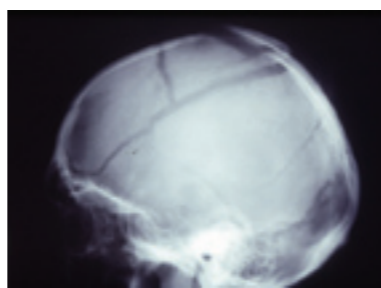


Ben Bransby pumped, gripped, and about to take a big lob on The Nose (E8 6c), Isle of Eigg. Photo: Adam Long.



Head Case

You've only got one head, so use it before you lose it.
By Jon Garside.



A friend of mine took a leader fall at lower Pen Trwyn, inverting as he fell. Appearing to pivot at his feet, he made a perfect arc as his body swung back and down, stopping abruptly as his head hit the rock with a very loud bang. He's the only person I know who wears a helmet when sport climbing, and on that day it was a good idea.

Helmets have come a long way since those bright orange domes of the sixties, and you no longer have to look like Eddie the Eagle as your head boils in a fibreglass oven. The weight issue has been addressed and so one of the main deterrents for not bothering to wear a helmet has gone. But has this led to any change in our attitudes?

The development of sport climbing at home and abroad, and the growth in climbing walls means that we all fall off more often. Films like Stone Monkey, Hard Grit and Equilibrium paint a picture that for those pushing the limits over the last twenty years, big leader falls are part of the territory. But to whatever extent a leader can prepare for the airborne ride, they're certainly not in control when going down.

Climbers have a healthy attitude to risk and adventure, but there are simple things that must be done in order to stay alive, such as tying on correctly. Some activities, such as abseiling, are associated with more serious or fatal accidents than climbing. And what's interesting about abseiling is that there are systems that can stack things in your favour, such as the use of auto blocs and tying a knot in the end of the rope(s). But some of these can create their own problems, presenting the climber with a dilemma and no clear answer. However, the key is to acknowledge the risks, and then employ appropriate strategies to manage them.

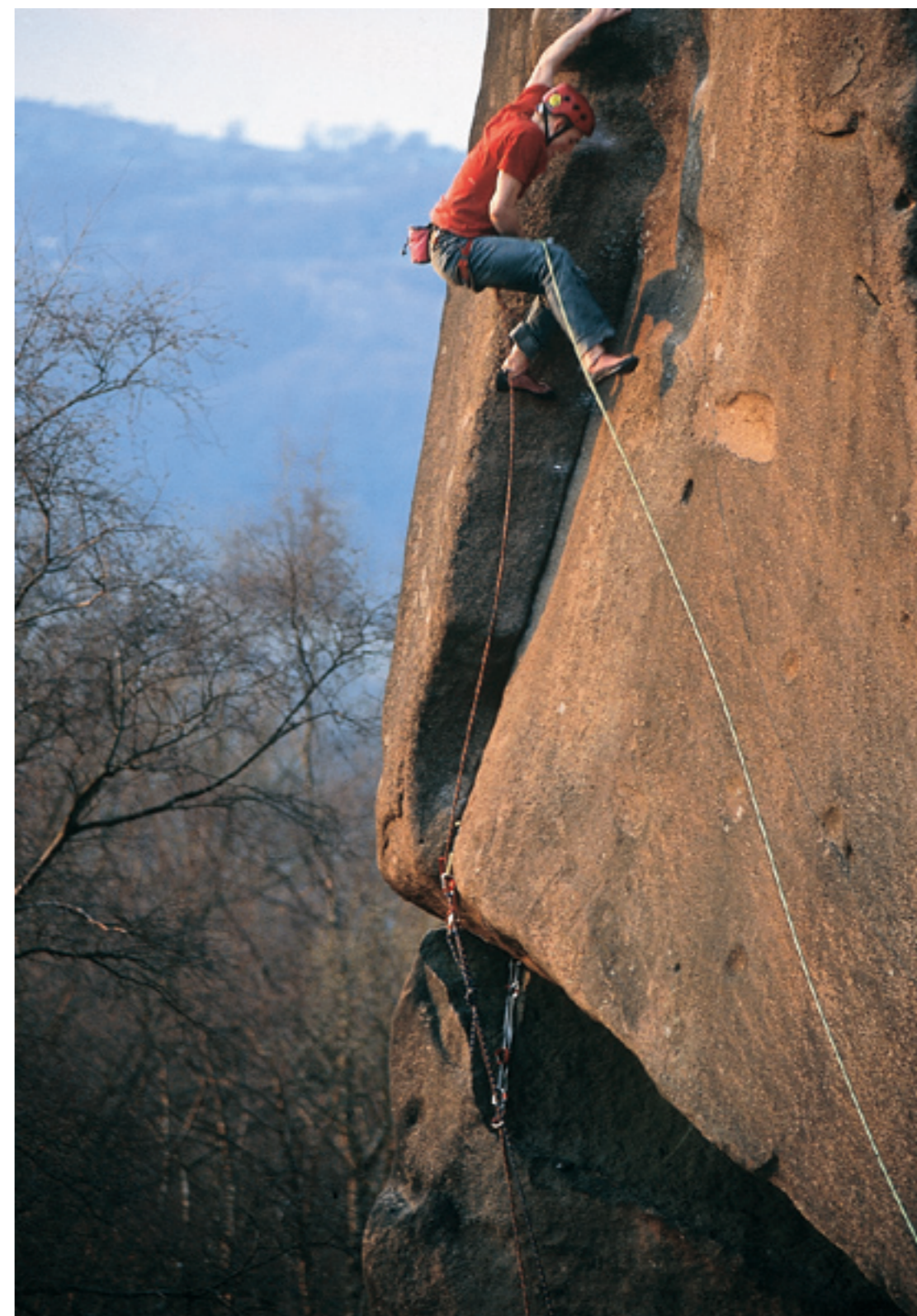
So where do helmets come into all of this? Are the risks and associated consequences clear-cut, or is it a grey area? In one way it could not be clearer - helmets exist to protect our heads from injury. But climbers don't wear them

