer and waterproof breath-

Technical fabrics

Fabrics are developed with selected manufacturers, such as Unitika and Malden Mills. For example, at Lowe Alpine approximately 90% of the fabrics used are developed exclusively with their fabric partners, they are not off-the-shelf quality. Fabrics will be developed based on a number of criteria:

- Performance relevant to the end use.
- Aesthetics and hand – some fabrics can perform well but will be very stiff or look terrible.
- Long term durability and performance.

The garments are then tested by professional climbers and guides as well as in the laboratory. Particular areas of concern may be:

- Colour fastness to rubbing, laundering and sunlight.
- Abrasion and pilling resistance on fleece.
- Clo/Tog (warmth) value and air permeation on fleece.
- Waterproofness - hydrostatic head, dew point and spray ratings.
- Breathability – moisture vapour transmission.

TECHNICAL

Vicki Barrett on "Witches Way"

able shell. In all categories we offer a women's option, normally with a strong popular colour common with the unisex range (e.g. navy or black) plus other 'women specific' colours (currently pastels such as 'seagrass' and 'French blue' are selling well).

Base layers work best when the fabric is in contact with the skin, so our women's options here have a 'fitted' style while retaining the long back length crucial for outdoor activities where a rucksack is carried. The range includes Coolmax for the summer and warmer Rhovyl thermal base layers for colder weather.

Fleece has long been the staple garment in everyone's wardrobe, though trends are leading to lighter weights and Microfleece. Again fitted styles are the order of the day when it comes to women's styling, with the main practical issues being arm length and shoulder width/volume. Our women's styles here avoid the excess material and resultant fabric rucking that would be uncomfortable when using a men's cut fleece. Key styles include the women's Idaho, a Thermal Pro jacket with a windproof front, and a multi-sport Microfleece pull on at only 250 gms!

With waterproofs, our design philosophy overcomes similar issues to those thrown up by fleece, that is arm length and shoulder width. However, when it comes to waterproofs the UK women's market makes demands different to those from continental Europe where a shorter length style is preferred.

Finally, North Cape has recently produced a range of Supplex trekking trousers with women's options and women's zip-offs.

Berghaus

In 1999 Berghaus organised a Women's Focus Group featuring active outdoor enthusiasts. The main conclusions were that women have expectations of choice, fit, style and equal retail status. They do not feel comfortable shopping in outdoor or sports retailers, and are prepared to pay for a product that fits and is well styled. Most prefer subtle branding and would aim to update their wardrobe more than twice a year

For Autumn/Winter 2000, 50% of Berghaus' core Trekking range is designed specifically for women, with particular attention on fit, styling and colour. Berghaus has also introduced specific women's advertising, swing tickets and point of sale. On the whole retailers are slowly becoming pro-active with regard to pushing women's product in-store and some have introduced features such as changing rooms and specific women's areas.

Sculpted tops form an essential part of many womens ranges. Credit: Berghaus

Looking forward to Spring/Summer 2001, specific developments in the Berghaus women's range include summer trekking trousers, Endurance products and a range of trail running footwear.

Designing for women is a tricky affair

"I hear lots of women complaining that shops don't stock many garments for women, or that if they do, they don't fit. The problem - we women come in too many shapes and sizes! As a climber myself, I've noticed a big increase over the last few years in the number of shops which now stock women's ranges. In most cases the percentage compared with the men's or unisex clothing is still very small.

I always dash towards these women's ranges, look through them and usually either turn back towards the men's garments because there is a bigger choice, the garments have the technical features on them that I want, or purely because men's garments fit me better. I'm not a particularly masculine shape, however I do have large shoulders - first major problem. Women are 'meant' to have smaller shoulders, many do of course. However in my case, sqeezing into my size in a ladies jacket usually feels like trying on a straight jacket - freedom of movement is lost instantly!.

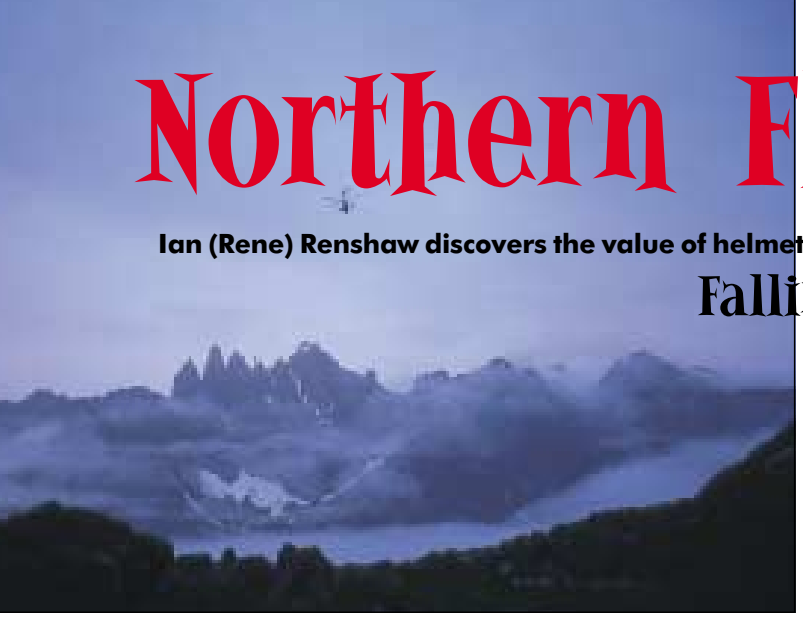
Then there's the question of arm length. I'm typical of many active women, quite tall, five foot nine, and quite slim. Because I'm that height my arms are longish too so problem number two - the arms on ladies garments are generally too short for me. And that brings me to waistlines. I find the waist usually sits too high on a ladies cut, again this may be due to my 'problem' of being tallish. Other women will complain of a completely different set of problems, depending on their shape and size. Being a designer, I have to admit to not knowing what the average shape of a British woman today is. We see the Marks & Spencer advert on TV informing us (by showing a large naked female running across the meadows), that being an unusual or plump shape is actually the normal shape for British women today.

They have done their research, so I guess they must be right. Unless numerous sizes (long back, short back, long leg, short leg, narrow shoulder, wide shoulder etc appear on the shelves), we will never be able to get garments to fit all shapes and sizes of women. It is a bit of a catch 22. Unless outdoor garment manufacturers offer a wide selection of female cuts, women will not buy the products as they may not fit. If women are not buying the products, shops will not stock them. If shops will not stock them, manufacturers will not make it. What is the answer? Maybe we, as designers, should be a bit cleverer with all those fantastic technical stretch fabrics around!"

Joanna George,

Instinct. Rab Freelance Designer.

TECHNICAL



Northern Flights

Ian (Rene) Renshaw discovers the value of helmets, insurance and morphine

Falling off is easy...

I remember screaming to warn Jon, I remember clutching the chunk of rock that had come away in my hand, I remember looking at the Friend as I flew past it. Then there's only a vague recollection of impact and continued falling.....

Jon heard the scream and felt my weight come onto the rope, but then nothing. He shouted, but I was unconscious, bliss fully unaware of the situation we'd just been dropped into. He shouted again, fearing the worst, but this time I managed a weak reply.

Damn, my ankle hurts, and my left shoulder. I'm seeing stars. There's a large lump on the back of my head beneath my helmet. I must just get up to that spike and take a belay. I climb in a dream like state, drape a sling over it, clip in and sit down. The stars return and a warm feeling moves through my body into my head. Ooh, that feels nice, I could shut my eyes and go with that feeling. NO! Stay conscious! Think! Get out of this!

The weather had been threatening all day, the mist toying with us, rolling up the valley and engulfing the face. But we'd gone for it anyway - the biggest challenge of the trip yet, a 25+ pitch new route on this pristine rock spire tucked away in a remote Greenlandic fjord.

Even the ubiquitous crunchy black lichen hadn't detracted from the pure enjoyment of moving quickly and efficiently towards the summit. A potential belay had been close, and I'd slid a bomber Friend in before heading up a classic layback flake. But the flake hadn't been as sound as it looked, nor had the friend. And now instead of a summit celebration, I was looking at Jon's worried face.

My left ankle was already twice the size of my right. Jon wasn't fazed, "Don't worry it's going to be alright. I'll set an abseil up just over here. We'll be OK." I'd been lucky, my injuries could have been much worse. All I had to do was stay conscious and make no mistakes. I knew getting down was not going to be pleasant, but I knew I could do it.

Although we were only a few pitches away from the top, our line took the extreme left hand of the spire, so with a bit of luck, we could slink off the side onto the glacier at the back. We'd been there before - it was familiar territory. Jon set up an ab station, aiming for the glacier. He helped me across, then left me with a few reassuring words before abseiling out of sight. Eventually the ropes were free, and with great difficulty I began the descent.

I didn't bother with curses or getting angry with myself for not climbing with more care. It would have been pointless and self-indulgent to start shouting or cursing and feeling sorry for myself in any way. Besides, I was lucky; my predicament could have been much worse. I only had one seriously damaged limb. My left arm was painful to use, but it still seemed to work – I was pretty sure it wasn't broken. My lower back and hip were grazed and swollen, but still had full mobility. The lumps on my head where I'd been knocked unconscious were pretty sore – I was sure that if I hadn't have been wearing a helmet I would have died. I'd got off pretty lightly considering that I'd fallen over 60 ft hitting several ledges on the way.