because they see the risk as either negligible or acceptable. Helmets could be compared to seatbelts - having a car crash is serious, and if you're not wearing a seat belt, it's likely to be more so. Like car crashes, the chances of having a head impact may be low, but it can be completely out of your control.

Voluntary Mountain Rescue Teams pick up the pieces when it all goes wrong. I asked Mike Margeson, the Equipment Officer for the Mountain Rescue Council (MRC) and Team Leader of a Lakeland rescue team, for his thoughts. Mike didn't mince his words: "if you attended any climbing accidents involving a head injury, you would always wear a helmet. Even the lightest weight helmet can make a significant difference to the outcome. This was clearly illustrated when a very lightweight helmet was given to me by The Keswick Team to pass on to the BMC. The owner had taken a lead fall and pendulum but luckily for him, the team were on the scene very quickly and even luckier, the Patterdale Team doctor John Ellerton was taking a walk below the crag. Talking with John later and examining the helmet and the damage to its side, John was in no doubt that it contributed significantly to saving the climber's life."

Looking through the annual MRC statistics at www.mountain.rescue.org.uk it's interesting to note that in 2002 half of all rock climbing (including abseiling and scrambling) incidents that MR Teams attended in England and Wales were attributed to a 'fall or tumble', and about 13% of injury sites were the head.

Climbers almost always wear helmets when winter climbing, to protect their heads from falling ice or rock, but on a sunny day at Stanage there will be many without helmets. Can we assume that climbers believe helmets are most important to protect them from falling objects, as opposed to protecting their head when they fall off? Well, out of 655 mountain and wilderness-related incidents that mountain rescue teams attended in



Above: Jon Roberts, also pumped, gripped, and about to take a big lob on Gaia, (E8 6c), Black Rocks. Photo: Alex Messenger.

Left: Danger! Ben Bransby gears up for an attempt on the terminally loose Luby's Halloween, (E6), Craig Dorys. Photo: Adam Long.



2002, rock fall was the cause of exactly zero. Are we guilty of ignoring the actual risk, and conveniently confusing it with something else?

Rockfall is obviously more likely on a large multi-pitch route than a gritstone crag, but if the main reason for wearing a helmet were for protection against rockfall, then there would be no accidents involving head injuries at Stanage. "It is disappointing to see that the wearing of helmets is sporadic outside winter climbing," says Mike. "This is especially true in single pitch situations where a significant number of accidents have occurred in recent years."

Another activity that has seen an increase in the number of people wearing helmets is cycling, but investigations into the effectiveness of helmets have suffered from lack of control groups, and the reliability of extrapolating the results from small sample sizes onto a larger population.

Australia made the wearing of helmets compulsory in 1990, and experienced a subsequent reduction in the number of cyclists. The fact that cyclists benefit greatly in terms of better health and increased life span, compared to the very low risk of having a serious accident, may lead to the conclusion that making cycle helmets compulsory could have an overall negative effect on a population's health. A study in South Yorkshire of cyclist's deaths over a 15-year period concluded that 14 out of 28 might have been saved if they had worn helmets. Yet the same study also concluded that the lives of 117 pedestrians and motor vehicle occupants might also have been saved if they too had worn helmets. A report in New Zealand concluded that helmets for car occupants would be more effective in reducing serious head injuries than helmets for cyclists.