Abseiling was awkward and painful at first. My left arm was now stiffening up and was barely any use, and my ankle kept exploding with pain as it slapped into the various bulges and grooves. But pain aside, the descent to the waiting glacier went incredibly smoothly. The ropes didn't jam, and belay ledges seemed to appear on demand. I even felt sufficiently relaxed to notice a few awesome looking hard crack lines.

After four rope lengths we reached the glacier. It dropped steeply away beneath the cliff, and then eased until it was virtually flat by the time it reached the col that we were aiming for. It was a friendly glacier to negotiate – if you can walk! But the cold and physical effort of crawling strangely took my mind off things, I almost felt cheerful.

But any cheerfulness quickly disappeared as I belayed Jon across the col slabs to the fixed ropes that had been placed earlier in the trip. The pain returned with a new intensity, and as I lay panting and writhing, I just didn't know if I could make the traverse. But there was no alternative. It took a great deal of effort to start crawling along the pile of hideous loose blocks that had been shoved onto the shoulder of the col by the glacier. As I moved I couldn't help sending dozens of them bounding down the steep slabs below, and I just hoped the whole pile didn't go, taking me with it.

I heaved a sigh of relief when I finally made it across the slabs and clipped into the ropes. The relief was short lived as I looked down at the huge slabs, massive snow patches and boulder fields that I still had to negotiate before I made it to the sanctuary of a bivvi bag. What sanctuary? I was in a remote area of Southern Greenland; the pain would continue, hospital would be a long time coming, and it was starting to rain...

(LEFT)The spire from ABC, Credit: V. Cooper.
(TOP) The helicopter with a relieved passenger

2 DAYS THIS SUMMER

05:00 Rene & Jon set off from bivi
14:05 The fall!
15:30 Reach glacier after abseiling
16:30 Reach col after crawl
17:00 Abseil down col
18:00 Jon belays Rene down snow patches and rock slabs.
18:30 Reach lower boulder field

19:06 Meet Virginia, another member of the team of 8, who was in area checking out another route. More snow crawling now with swollen, frozen knees. Virginia tries dragging Rene, but it's too painful.

20:30 Yet more boulders until the bivi site is reached. Rain continues. Jon runs down to Advance Base Camp, luckily all the team are there. 2 members of the team take a tent up to Rene, the rest descend to Base in the dark to start raising the alarm in the morning

21:30 Tent brought up - A "Night of Pain" begins.

06:00 Sat Phone is discovered to be malfunctioning. Can only transmit in 5 second bursts, could die at any moment. Cannot get through to the Greenland Police like this. Manage a 10 second transmission to the BMC office, hopefully they wrote down the GPS co-ords OK….

09:00 BMC contact embassy, insurance, & Greenland Police. The team have no idea if or when a helicopter will arrive, since for a previous incident it took 2 days. There is only one in the area, plus they don't fly in bad visibility (like today), as they've already lost too many….The day is spent waiting, and hearing imaginary sounds. Sat Phone now totally dead.

15:00 Police Boat arrives in the Fjord. They're expecting Rene to be on the foreshore. Police radio in a chopper, have no idea if it will come though…

18:00 Paramedic from the boat reaches Rene, after nearly being lost down a bergshrund. But he has morphine.

19:30 Helicopter assumed not to be coming, paramedic departs, leaving Virginia with a supply of morphine, and some basic instructions. Paramedic falls down bergshrund again.

20:30 Helicopter reaches Rene. Comes down right on the tent. As Rene is getting bundled in, the wind increases, and skews the chopper. Rene is half hanging out, Jon gets thrown down a hole, hapless paramedic gets hit by the wheels and disappears underneath. Paramedic located and retrieved. Chopper departs.

22:00 Reach Nanortalik Hospital.

Who does the ML Award?

Recently Letty Sudds, from St.Martin's College, Ambleside, conducted some research into ML Award candidates.

The main aim was to consider why so many candidates, having registered with the scheme, do not proceed to assessment. Nearly 1000 questionnaires were distributed, plus a number of interviews conducted. Most of the survey confirmed the views held by those who work on ML courses, but it was pleasing to have researched data rather than just anecdotal evidence:

Age & Sex

80-85% of candidates at all stages of the scheme were male, and correspondingly 15-20% of the candidates were female. The majority of candidates progressing through the scheme were aged between 20 and 40, although there were significant numbers of candidates and Award Holders over 40 and over 50.

Occupation

The main occupations of candidates were, in descending order, education, the armed forces, service industries, students, professional outdoor instructors and public services. Teachers provided by far the highest proportion of Award Holders, perhaps because they are the candidates most needing an award to be able to 'get on with the job'.

Reasons for registering

The main reason for registering with the scheme (31%) was for voluntary sector involvement. Nearly a quarter of candidates registered for personal skill development, while private and public sector employment weighed in with 21% and 14% respectively.

The age range of students/clients/companions which candidates intended to work with covered a wide spread, but 12 – 25 year olds were unsurprisingly the most popular, although those working with adults comprised a significant proportion.

Reasons for not attending

The main reason for candidates having not attended a Training or Assessment course was simply 'lack of time and experience'. Obviously one dictates the possibility of the other, and with an emphasis upon experience being central to the scheme this is an expected observation.

Positives & negatives

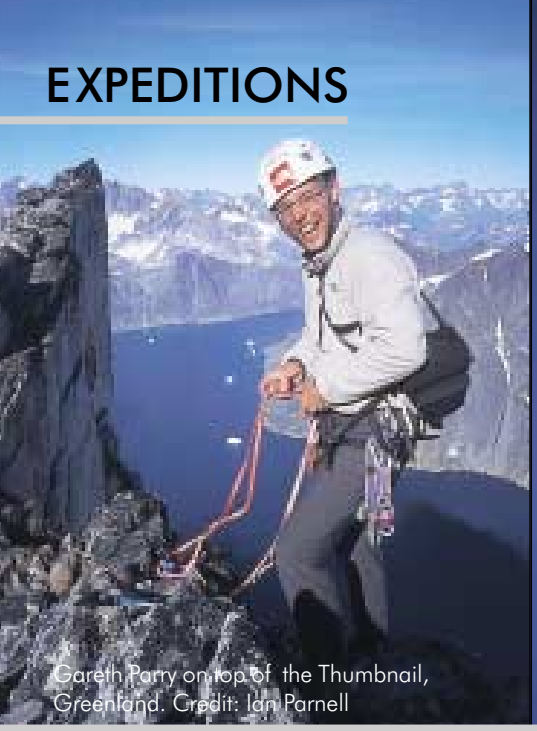
Positive aspects of the assessment process included learning, meeting others and sharing experiences, the assessors (no, we didn't make this one up!), personal achievement and gaining confidence.Negative aspects of the process included stress/anxiety/pressure, the content of the assessment, the assessors (!), the standard of others on the assessment, and the weather.

Success rates

The success rate at assessment matched our own figures (and those of the SPA scheme) with 77% of candidates passing, 22% being deferred (with a significant percentage of these needing only to present an up-to-date First Aid qualification, and a pleasingly small 1% failing completely. The most common syllabus areas where candidates failed to meet the required standard were navigation (61%), security on steep ground (25%), followed much less often by group management, weather knowledge, and logged mountain experience.

Conclusion

In conclusion, the number of candidates reaching assessment is not as worrying as at first sight. The training course is often felt to be the most valuable experience as it demonstrates to candidates where they are at in the scheme of things, and what skill levels and mountain knowledge they need to gain before taking groups of inexperienced walkers into the mountains. The results of this study are already being used to modify the Board's work programmes and are guiding areas of examination for workshops, moderation and written articles, and we are grateful to Letty Sudds for her efforts.


Gareth Parry on top of the Thumbnail, Greenland. Credit: Ian Parnell


Jules Cartwright on the major new route "The Knowledge". Credit: Ian Parnell


Julie-Ann Clyma climbing on the South buttress of Pumari Chhish. Credit: Payne

EXPEDITIONS 2000

2000 saw yet another strong year for British expeditions, as both seasoned campaigners and newcomers alike tested the limits of airline baggage allowances, and headed out to the more challenging parts of the globe.

Once again a wide variety of exciting objectives were tackled, ranging from cutting edge technical difficulties to exploration of some of the most remote locations on earth. From big walls in Borneo and seacliffs in Greenland, to 6000m peaks in Nepal, if it had climbing potential the chances are a British team was there.

Cochamo 2000

Seb Grieve and Leo Houlding were hoping to free some of the existing routes as well as explore new possibilities. In the end poor weather put paid to these ambitions and the pair had to be satisfied with a repeat of one of the existing Mt Trinidad routes.

Poi North Face

John Barry, Steve Sustad and Pat Littlejohn were able to climb a significant new bolt-free line on this huge North Kenyan Kopje. The route is reported as being 'rather serious' with pitches up to E6.

Welsh Low's Gully

Jerry Gore, Mike Turner, Louise Thomas and Steve Long headed out to Borneo, and the impressive granite walls of the infamous Low's Gully. Choosing very steep ground to avoid any waterfalls, a fine new line resulted - The Crucible, 800m A4, E4.

QuimsaCruz/Illimani Expedition

Adele Pennington's all women team of six had an extremely productive time in the valleys within the southern Quimsa Cruz, Bolivia. A variety of alpine and rock routes were tackled, resulting in 16 new routes and 5 first ascents. Their secondary aim of the Khoya Khoyu route on Illimani had to be called off due to an impassable glacier.

Cymru/Bolivia Quimsa Cruz

Mike Rosser and friends visited several valleys in the northern part of the range to attempt new routes on essentially rocky objectives. The team spent three weeks in the area, giving first ascents of 10 new rock routes and three unclimbed peaks. Received Welsh Sports Council Grant.

Patagonia Winter Crazy Gringos

Unfortunately due to heavy snow and extreme winter weather affecting Chile, Argentina and much of the South, the crazy gringos failed in their objective to climb Torre Egger. But they firmly believe that the Patagonian winter can offer some great conditions, even though they only achieved two days climbing overall.

Cape Renard Tower

Julian Freeman-Attwood's team were making another attempt on this remote tower, which lies off Tierra del Fuego. This time they came very close to success but were stopped by a blank section just short of the top. However they did climb Monte Italia on Wiencke Island.

Greenland 2000

Bob Shepton's multi national team were responsible for another raid on Greenland. Using a yacht sailed from Scotland, they sailed up the West coast of Greenland to bag the 1045m granite wall of Sandersons Hope, and two additional summits along the way.

Cerro Torre Winter

Dave Hesleden and Andy Parkin hoped to find good ice in the Maestri-Egger route on Cerro Torres NE face, but Hesleden pulled out, and Parkin went off on his own but bad weather prevented any ascents.

Thumbnail 2000

Ian Parnell, Matt Dickinson, Ben Bransby and Gareth Parry successfully made the first free ascent of the Thumbnail, possibly the worlds biggest seacliff, in the Torssuqatoq Sound, Southern Greenland. After 31 pitches at up to E6 6b, their altimeter read 1350m, making the face bigger than the Troll Wall. However this fantastic achievement was marred by the tragic death of support team member Matt Bransby on a nearby peak.

Eastern Torssuqatoq Spires

Jon Bracey's team had a highly successful time in their chosen area. Over 10 new rock routes were established, with possible first ascents of 5 summits. The main objective, the 700m SW arête of Whaleback Peak succumbed early in the trip at a ED 1, leaving plenty of time for further exploration. Even the flying time of one team member (see page 24) apparently didn't dampen their enthusiasm.

South Greenland

Jim Lowther's group included both British and American members. The British team explored the area between the Kangikitsoq and Nup Kangerdlua fjords, and made 11 first ascents, including some in an area never previously visited.

Lemon Mountains

Richard Pash's team returned to their favourite stomping ground of East Greenland hoping for 10 new unclimbed peaks,

and got 32 new routes, including first ascents of 20 mountains in the area. Not content with just that though, they explored the Lemon and Lindbergh mountains by ski, including a 60km ski tour between the ranges.

Watkins Mountains

Christine Watkins' multi-national all-women team explored a previously unvisited glacier system to the North East of the Woolley, Greenland. Despite exceptionally bad weather and delays forcing a rethink, the group hooked up with a Tangent expedition to grab 6 peaks, 4 of them unclimbed.

St Elias 2000

An ambitious and committing high level traverse attempt from Mt Augusta to Mt Newton by Alun Hubbard and friends. Although failing to navigate a route through the icefalls on the N Ridge of Augusta, they managed to thread their way through the icefalls barring the way to the Augusta-Baird col, from which a first ascent of Mt Baird was claimed via the east ridge.

British Yukon 2000

Mick Fowler, Andy Cave, Duncan Tunstall and Chris Pasteur headed off into the Yukon for an attempt on the unclimbed NW face of Mt Kennedy. This objective had to be rethought due to high avalanche risk, but they pulled off the first alpine style ascent of the North Buttress, described as "serious". Gulp.

Denali/Hunter, Alaska

Jules Cartwright and Ian Parnell received the Lyon Equipment Award for this trip to Alaska, and had a great time there too, resulting in "The Knowledge", a major new route on the North Buttress of Mount Hunter. Weighing in at a hefty 1200m, Alaskan grade 6, ED4, the route starts up the first three pitches of Moonflower Buttress, then climbs direct before rejoining Moonflower for the exit, a total of 24 new pitches. But it wasn't all plain sailing - Ian broke several ribs after Jules knocked a snow mushroom on him on pitch 17, giving added interest to the finish.

Crown Jewel

Brian Davison, Lindsay Griffin and Brian Griffiths visited the previously unnamed glacier approximately 25km south of Denali. 14 probable first ascents resulted, including 12 of previously unclimbed peaks. Heavy snowfall in the area gave a striking combination of Peruvian-esque ridges and Scottish mixed style climbing.

Mt Russell

Geoff Hornby and Mike Smith hoped for an attempt on the unclimbed West face of Mount Russell in the Central Alaska range. This objective had to be abandoned due to continuesly high winds, but this team of two still managed first ascents of Mount Sholes and Mount Tassles.

Pumari Chhish

Julie-Ann Clyma and Roger Payne returned to make another attempt on the first ascent of the 7350m South Summit. Highly unstable weather patterns and almost constant snowfall forced a retreat from their highpoint of 5100m in extreme avalanche conditions. The remainder of the trip was spent on reconnaissance of the other glacier systems to find alternative approaches to the mountain.

Solu

Of the possible pair of glaciers, Sokhu or Solu in the West Central Karakoram to choose from, Dave Wilkinson's expedition plumped for the Solu, which was apparently totally unvisited. Access to the side glaciers was fraught with difficulty, and compounded by snow free conditions revealing rubbly moraines. Eventually a tortuous route was picked through, giving a good probable first ascent of Sekha Brakk (Dragonfly peak) at 5200m.

Danga

Chris Bonington took a family holiday to the Danga region in the Kanchenjunga area of East Nepal. After some initial reconnaissance, the team swiftly dispatched Danga II (6194m).

Anglo New Zealand Hindu Raj

Adam Thomas, Phil Amos, Simon Woods, and Jock Jeffery travelled to the little visited Ochiri/ Matkesh valley in the South East Hindu Raj in search of unclimbed 6000m peaks. As hoped, they achieved a great first ascent of Uddin Zom, 6010m via the South West face and West ridge at D-/D+.

Hucho Alchori

Mary Twomey and friends attempted first ascents of sub 6000'ers in this little known Western Karakoram valley. The valley, which is south of the Hispar, had not previously been visited by mountaineers and had great potential, but very poor snow conditions put a stop to their plans.

British Tibet

Charles Clarke carried out an exploratory expedition in the Sepu Kangri area and met with some success.

British Silk Mountains

Tom Avery headed up a mixed British and Russian team for this trip to the Eastern Zaalay mountains of Kyrgyzstan. A total of nine previously unclimbed and unnamed peaks were scaled during an intense five week period. Highpoints included Pik Quenelda (5439m) and Golova Orla (5440m).

Mick Fowler on the North Buttress of Mt Kennedy. Credit: Andy Cave

Kazak Apogee

Stuart Batey and his team of military surveyors undertook a highly successful geographic survey of the Dzhungarian Alatau, Kazakhstan.

Parbati South West Ridge

Olly Sanders and Co. attempted one of the classic unclimbed lines of the region, but were thwarted by excessive snow and loose ground.

Arwa Spires

Just Back: Al Powell's mostly young team met with success with their 1st ascent of Arwa Spire (6193m) via the North East ridge.

Still out there....

Chamar

Antony Barton and team are to attempt the 2nd ascent of this Nepalese 7000'er.

Western Patagonia

David Hillebrandt's team are going for Angel's Wings and/or Cerro Aguilera in Chilean Patagonia.

The BMC administers **UK Sport** funding for expeditions. To meet the criteria teams must be attempting first ascents or first British ascents in remote mountainous environments. A new element of the UKSport funding is the 'excellence' focus fund. This allows increased funding to expeditions that are felt to be world class, and in many cases this fund allows high standard expeditions, where the cost may be beyond the personal means of the members, to take place. Here, all the expeditions that at least gained BMC approval are listed.

Applications are via the Mount Everest Foundation which also provides substantial grant opportunities to exploratory British or New Zealand expeditions. Write to Bill Ruthven, Gowrie, Cardwell Close, Warton, Preston PR4 1SH, giving details of objectives. See www.mef.org.uk for more information.

learning the ropes

By Frank Bennett, Beal

With an ever increasing choice from manufacturers, the hardest part about buying a dynamic climbing rope can be deciphering what's on offer, and understanding how it relates to your chosen activity. The days of simply choosing 9mm or 11mm are long gone, and from a light single to a heavy half, things can get very confusing.

However, all is not lost, armed with a few facts it is possible to not only make the right choice of rope, but also to understand what all those strange symbols at the end of your new rope mean.

The technical information encountered on rope labels is dictated by two standards. Manufacturers make ropes to the European Standard (European Norms EN 892) and have them tested by an independent laboratory. Some manufactures also have their ropes tested to the older UIAA standard that, for some tests is more demanding, but this is not required by law. This article explains how to read this information.

Impact force

This rather evocative term means the force transmitted to the climber at the moment a fall is arrested. This force is also transmitted along the length of the rope towards the anchor points, runners, karabiners and the belayer.

It is the capacity of the rope to absorb the energy of the fall, which makes it possible to reduce the Impact Force and thus diminish its effects. A low Impact Force rope will provide a "soft landing", i.e. a gradual slowing, as opposed to being pulled to an abrupt halt. This is obviously more comfortable, but importantly a Low Impact Force rope will absorb a lot of the energy from within a climbers protection system of runners and belays, thus improving the chances of keeping them in place.

For EN892 Impact Force is measured using a test derived from the UIAA standards. For a single rope the standard allows a maximum value of 12kN during

THE ROPE END

The rope end indicator allows you to assess an unlabelled or used rope. If it has passed the Standards, it will feature the CE and UIAA symbols, and it will also indicate the length and type of rope using the following symbols:

SINGLE ROPE
Used in single form as the name suggests. Designed for rock climbing, best suited to relatively straight pitches and routes that do not require an abseil descent.