But despite what surveys may say, common sense would imply that



Jon Garside feeling confident in his helmet on Lord of the Flies, E6 6a, Dinas Cromlech. Photo: Steve Long.

helmets are a good idea, and I for one certainly feel happier if I'm wearing one. By feeling more protected I feel more relaxed when I climb, especially if there is the potential for a big leader fall. That in itself makes me climb in a more confident manner.

Helmets can be annoying to wear; yet the idea of falling and hitting your head hard without wearing one is not a pretty picture, and it's worth considering what could be lost in the future. Dr David Allan, a climber and chairman of the MRC, is very direct on the issue, "Bent helmets are better than bent skulls and infinitely better than bent brains. Brain tissue cannot recover itself or be repaired following significant injury. This is not simply a question of fatality but also that of permanent disability. Any helmet is better than none at all. There is clear evidence from numerous incidents that absence of a helmet has led to an untoward outcome."

This is not to say that we should simply pop on a helmet all the time and consider ourselves invincible - climbing is complex and covers a huge variety of experiences. But as with any other aspect of climbing, we should know the risks and make an informed choice on whether to wear one or not for any particular occasion. Weigh up the factors in your mind and make your own decision each time you go out. You've only got one head, so use it before you lose it! ■

Jon Garside is the BMC/MLTE Training Officer. Cycling helmet statistics sourced from www.lesberries.co.uk/cycling/helmets/effectiveness.pdf.

Keeping Ahead?

Audrey Seguy from London climbs and instructs at the Castle and regularly escapes the city for a whole variety of climbing:



"Helmets can save lives, however that doesn't mean they're necessary all the time. Climbing is a risky sport and as climbers we're used to judging the level and type of risk we expose ourselves to. There are so many factors that I consciously weigh up when I decide whether to take one. I'll wear one on most multi-pitch trad climbs, if I'm belaying a climb with a loose top out, but not always when I'm leading. But the decision is not influenced by what other people are doing. It would be so stupid to seriously injure yourself because you wanted to look cool. So why don't I wear one all the time? Because I just don't think it's necessary all the time. I don't mind taking some risks - it's part of climbing after all. I wouldn't carry extra gear up with me if it's not likely that I'll need it, so why should I take a helmet if I don't think I'll need it?"

Neil Bentley is well known for hard climbing at home and abroad, including the first ascent of Equilibrium (E10 7a), at Burbage, one of the hardest traditional lines around:



"In my first few years climbing I didn't own a helmet and so never wore one when rock climbing. I had, and still have, an attitude that most grit crags are solid and that hopefully no one will drop anything on my head. This habit then spread to sea cliffs, mountain crags and big walls abroad. Then in 2000 I fell off Equilibrium just missing the deck. The consequences should I have tipped over I didn't want to invite again so I wore a helmet the next time. From then on I have used my helmet in various rock climbing situations at home and abroad, although I still don't use it on my local grit crags."

Louisa Wilkinson does a lot of trad climbing, and was a member of the very successful MEF/BMC supported 2004 Southern Greenland expedition: "Recently I've been wearing my helmet

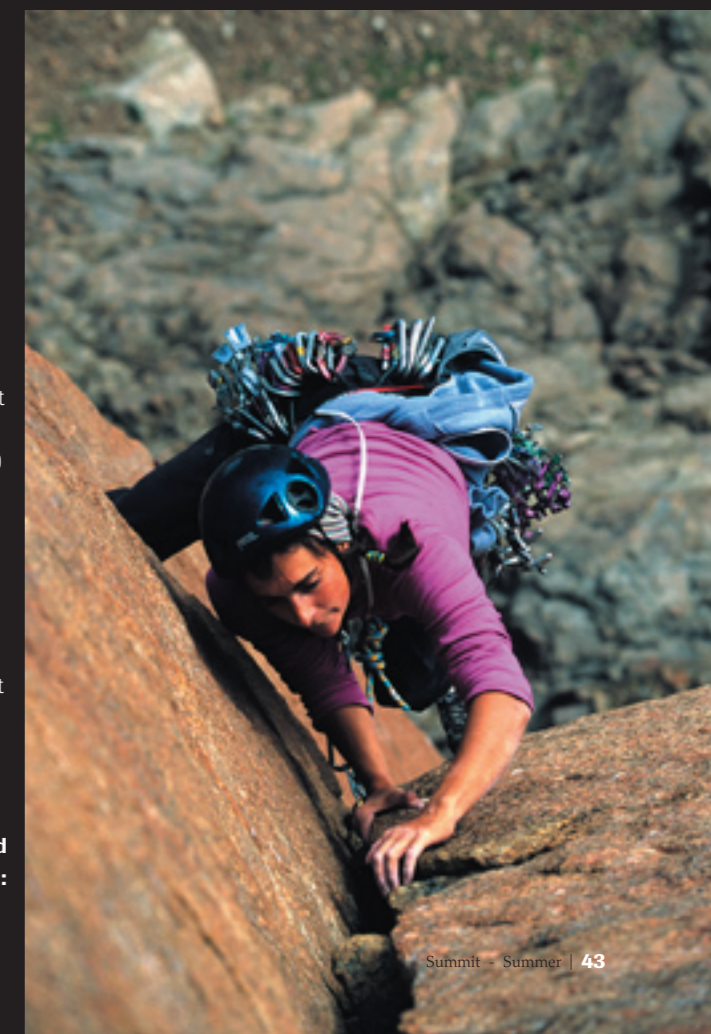
more and more. I used to put one on for harder trad routes, mostly because I'd try anything to boost my confidence! Now I pretty much wear one all the time, even on routes I know I'm going to find straightforward. I've discovered a helmet that's really comfy. I hardly notice that I've got it on, and the longer you climb, the more climbing accidents you hear about. I just think that if there was any rockfall or I fell off, I'd rather have one on than not."