TWIN ROPE
Now of limited use, with a requirement to clip both ropes every time. New low weight half ropes with greater safety and usefulness have virtually replaced this type.

HALF ROPE
Half ropes, as used in double rope technique, are recommended for trad climbing, mountaineering and long rock routes where abseil descents are required. Also recommended whenever runners are of dubious quality notably on ice and snow.

MOUNTAIN WALKING or TOUR ROPE
Used to assist security on mountain walks, glacier or ski mountaineering trips. Normally 8mm dynamic, in a choice of lengths, with and without tie-in markers. Not suitable for rock or mountain climbing.

the arrest of the UIAA standard drop (fall factor 1.78) with an 80kg mass. For a double rope a single strand is tested, (i.e. a half rope) and the Impact Force must be below 8kN during the arrest of the first UIAA drop with a mass of 55kg.

Choose the lowest Impact Force rope if you use "trad" gear or ice screws, or just want the longest possible use. The Impact Force of all ropes will increase with use and as they accumulate falls.

Number of falls

To conform to the standard the rope must withstand five successive drops tested with the mass in the Impact Force test. However the number of falls quoted for single and for double ropes are not directly comparable as they are not tested with the same mass. Although the EN892/UIAA test only examines the first five test drops, manufacturers do also test ropes to destruction and will quote in the product information the number of drops to failure. This is a useful guideline, the more drops the better, but because test rigs vary between manufacturers these figures should not be taken too literally.

Knotability

The name given to the test to indicate the handling and suppleness of a rope. The test is performed on a simple overhand knot under a 10kg load; a calibrated mandrel is used to assess the internal diameter of the knot. The resultant measurement must be less than 1.1 times the rope diameter.

Choose a rope with a low ratio for more flexibility (easier to knot) and softer handling. Or choose a rope with a ratio near to the test maximum for firmer handling and a consistent "round" feel that will be a little harder to knot but easier to untie after loading.

Sheath slippage

The core (kern) and sheath (mantel) of the rope are two independent components, which, if the construction is not carefully matched, have a tendency to dislocate and slide against each other.

Under the effect of a descender the sheath deforms and little by little it bunches, creating a slack zone around the core and bulge points, known as the sock effect. This effect results in more rapid wear, particularly when top roping or other intensive use, and it also risks jamming in descenders or belay devices.

The Sheath Slippage test is the only test parameter for which the EuroNorm requirement differs from that of the UIAA. After pulling two metres of rope through a designated constriction, the European Standard requires that the sheath slippage should be less than 40 mm, or 2%, whilst the UIAA standard is more severe, requiring a value less than 20mm, or 1%.

Choose a rope with a low sheath slippage, or even better 0%, to avoid jamming risks.

Extension (Elongation) under load

This must not exceed 8% for single ropes, or 10% for double ropes under a load of 80kg. It is this elasticity that allows the rope to absorb the fall energy, but the stretch must be limited or the rope will behave like a bungee.

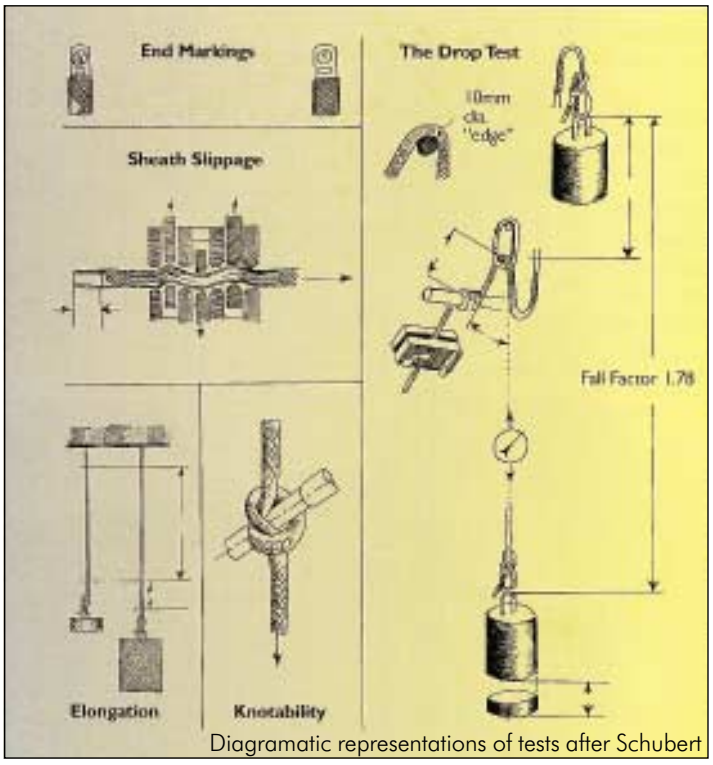
Choose a rope below the required maximum for comfort and performance.

Extension during the first fall

This must not exceed 40% in the standard UIAA test.

Diameter and weight

Ropes of a large diameter generally have a longer active life. However there are some new ropes on the market that use a 50% sheath to 50% core ratio giving an increase of up to 30% life over standard ropes of the same diameter. These new ropes tend to have a higher impact force and so may not be ideal for all types of climbing, but in high wear and tear situations they can be an excellent choice.



Diagramatic representations of tests after Schubert

Because rope construction varies in this way the measure of rope diameter is of less relevance than the weight per metre, and it is better to compare the latter than the stated diameters. The overall performance of a rope may be considered as a balance between its weight/m and its dynamic ability.

Number of bobbins

This is not part of the standard but does give helpful criteria to assess the abrasion resistance and handling of the rope. The sheath that encircles and protects the rope core is formed from groups of filaments, each woven from a bobbin. For a given diameter of rope a larger number of bobbins will give better dynamic characteristics, but a smaller number of bobbins will give better abrasion resistance.

For single ropes choose 48 bobbins for dynamic performance or 32 bobbins to maximise abrasion resistance. On half ropes fewer bobbins are required to give comparable performance.

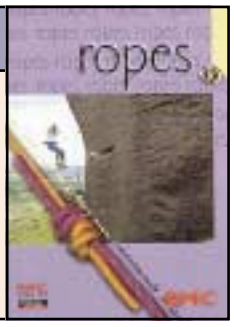
Dry treatment

A wet rope is unpleasant to handle and prone to freezing, hence various chemical and physical treatments exist to reduce the amount of moisture absorbed. Dry treatment also increases rope life by reducing the tendency of dirt to enter the weave and by reducing running friction. The dry treatment wears off with extensive use, but this is being addressed with a superior polymerisation process.

Choose dry treated ropes for Winter or alpine use, or if you like climbing in the rain: they will be lighter, easier to handle, and last longer.

MORE INFO

For much more information on ropes, take a look at the BMC Ropes booklet. Priced only £2.50 to members / £4.00 to non members, available from the BMC office.



HEADS UP

Part 2 of the Helmet test report

Following the publication of the helmet test results in Summit 19 several climbers have asked the question – "which is the best helmet?" And in response we have been generally annoying people by saying "it depends" and "any helmet is better than none". The bottom line is that it's all about making an informed choice. To help out in this issue Mark Taylor takes a closer look at the helmets tested during the programme - which one will work best for you?. Also included is a reminder of the test results - remember lower is better.

Julie Seyfert-Lewis keeping her head Vector. Credit: Dave Turnball

What are we looking for in a helmet?
Alpine snow routes: Lightweight, cool, all round performance.
Alpine and ice climbs: Protection from impact on top and rear of helmet. Resistance to penetration. Lightweight (Alpine).
Rock climbing: Lightweight, comfort. All round performance including protection against impacts at the rear and sides.

As part 1 showed different helmets have a great variation in their strengths and weaknesses and so what's good on big alpine routes may not be ideal for Stanage and vice versa. What also came to light was the weakness of the standard test in terms of giving a true reflection of how a helmet might perform in practise. In addition the testing programme has shown up worrying inconsistances between test houses, both in results achieved and methods used. A UIAA working group and other interested parties are now attempting to address this.
Here we will look in detail at the technical attributes of the helmets tested and the way in which different material react to impacts. All this adds up to you knowing a lot more about your next helmet than the fact that it passes the CEN standard, but it's still going to be up to you to make the choice.

Shell/Cradle style

In crown impact situations traditional style helmets, which feature a shell and a cradle, offer the best performance. During the impact several energy-absorbing mechanisms come into play. Any slack is taken up in the cradle, and then the shell deforms whist the cradle stretches. Some shell materials deform more than others and so designers have to allow different amounts of shell cradle clearance for different helmets. In an off centre impact the cradle may offer less protection and the deforming shell may touch the head, this is very dependant upon the design of the shell and helmet. This is a field we are planning to investigate.

HB Astral (Blue Water in the USA)

A traditional style helmet with a 2.2±0.1mm thick vacuum formed ABS (Acrylonitrile Butadiene Styrene) shell, a three strap polyester webbing cradle and an adjustable padded headband, where adjustment is via a webbing which slides through a locking buckle. The chinstrap is easy to adjust and features a quick release buckle, which is curved for comfort. The shell features a raised crown profile for improved impact performance. This helmet has a shell/ cradle clearance of approximately 30mm. There are elasticated bands at the front and rear to hold a head torch.

Pros & Cons: The thick polymer shell is very impact resistant. The performance of ABS polymers can be seriously compromised if they are allowed to come into contact with the wrong solvents, so paint and stickers should never be used without first seeking the manufacturer's approval. After an impact the shell returns to its original shape, but white striations on the surface of the helmet show it has been damaged (unfortunately these are not obvious in helmets with a white shell).

The HB Astral after a test impact: Note the striations

In test-transmitted forces: Top impact 5.5kN, Front 0.7kN, Side 0.8kN, Rear 2.7kN.

HB Olympus

The Olympus is very similar in construction to the Astral, with a 2.0±0.2mm thick vacuum formed ABS shell and the same cradle, headband and chinstrap as the Astral. The shell has several raised features to improve performance. The shell/cradle clearance is approximately 40mm. There are elasticated bands at the front and rear to hold a head torch.

Pros & Cons – See HB Astral.

In test-transmitted forces: Top impact 6.3kN, Front 1.8kN, Side 2.2kN, Rear 5.7kN.

HB El Cap; El Cap Kevlar/Carbon

The shell of the El Cap is manufactured from 2.0±0.5mm thick glass fibre reinforced polymer (GRP), whilst that of the Kevlar/Carbon version is the same thickness, but some of the glass fibre layers have been replaced with Kevlar and Carbon fibre woven cloth. The cradle, headband and chinstrap are the same as that on the HB Astral helmet. These helmets have a shell/cradle clearance of approximately 30mm. There are elasticated bands at the front and rear to hold a head torch.

Pros & Cons: These composite shells are very penetration resistant, the Kevlar/Carbon version offering slightly more resistance than the GRP version. During an impact, the shell dissipates energy by breaking; the mechanical bonds between the resin and the Glass/Kevlar/Carbon fibres are broken, resulting in very obvious shell damage.

In test-transmitted forces: Top impact 5.4kN, Front 2.9kN, Side 3.5kN, Rear 2.0kN.

JB Lightweight after impact - note the obvious damage indicative of fibre glass helmets.

HB Joe Brown Lightweight

Other than its distinctive shape, this helmet is of the same construction as the El Cap, except the shell/cradle distance is increased to approximately 40mm. There are elasticated bands at the front and rear to hold a head torch.

Pros & Cons: The increased cradle clearance allows a design which results in a lower transmitted force. See El Cap.

In test-transmitted forces: Top impact 4.2kN, Front 2.9kN, Side 2.5kN, Rear 3.1kN.

HB Carbon/Dyneema

This new shell material is constructed from resin bonded woven Carbon/Dyneema matting, this is 2±0.2mm thick. The cradle, headband and chinstrap are the same as that used in all the other HB helmets. The shell/cradle clearance is approximately 40mm. There are elasticated bands at the front and rear to hold a head torch.

Pros & Cons: The new shell material produces a helmet with the best crown impact performance with almost the lightest weight. In penetration tests this helmet has shown that it can resist repeated impacts on the same location. The shape of the helmet has resulted in a higher front impact result than might have been expected, although few impacts occur here it does show that even with the most modern materials designers have to make best use of them. After an impact there are obvious circular striations visible through the resin, but the resin doesn't usually delaminate.

In test-transmitted forces: Top impact 4.2kN, Front 7.4kN, Side 2.5kN, Rear 4.8kN.

Petzl Ecrin Roc

The Ecrin Roc features a 2.2±0.2mm thick injection moulded polycarbonate shell that is supported by a two-strap cradle. The shell has some 3.7±0.2mm deep reinforcing buttresses on the inside of the crown. There is a fully adjustable foam padded headband, and the helmet is supplied with a thicker foam replacement for those with a smaller head. The chinstrap has an adjustable neck strap that helps maintain the helmet in the correct position on the head. The shell/ cradle clearance is approximately 38mm. The shell features four clips to facilitate the fitting of a head torch.

Pros & Cons: The buttresses on the inside of the shell do a very good job of improving the helmets performance, similar shells without them have, in the past, struggled to meet the required standards. The outer shell is very impact resistant when undamaged, but polycarbonate can be very weak if it is already damaged. It is also prone to the effects of solvents so no paint or stickers other than those supplied by the manufacturer should be used. The shell shows no signs of damage after an impact, but the cradle is stretched making further use of the helmet unadvisable.

In test-transmitted forces: Top impact 4.4kN, Front 7.1kN, Side 2.7kN, Rear 1.4kN.

Camp High Star/ Rock Star

These two helmets are essentially the same, with the more expensive High Star having greater comfort levels. They have an injection moulded high-density polyethylene (HDPE) shell of thickness 3.6±0.5mm. Unlike the other helmets with cradles, these have an injection moulded polymeric cradle featuring three straps and a reinforced crown at the junction. The headband adjusts similar to a tie-wrap, and so is easy to make smaller but can be difficult to enlarge. There is an adjustable chinstrap, with a curved buckle. In the crown of the helmet is an energy-absorbing piece of expanded polystyrene foam, with a thickness of approximately 21mm at its thickest point.

The Rock Star has a 6.0±0.1mm thick piece of soft foam between the cradle and the wearer's head, a thinner foam is also used to pad the headband. There is also a small piece of 5±0.1mm thick closed cell foam covering a rivet at the rear of the shell. The **High Star** features the same foam comfort pads as the Rock Star, but they have a different face textile and the whole cradle assembly is covered. The closed cell foam on the inside shell covers almost the whole rim of the helmet to a depth of 40mm. This covers all the cradle and chinstrap mounting points. This helmet also features an elasticated head torch holder at the front and a strap/press-stud cable retainer at the rear. There is no clearance between the cradle and the foam insert.

Neil Morris on his new route "The Laughing Russian" at Rhoscolyn, at a recent BMC youth meet. Credit: John Arran

Pros & Cons: Previous research in the field of Industrial helmets has shown that shell/cradle helmets can receive a boost in their performance by the inclusion of foam inserts which is the case with these helmets. The inclusion of the press-stud at the rear of the High Star helmet probably explains why its rear impact result is higher than the Rock Star. After an impact the shell returns to its original shape, but in coloured shells there are obvious strain marks in the colouring, unfortunately these are hard to see on white-shelled helmets. The foam insert will however be seriously compromised and the helmet should be discarded.

In test-transmitted forces (Rock Star): Top impact 7.2kN, Front 2.7kN, Side 2.8kN, Rear 2.9kN.

In test-transmitted forces (High Star): Top impact 7.1kN, Front 2.4kN, Side 3.2kN, Rear 5.6kN.

Edelrid Ultralight

The construction of this is similar to the Camp Rock Star. The shell is made from 2.7±0.2mm thick injection moulded polyolefin (this is probably polypropylene but could be polyethylene we were unable to determine exactly which). There is an expanded polystyrene energy absorbing crown insert of approximately 18mm thickness. The cradle has three straps and the plastic, adjustable, headband has a synthetic fabric comfort lining. The adjustable chinstrap has a flat buckle. On the inside of the shell, at the front there is a 40mm square piece of hard, closed cell foam, which is 11.0±0.1mm thick. The helmet features four small metal hooks to help mount a head torch. The shell/cradle clearance is approximately 26mm to the foam insert.

Pros & Cons: For general points see the Camp Rock/High Star. This helmet offers more protection than those, but is also reliant on the foam insert The helmet can withstand several impacts, but this is true but only if the foam insert remains in place. It would seem that the function of the foam pad at the front of the shell is to reduce the force of the front impact. The shell does show striations after impact, even though it returns to its original form.

In test-transmitted forces: Top impact 5.5kN, Front 3.1kN, Side 2.4kN, Rear 3.5kN.

Hard shell, foam style

An impact resistant outer shell contains a foam liner for shock absorption, without the foam liner these helmets would be useless. In most cases the liner only offers protection from impacts on the crown. During an impact the outer shell deforms and the foam liner is pushed into contact with the head, the foam is thus crushed from both sides. If the liner is deformed too much then the impact force will be passed directly to the skull.

Camp StarTech (post May 2000)

A 2.0±0.2mm thick vacuum formed polycarbonate shell which prevents penetration and protects a 24±2mm thick expanded polystyrene foam energy absorbing liner which covers the inside crown of the helmet shell. There is an 8.5±0.1mm very soft foam comfort panel that is purely for the wearer's comfort and contributes very little to the helmets performance. There is an adjustable, padded

headband, where the adjustment is via a very convenient twisting adjuster allowing quick changes of the helmet. The chinstrap also features an easy to adjust buckle with a quick release button. The shell features four clips to facilitate the fitting of a head torch.

Pros & Cons: The outer shell is very impact resistant when undamaged, but polycarbonate can be very weak if it is already damaged. It is also prone to the effects of solvents so no paint or stickers other than those supplied by the manufacturer should be used. The foam liner is good at absorbing impacts, and without it the helmet would be useless. This liner only offers protection from impacts on the crown and the only protection from off-centre impacts comes from 0.7±0.1mm thick soft foam panels around the rim of the helmet. After an impact the shell returns to its original shape and shows no obvious signs of damage. The foam liner may show some cracking, but not in all cases, it will however be seriously compromised and must not continue to be used.

In test-transmitted forces: Top impact 9.3kN, Front 3.1kN, Side 4.0kN, Rear 2.2kN.

Black Diamond Half Dome

The shell is 3±0.3mm thick injection moulded ABS; the liner thickness varies from approximately 20mm at the crown to 8mm at the front and 10mm at the rear. There is a two-strap cradle with a shell / cradle clearance of 7mm. The padded headband is adjusted via a leather strap with Velcro. There are four clips on the helmet to take the straps of a head torch.