Stuart McAleese was nominated for the Piolet D'Or with Twid Turner and Ollie Saunders. He is equally happy strapped to an alpine face or cragging at home in North Wales:



"I like stacking things in my favour when climbing. So if I'm in the big mountains with a risk of rock or icefall or at a busy local crag when something could be dropped I'll wear my helmet. I haven't always worn my helmet in every climbing situation, but since recent developments have decreased their weight and bulk and increased comfort, it makes it an option. Socially more accepted, light, comfortable - why not?"

Louisa Wilkinson on the Pink Power Tower, Southern Greenland. Helmets are essential in such an expedition environment. Photo: Jude Spancken.



BMC TECHNICAL TIPS

Paul Martin on M4, Rjukan, Norway. Photo: Mathew Farrell.

Picking a helmet

All the evidence shows that in the event of a strike to the head, the wearing of any helmet can greatly reduce the severity of injury. Given this, the single most important criteria when choosing a helmet is that you actually like it and feel comfortable wearing it. What is the point in buying the best performing helmet going if it's uncomfortable and you hate wearing it? As well as finding a comfortable helmet, it's worth understanding the basic differences between the various types of on the market:

Traditional hard shell:

The main energy-absorbing component in these helmets is the textile webbing cradle and the size of the crucial clearance distance between this and the shell. The webbing is anchored to the shell at the rim, which means that the nearer the rim an impact occurs the lower the energy absorption will be. This problem is often compounded as the clearance between the shell and the cradle is usually much less towards the rim of the helmet.

- Good for impact performance on the crown of the helmet (e.g. rock or ice fall).
- Less good for side impacts more common in fall situations.
- Score the best result for resistance to penetration from sharp objects.
- More suitable for alpine or mountain routes. E.g. HB Olympus, Petzl Ecrin Roc.

Thick foam/soft shell:

Energy absorption comes from the thickness of the foam. If the foam is a consistent thickness throughout the design the helmet will be equally effective wherever the impact occurs. Examine the design closely though, because if the foam gets much thinner towards the rim, there will be the same loss of performance in side impacts as with traditional designs.

- Lightweight and with good side impact performance
- Less good in the penetration tests where localised pressures can build up.
- Often more easily damaged through misuse (stuffing into rucksacks)
- More suitable for general rock climbing where there is more concern about falling than rock fall.
- More likely to completely disintegrate in a major impact than traditional designs - not a major problem on a single pitch crag, but a cause for concern if you find yourself with several broken pieces on a big alpine route. E.g. Cassin Astral, Grivel Cap.

Thick foam / hard shell:

A combination of the above two. The foam is concentrated around the crown and either thins out towards the edges or simply stops. Again the foam is the main energy absorber, and where it thins the transmitted force is much greater.

Depending on the exact nature of the design and the distribution and amount of

foam, the performance of these designs may fall closer to one or other of the above types. Eg Petzl Elios, Black Diamond Half Dome.

Top tip

A couple of articles in recent years have suggested the top tip of using the space between the cradle and the shell of a traditional helmet to store spare kit such as your headtorch, spare batteries, ski goggles first aid kit or bivvy bag. However it is precisely this space that gives these types of helmet their performance, and taping anything into them can severely reduce performance. Filling the space with anything solid removes almost all point in wearing the helmet.

Helmet performance results

The current helmet standard dates from when the main concern was being hit by falling rock, and hence focuses heavily on crown impact results. With falling off routes far more common these days, there is now a call from some quarters for the standard to be updated. Unlike krabs, which must be marked with their various axis strengths, helmets are simply required to pass the test, leaving little information for the consumer. Mark Taylor, a researcher at Leeds University and member of the BMC Technical Committee, has carried out a lot of research into helmet design and his results were published in Summit 19 and 20. These articles (along with all back issues of Summit) can be downloaded on the BMC website.