The Black Diamond Half Dome. Note how no sign of damage is visible

Pros & Cons: The tests results from Leeds show a relatively high level of transmitted force in the top impact test. Because the initial certification tests at notified body CRITT show a very low level of transmitted force this helmet has been subjected to additional examination. A further test at Leeds using the same method and batch as the original test has confirmed the 12.7kN result. As stated in part 1 the original tests were conducted to give a comparison between helmets and did not intend to test exactly against the standard. Because of the variance of Leeds and CRITT results further tests have also been carried out to ascertain whether the helmet meets the standard. At the time of writing tests at Leeds have shown that depending on the exact method used and the batch tested it is possible to get results down to 9.3kN and possibly below, although most are still above 10kN. Because of the variation in test method and batch characteristics already noted this does not tell us whether the helmet passes the standard, but it does suggest that the helmet is on the threshold. The manufacturer is of course concerned by these results and by the time you read this, representatives of the manufacturer, the BMC, Leeds and CRITT will have met to examine the test results and re-test the helmet under the original certification conditions. This should finally resolve the issue. The manufacturer is committed to providing a helmet that meets the standard and will take whatever steps necessary to ensure this. The result of these test will be posted on the BMC website.

As far as the basic design is concerned - the helmet is designed to give a low, comfortable fit and in this respect it succeeds well, although some find the chinstrap uncomfortable. The ABS shell may be prone to degradation by chemical attack due to solvents and so stickers / paint should not be applied unless supplied by the manufacturer.

In test-transmitted forces: Top impact 12.7kN, Front 5.3kN, Side 3.3kN, Rear 4.9kN.

Thick foam style

The foam shell deforms under impact, the amount of deformation depends on the size and shape of the impacting mass. It seems as though the more the mass penetrates the shell, the better the energy absorption (this means that for a given weight the thinner the impacting mass the better the energy absorption), but at present the limits of this are not known. We do know that a pointed mass impacting the shell penetrates nearly all the way through, and if the headform used in testing was soft then this type of shell may actually fail the penetration test.

Petzl Meteor

This helmet features an expanded polystyrene foam shell which at the rim varies in thickness from 21±1mm to 27±1mm, this increases to 33mm at the crown. A 0.8±0.1mm thick polycarbonate shell protects this foam. There are three 38±2mm diameter, 4.1±0.2mm thick soft foam comfort panels, which serve little purpose during an impact. Adjustment is via three screw-in soft foam columns of 40.5±0.1mm diameter and 14.0±0.2mm long, which compress very quickly under impact and serve little purpose in an impact. They do, however, when used correctly, allow good ventilation of the top of the head. There is no headband. The chinstrap is easy to adjust and quick release.

A cut away of the Petzel Meteor following a penetration test.

Pros & Cons: The lightest helmet on test. The polycarbonate outer layer is very thin and is only present for cosmetic reasons, it is so thin that it offers virtually no resistance to penetration. After an impact the foam is permanently deformed, and the helmet should be discarded as soon as possible.

In test-transmitted forces: Top impact 9.2kN, Front 4.7kN, Side 4.7kN, Rear 3.7kN.

Grivel The Cap

Another expanded polystyrene foam shell, this time varying in thickness from 20 to 31±1mm, protected by a 0.8±0.1mm thick polycarbonate shell. At the crown of the helmet there are three parallel ventilation slots, which are covered by a 3mm thick rigid plastic panel. This panel is 148mm long and 64mm wide at its widest point. On the versions tested the headband and chinstrap were identical to those on the Camp StarTech, but this year's have a different chinstrap buckle to prevent accidental opening whilst looking over ones shoulder.

Pros & Cons: As with all thick foam helmets, the polycarbonate layer is just for cosmetic reasons. The rigid plastic panel at the crown has the effect of preventing sharp objects piercing the shell, but only for impacts in the small area it covers. Outside this area sharp objects will pierce the foam just as with any other foam helmet. One undesirable effect of the rigid plastic is that after an impact on the crown, the foam is deformed, but the plastic panel elastically recovers, so the shell reverts to its original shape and the helmet appears undamaged.

In test-transmitted forces: Top impact 9.8kN, Front 1.1kN, Side 5.0kN, Rear 1.4kN.

Cassin Mercury

The final thick foam helmet considered in the current study. The foam varies in thickness from 42±1mm at the front to 18±1mm at the rear. The polycarbonate shell is 0.5±0.1mm thick. There is a headband with an easy to adjust zip style fastener and an adjustable chinstrap, which features removable ear protectors. The inside shell of the helmet is covered with a removable 3mm thick fabric covered foam insert that serves to improve the comfort of the helmet. The helmet design is heavily influenced by cycle helmets as is shown by the large front and rear air vents for forced air circulation.

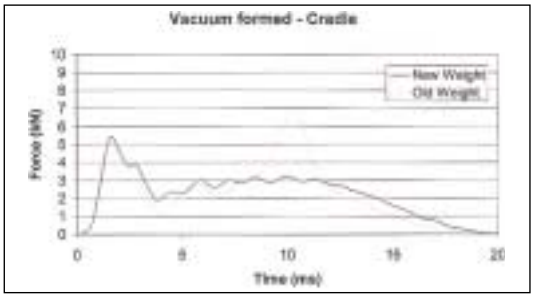
The Cassin Mercury showing obvious post impact damage.

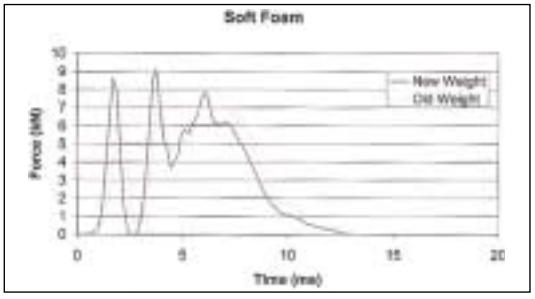
Pros & Cons – see Petzl Meteor.

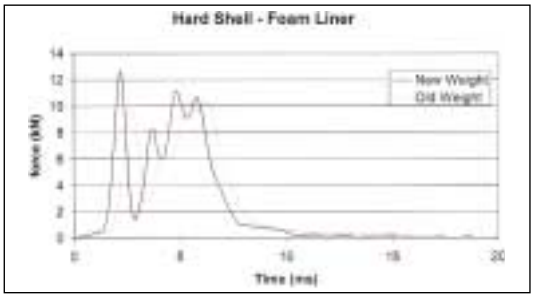
In test-transmitted forces: Top impact 10.4kN, Front 3.9kN, Side 4.8kN, Rear 3.8kN.

The Force/Time curves:

What happens during an impact







Shell/Cradle Helmet

The force time curves for this type of helmet indicate what is happening during an impact. First the cradle settles and the slack is taken out over the skull, resulting in a sudden increase in transmitted force (the initial peak on the chart). The shell then begins to deform and the cradle to stretch, which providing the two do not meet results in a plateau on the force/time curve, which then tails off to zero. If the cradle and shell meet, then a bump will occur on this plateau, the severity of which depends on the duration and intensity of the contact; this is the usual failure mechanism of this style of helmet.

Hard Shell/Foam Lined & Thick Foam Helmets

The force/time curve characteristics of these types of helmet is not yet fully understood, and is the subject of ongoing high speed video and deceleration studies. Careful inspection of the curves for these two types of helmet reveals that they are very similar in shape. They both feature a large peak that occurs immediately upon impact that is followed by a sudden drop off in transmitted force. This is most likely due to something "collapsing" in the helmet, similar to the cradle settling described above. What then follows is the result of the impacting mass penetrating the foam layer (pushing the deforming hard shell into the foam in the case of the hard shell/foam helmets).

The change in drop test weight

The switch from the smaller diameter (90mm) 1996 standard drop test weight (which has been in use since the very first UIAA standard was introduced) to the 2000 (100mm diameter) drop weight had an unexpected result. As can be seen from the generic force/time curves shown, helmets that rely upon foam as the major energy absorbing mechanism transfer more force with the new weight (blue line). We believe this is because the wider weight does not penetrate the foam as far as the old one (dotted red line). For the same reason the wider weight benefits more traditionally styled helmets, as the weight can no longer deform the shell as much and no contact occurs between the cradle and the head.

BMC Member Survey

Many thanks to the 8124 members who took the time to complete and return the 2000 Member Survey. The total number of surveys returned is almost four times that achieved in the previous Member Survey that was first distributed 1996. The increase in distribution of Summit to club members helped achieve significant response from the club base of the BMC. Over one third of those surveyed were members of BMC clubs.

Climbing

Summer mountain walking is the most popular activity undertaken by all members of the BMC with 97% of members participating. However, it is worth noting that many of these mountain walkers are climbers as well. Unlike to profile of climbers often portrayed in magazines, it is reassuring for the majority that 82% of members climb at grades no harder than HVS. There has been a growing use of artificial climbing walls with over 80% of climbers having used a wall and 33% using a wall on a weekly basis.

Walking

Over 16% of members do not participate in any climbing activity. This figure is double the 8% figure in the previous member survey with the results indicating that the BMC is attracting a growing number of members whose main interest is hill walking rather than climbing.

Other Activities

It is also clear that members cannot be clearly categorised by one outdoor activity. Members like to hop on their mountain bikes (41%), go running (40%), get out their camera (40%), ski (31%) or jump in a canoe (21%). All this activity is allied to a need to travel with 88% of members travelling overseas to undertake their activities.

Figures to Talk About

In terms of being kitted out to undertake their outdoor activities those receiving Summit spent over £19 million on outdoor gear in the last year with all BMC members spending over £23 million. Summit is seen as a great resource and is kept by 63% of members. It is quite apparent members are willing to show their copy of Summit around with the 40,000 copies having an actual readership of over 81,000 individuals.

Come and Join Us

Among the many varied reasons members have for joining the BMC, the most popular were: supporting access and conservation work, supporting the National Body / representation of views, advice and information, insurance (both travel and membership insurance) and MLA/SPA registration.

The internet has made the ability to join, access information or make use of services even easier. Over 64% of members who have web access have visited the BMC website. In terms of new services 53% would consider private medical cover and over 80% said they would be interested in a BMC course.

Encouraging Future

A final thanks to all the members who made the effort to respond to the open question at the end of the survey. The thousands of responses received will help the BMC make developments in key areas including access and conservation, Summit, insurance, training, and the website.It is also encouraging to look to the future and build on a base of 55% of members who are willing to support some form of voluntary work to the benefit of all climbers, hill walkers and mountaineers.

Web Discussion Boards

Visitors to the BMC's site will no doubt have noticed quite a face lift over the last few months and many thanks to those who have commented as the site has evolved. The new access database is certainly proving popular and congratulations to all the access volunteers whose contributions made it possible.

The developing online shop has already caused much debate (see Forum) but this is only one of the new features. A major new area is the discussion boards. Now it's even easier to comment on the BMC's work, topics of local area interest, or simply to find a climbing partner. As they evolve, these boards should prove to be a very useful resource.

Take a look at **www.thebmc.co.uk** to find out more. We are always interested in feedback on the site, so if you have any comments or suggestions, then just use the online comments form.

Access Support Sought

The Government is currently setting up new Local Countryside Access Forums all over England and Wales. In some regions the BMC is seeking extra support to represent mountaineers views on Forums. Please contact Dave Turnbull at the BMC if you are interested in getting involved.

Area Meetings Calendar

	LAKE DISTRICT	NORTH WEST	LONDON & SE	MIDLANDS	NORTH EAST	PEAK DISTRICT	SW & SOUTHERN	WALES	YORKSHIRE & HUMBER
Nov	Fri 24th **AGM** 20.00 Coniston Rule, Ambleside	Mon 27th 19.30pm BMC Office Manchester **(AGM)**		Thurs 23rd 19.30pm The Rookery Birmingham **(and AGM)**	Mon 13th 20.00 7 Stars, nr Durham **(and AGM)**	Thurs 25th 19.15 The Anchor Totswell Crossroads	Sat 11th 19.00 Tiverton Hotel, (just off M5)	Sat 25th 6pm – (and **AGM**) Plas y Brenin	Mon 20th 19.00 Leeds Wall, Gelderd Rd. (and **AGM**)
Dec			Tues 5th **AGM** 19.30pm Francis House Francis St London						
Jan	Friday 26th 8.00pm Golden Rule Ambleside	Monday 29th 7.30pm BMC Office Manchester		Thursday 25th 7.00pm Fairbridge Birmingham	Monday 22nd 8.00pm 7 Stars Shincliffe Nr. Durham	Thursday 25th 20.00pm The Anchor Totswell Crossroads		Saturday 27th 6.00pm Plas Y Brenin	Monday 22nd 7.00pm Leeds Wall Gelderd Road
Feb			Tuesday 6th 7.00pm Francis House Francis St London				Saturday 3rd To be confirmed		
Mar	Friday 23rd 8.00pm Golden Rule Ambleside	Monday 26th 7.30pm BMC Office Manchester		Thursday 22nd 7.00pm Walsall Cricket Club Walsall	Monday 26th 8.00pm 7 Stars Shincliffe Nr. Durham	Thursday 22nd 8.00pm The Anchor Totswell Crossroads	Saturday 17th To be confirmed	Saturday 24th 6.00pm Welsh International Climbing Centre	Monday 19th 7.00pm Leeds Wall Gelderd Road

TRADING PLACES

Potentially dramatic steps are being made towards reforming the way the BMC works. While consultation on the political make up of the BMC continues, the Management Committee has given approval for a move in partnership with other bodies towards the creation of a new services and trading entity.

The new entity would be controlled by and only provide services for the national mountaineering bodies and, while discussions with other bodies continue, to date the MLTB and the Mountaineering Council of Scotland have indicated strong interest. The proposed changes are similar to modernisation very successfully undertaken by other sport and voluntary bodies. The move offers strong potential for increasing services to members and thereby increased resources to support the BMC's specialist work programmes like access and conservation. The re-organisation would also allow greater focus for the specialist programmes, some of which could at last gain beneficial charitable status. Many will think that a more commercially based trading entity is a dramatic step, so why and why now?

Why?

Firstly, the BMC is currently in a relatively strong position and able to contemplate and enact beneficial changes for the future.

Just to put things in context a few numbers (from the 1999 annual report) may be useful:

Total cost of BMC's programmes	**£648.7K**
Contribution from Grants	**£186.5K**

The gap between the two is large and is getting larger

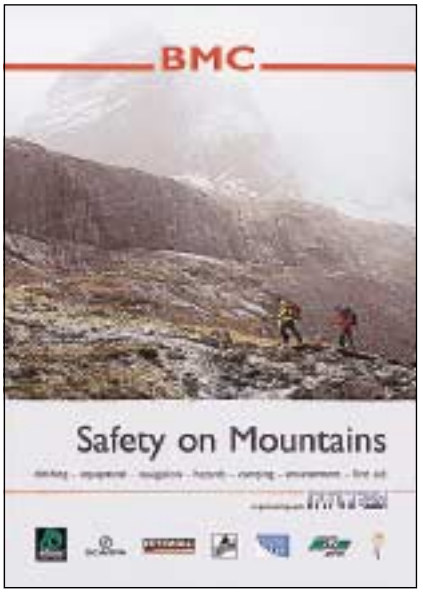
And surprisingly it is the programme most valued by BMC members (access and conservation) that gets (relatively) least support from Grants.

Access costs 1999	**£108K**
Grants from Sports Council	**£10K**
Sponsors	**£12.5K**
Contribution from membership and trading activities	**£85.5K**

As these figures hopefully show, trading income is essential to the BMC's operation. We have all enjoyed and benefited from the BMC's increased ability to (for instance) lobby effectively and make a real difference to access legislation or to undertake proper scientific testing of equipment. Such success doesn't come cheap and it is surely one of the BMC's jobs to make sure that it is generating the income necessary to support the work that the members want to see done.

Secondly, financial forecasts show that as the cost of specialist programmes and representation goes up, and the relative contribution from the Sports Council goes down, a worrying gap appears between income and expenditure (see box below). In the past the BMC had only two ways of reacting to such a situation – it could either raise subscriptions or do less work.

Neither option is particularly desirable but a third choice now exists - that of expanding and improving trading activities. Also, with the support of the other mountaineering councils and mountain training boards a previously un-dreamt level of mutually beneficial co-ordination and co-operation becomes a real possibility through a genuine one-stop shop operation for all registration, membership, services and trading.



Safety on Mountains - Just one of many BMC publication to support all areas of BMC work

How?

Having agreed the broad principle, detailed work is now underway to quantify the scale and feasibility of the proposed new trading entity. This issue of Summit gives members the opportunity to contribute to this process. It has been suggested that the new entity, if it is to be created, operates to the following principle:

Climbers, hill walkers and mountaineers require a range of products and services in order to enjoy their activities. Either directly or in partnership with existing providers, the national bodies for mountaineering should be in a position to supply such products and services, so that the quality and value for money of the services is assured and a proportion of the spend is invested in specialist programmes that promote the interests of climbers, hill walkers and mountaineers.

The above is basically what happens now with the BMC's travel insurance operation, i.e. a quality and competitive service is provided and all the surplus is invested in specialist programmes such as access and conservation. But how far should the BMC go to develop other trading activities? To this author at least it seems obvious that it would be counter productive, as

one example, for the BMC to try and set up as an alternative retailer or to offer courses directly in competition with established providers. This approach is supported by the debate highlighted opposite. But the prospect of offering new services whilst working in partnership with existing providers opens up a wealth of possibilities which could well bring about a dramatically increased set of members benefits.

Your views

So what's your view, what would you like to see the BMC doing? If the following two wildly contrasting views (aired in the press recently) are anything to go by it could be an interesting debate.

Rachel Burns
From - ClimbUK discussion board

"If the BMC sells me some stuff and then uses the money for access or whatever then good on them, rather that than supporting some venture capital fat cat's cigar habit. Also it's surely no coincidence that since the BMC started doing insurance the competition was forced to offer decent packages and stop ripping us off – maybe it would be no bad thing if that happened in a few more areas."

Steve Harrison
From - High October 2000

"It should be written into the (BMC's) policy that if a service is or can be provided by an individual or a company then the BMC should not get commercially involved…..The problem is that once the BMC has a commercial interest in an area it is possible for that commercial interest to take precedence over the interests of individual members."

A debate in progress: The web shop

A couple of months ago an apparently innocent little icon entitled 'BMC shop' appeared on the new look website. The online shop was intended to help the BMC sell its guide books, videos and other publications. However its advent, suggesting that the BMC was perhaps planning to sell a broader range of equipment, has resulted in a thoroughly timely debate.

Adrian Berry (climber):

"So the BMC is going to set up a shop - selling its own guidebooks seems like a great idea, but where will it end, surely it's only a matter of time before it starts to sell hardware? Where are the dangers in this?

Well, firstly, it is an abuse of position for a political body to interfere with commercial services that are not inherently necessary for it to fulfil its primary role as a representative body.

Secondly, having a vested interest in a decision inevitably affects that decision, so it would be improper for a body which is relied upon to impartially test equipment to be profiting from its sale. Who decides which product lines are going to be sold?

Thirdly, whilst this venture is almost certainly going to make money for the BMC, the BMC 'brand' has been built from state grants and our cash. Using this investment to move into retail is unfair competition, and if I were involved in the outdoor retail industry I would definitely be concerned."

Rob Naylor
(Tunbridge Wells MC):

"The opening of the BMC on-line "store" has certainly generated a lot of debate in discussion forums on the web. Whether the store is a "good thing" or not, depends on what it offers for sale. Guidebooks, insurance, information leaflets, BMC T-shirts etc are all fine as far as I'm concerned. However, retailing of climbing hardware, ropes and the like would, in my opinion, be a conflict of interest. The BMC is supposed to represent the interests of climbers, hillwalkers and mountaineers. If it moves into general outdoor retailing then its impartiality would be in danger of being lost in the drive for commercial success. Is it really appropriate for a body which is involved in the analysis of product failure, gear testing and political lobbying to become involved in the sale of said products?"

BMC trading activities help to support Access work in popular areas such as Snowdonia

Stuart Miller
(Guide and shop owner):

"I see this (shop) venture as a totally different thing from selling insurance. At the time the BMC started selling insurance it was because there were no suitable policies which catered specifically for the needs of climbers and mountaineers, and it was a service that was needed. The fact that this service then made money for the BMC was/is very useful but no conflict of interest really arose and members received a useful service.

As many shops already exist selling a vast array of equipment what possible advantage to BMC members would the BMC offer? I do not believe it is a service that is lacking or that members are particularly looking for. As a great many Retail shop owners are individual members you are producing a service which could be in direct competition with those same members, creating a somewhat bizarre conflict of interest!!"

Final thoughts

These opinions support the view stated initially that it would be counter productive for the BMC to try to act as a retailer by buying, holding and selling equipment and clothing. Another important point raised is that of potential conflicts of interest and the suggestion that efforts on the trading side could detract from the BMC's representative work, which is after all why the BMC exists. This supports the concept of separating commercial activity from the BMC's core work, thus allowing the BMC to focus effectively on its work whilst avoiding conflicts of interest. Having said this the trading body would be directly accountable to the membership of the BMC via the nominated directors. This is very similar to the way the BMC, MLTB and UKMTB have ultimate control over the Mountain Training Trust and Mountain Training Ltd and the running of Plas y Brenin.

Troll BICC'01

The dates and venues for the Troll BICC'01 are now confirmed. The Troll BICC'01 is supported by UK Sport, Entre Prises(UK) and GreenShires. New features for this year's Troll BICC include half time entertainment in the shape of bouldering or dyno competitions and a fun pull up competition. Some venues may also have a slide show. A raffle with excellent prizes will also be held at each event with proceeds going to the BMC Access Fund/ BCCT. Further details will be available from the venues, the BMC website (www.thebmc.co.uk) or from Graeme Alderson at the BMC (graeme@thebmc.co.uk).

TROLL BICC 2001	
Sat 3rd February	Awesome Walls, Liverpool
Sat 17th February	Welsh International Climbing Centre, Treharris
Sat 3rd March	Undercover Rock, Bristol
Sat 17th March	The Foundry, Sheffield
Sat 31st March	The Leeds Wall

S7 British Bouldering Championships

The S7 British Bouldering Championships 2001 will be taking place at Rock City Hull on Saturday 24th March 2001. Further details will be available from Rock City, the BMC website (www.thebmc.co.uk) or from Graeme Alderson at the BMC (graeme@thebmc.co.uk).

MLTB Events for Award Holders

Bookings for next year's events are now being taken:

Single Pitch Award Holders Seminar
19th May at Thornbridge, Peak District & 29th Sept at Plas y Brenin

Mountain Leader Award Holders Seminar
7th Jul at Lane Head, Coniston & 13th Oct at Plas y Brenin

Mountain Assessor Workshops
Weekend workshops are run in conjunction with Plas y Brenin.
10th - 11th May at Plas y Brenin, 9th - 10th Jun at Thornbridge Centre, Peak District, 6th – 7th Oct at Plas y Brenin & 17th – 18th Nov at Plas y Brenin

Teaching and Coaching in the Mountains
Weekend workshops are run in conjunction with Plas y Brenin. 17th – 18th Mar at Plas y Brenin & 3rd – 4th Nov at Plas y Brenin
For booking forms and further information about these events please ring the MLTB on 01690 720 314

Adele Pennington (above) will be talking about her highly successful Quimsa Cruz expedition at Kendal. Credit: Sarah Nuttall

Expeditions at Kendal

The BMC and MEF will be celebrating the year's mountaineering expeditions at the Kendal Film Festival (1st - 3rd December). In a special two hour slot, four of the trips featured on pages 26 & 27 will be telling their contrasting stories. Speakers will include Ian Parnell describing his major new route on Mount Hunter, as well as his bittersweet success on the Thumbnail, Adele Pennington on the Quimsa Cruz and Alun Powell on the Arwa Tower. For further information about the film festival see **www.mountainfilm.co.uk**

Guidebook Open Meeting

The annual BMC guidebooks open meeting will take place on 6th December at 7:30pm in the Northwick Arms, Ringinglow.

Aguille du Chardonnet at dawn. Credit: Stephen Rice

Mountains & Morphine

A first climb in the Alps

by Stephen Rice

I was trying to get intimate with a small fortune's worth of sleeping bag, struggling to find the perfect position and relax. The problem was not the obstinate chunk of granite that was poking me in the hip, but the silhouette of the Aiguille du Chardonnet that was poking me in the eye, willing me to take one last look, challenging me to sleep.

From my vantage point above the Albert Premier hut, the mountain's northern flank shone under a full moon, the prickly Forbes **Arete** rising gently to the summit from the east. Tomorrow we aimed to follow the classic route up the Bosse, a distinctive dome of snow and ice to the east of the north face, and wind our way around and over the gendarmerie of the arete to the top.

Fitful sleep was relieved by a bleeping wristwatch and the porcine grunts of my companions. Darrel, Crill and Joe have close to forty seasons' experience on the mountains around Chamonix. In contrast, this was my first mountaineering trip to the Alps and I was more than a little nervous. Afraid of failure, of embarrassment, and, oh yes, of accelerating down one of those glassy slopes to be ground up by the granite below and delivered into an eager crevasse like a packet of Goretex-wrapped mince. Preparation had been less than perfect, involving little more than some brisk walks over the precipitous ranges of north west Leicestershire. While I waited for typing to improve my finger strength, Darrel was hanging off the back of his staircase doing one arm pull-ups. At least I was in good hands. I was also desperately excited. To many our route is a standard affair; but for me this represented a long-awaited step in my climbing career.

"crevasses grinning up at me"

Before dawn we found the normal route up to the Bosse blocked by a fan of chaotic serac debris and were forced onto a steeper route to the left. Progress was slow on brittle ice, but moving aside, we found good névé and reached the snow **arete** that descends like the bridge of a patrician nose thrusting out from a balding brow. This was my first taste of alpine exposure and, with blue crevasses grinning up at me in expectation, Darrel cheerfully delivered his monologue on the futility of self-arrest on steep terrain.

A plod up the smooth pate of the Bosse brought us to the ridge. We scrambled along it on a short rope, accompanied by two ink-black choughs that played in the eddies rising off the north face. At one point, as I edged precariously in my crampons and reached around a blind corner for a hold, they came level with me. How ill-equipped they made me feel. Scratching around at full stretch and doubting the security of my remaining, mushy placement, I longed for a pair of wings to get me down. Of course, the big, rough flake was there, the mush stayed put, and we were soon moving again; the fear of such moments juxtaposed with the liberating rush of having my fate firmly in my own hands and the simple pleasures of steady climbing with good friends on a sunny day.

"my first 'real' mountain"

Sitting on the summit was a new experience - my first 'real' mountain. I revelled in the glorious position and was pleased that I had not let Joe down, although I did drop half of his Mars bar down the north face (it was the only thing not clipped to me).

Our descent toward the Col Adams Reilly immediately involved a short traverse across a narrow fin of icy snow. To my right, a steep couloir fell away to the cliffs of the north west face and the Glacier du Tour 600m below. Half way across a set of footprints confidently marched out of the couloir. Footprints! Someone had climbed up this slope! These were safe, competent, apparently nonchalant tracks that strode off ahead of me not even stopping for a breather. One day, perhaps?

"complex mix of beauty and terror"

The descent was spectacular, with two bergschrund crossings on collapsed snow bridges to maintain adrenaline and we were soon back at the bivvy sizzling under the sun and enjoying a brew. For me, the neophyte alpinist, the day had been a complex mix of beauty and terror, of excitement and achievement, and of vivid new experiences that opened new doors.

"So what about that morphine?"

Where is the tale of pain and gore, the Simpsonesque epic of splintered bone and ripped flesh? Well, truth is, there was no humming rock avalanche, daring helicopter rescue, nor emergency field surgery. The morphine was administered months later when I dragged myself into hospital with a kidney stone tearing its way through my nether regions. The doctor's best guess was that this spiky chunk started life during my trip to the Alps. Contrary to numerous old wives tales, a single episode of dehydration and a genetic propensity is all that it takes. Avoidance in the future is simple — drink lots, maybe I'll try that stuff that gives you wings.