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MOUNTAINEERING TRAINING - AND PREPARATION

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Preface

Many people enjoy being in the outdoors mountaineering and spending time with friends and fellow enthusiasts. It could be a simple weekend trip or a major expedition lasting months. Motives will vary: rest and relaxation, physical and mental well-being, escape from busy work schedules, or achievement of goals. Much has been written about mountaineers all over the world, ranging from success stories of climbing new summits to detailed accounts of peril and tragedy. However, what is not so well documented are the principles, processes, methods, and experiences of training and preparing for mountaineering expeditions. With Mountaineering: Training and Preparation, whether you are a recreational participant or a seasoned mountaineer, you will find much that will interest and inform you on what goes into devising, planning, preparing for, training for, experiencing, and returning from expeditions of any length or complexity.

In this book, the two main areas of focus are undertaking physical and mental training and preparing well so that you have a safe, enjoyable, and successful expedition. Strong emphasis is placed on accepting that even the best-laid plans can fall by the wayside when conditions and events dictate, but it is still possible to predict and prepare for those situations. Throughout the book, but particularly in chapter 3 on extreme preparation, you'll also find advice on training and preparing for pioneering expeditions, which are reserved for only the most serious, committed, and experienced mountaineers, *not* weekend enthusiasts.

You can use the book in various ways. You can read the entire book to cover the full breadth of material in order to prepare and train for mountaineering expeditions, or you can refer to specific chapters that cover aspects that are of particular relevance to you in your preparation or training for expeditions.

Part I of Mountaineering: Training and Preparation contains a wealth of insights on the numerous aspects of planning for expeditions. Chapters focus on selection of teams and equipment, extreme preparation for extreme expeditions, logistics and planning, and first aid. Regardless of the scale of your expeditions, you will have a unique insight into how the experts do it and what lessons you can apply based on their considerable experience.

Part II presents the aspects of physical training required for success in mountaineering: endurance, strength and power, and acclimatisation. Training can be effective only if you are mindful of your nutrition habits and other lifestyle habits such as rest and recovery. Chapters 9 and 10 cover the specifics of nutrition to help you achieve effective outcomes in training and expeditions; those chapters also give consideration to general health and well-being.

Part III covers aspects of psychological skills training and leadership. These skills are essential when preparing for and coping with various situations in extreme environments.

The contributing writers bring a breadth and depth of experience and expertise to this book. Included are some of the very best professionals in mountaineering and sport and exercise science; they have lifetimes of experience participating in, leading, and collecting data from some of the most demanding expeditions to remote locations around the globe. The contributors formed a special partnership on the British Army Everest West Ridge Expedition (EWR) in 2006. All of the authors either were major players in the main expedition team or were part of the group of sport and exercise scientists from Leeds Metropolitan University who provided support in the two and a half years leading up to the expedition, throughout the expedition, and after the team's return from the expedition. This book contains many insights, lessons, stories, and anecdotes from the EWR 2006 expedition as well as from many other ventures of the team members. The details of planning, preparation, and training of mountaineers have never been presented in this way before.

Whether you are new to mountaineering expeditions, a recreational enthusiast, or an experienced campaigner, you should benefit from this book. For those starting to plan their first expeditions the book provides a blueprint for effective training and preparation. The recreational enthusiast will find a wealth of detailed information on specific aspects of training and preparation for mountaineering that they weren't able to access previously. Finally, all serious mountaineers acknowledge the ben-

efits to be gained from sharing the experiences and expertise of other seasoned campaigners. Whether it is in specific aspects of preparation or training, there will be great insight to be gained from the combined experience and expertise of the team of mountaineers and sports scientists who have authored the various specialist chapters of this book to provide a complete guide to preparation and training for mountaineering expeditions.

Acknowledgments

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Carlton Cooke, Dave Bunting, and John O'Hara

Credits

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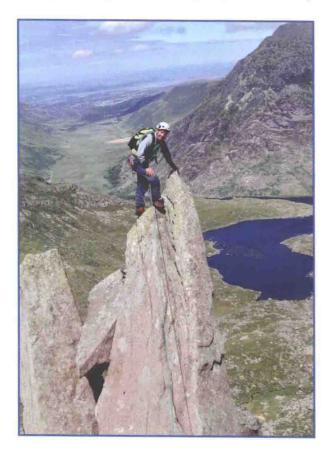
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Introduction: From Derbyshire to Everest

Dave Bunting

The British Isles are a haven for adventure, offering some of the most exciting and challenging mountains available. I was lucky enough to grow up in the Derbyshire countryside, running wild and looking for the most exhilarating challenges to pass my time. I was part of a country family where getting dirty, cold, and wet were the norm for what was a fabulous upbringing, but with three brothers to compete against, nothing came without a good battle. Country life was an awesome adventure, especially with my best mate Leigh, but we both wanted something more and thought it might be exciting to join the Army



Dave Bunting scrambling in North Wales.

Cadets as teenagers. This opened our eyes to a wider world of experiences, including the Duke of Edinburgh award scheme and other exciting ventures around the country and sometimes further afield. Our teenage years became filled with a variety of outdoor challenges, which further exposed me to the excitement of the outdoors.

I became hugely inspired by the hills, and my first real mountain experience came when I was lucky enough to go to Scotland with the Cadets and found myself in the Cairngorms. Although only skiing on piste, the trip allowed me to experience the winter mountains, see how harsh conditions could be, and deal with the intricacies of keeping warm and motivated in this environment. My experiences as a schoolboy remained relatively tame in the grand scale of things, but I had a desire even at that time for experiencing new places and challenges, especially when some excitement and danger were involved.

TAKING EVERY OPPORTUNITY

I know so many people who regret not taking up mountaineering and climbing earlier in life. It's never too late, but if you can start early and grasp every opportunity available to enhance your allround experience, there is a huge amount to do in the outdoors. I was lucky enough to join the Army Cadets, which opened my eyes and led to me joining the army full time, following in the footsteps of both my father and grandfather. I was only 16 when I signed up, and each leave period I would return to Derbyshire and often go walking with my older cousin, Ant. He introduced me to the bigger hills of Derbyshire and taught me how to navigate and prepare myself for the hills, inspiring me to become more involved in the outdoors.

I was well suited to the routine of army life and revelled in the physical training, discipline, and competitiveness required to survive each day. I have many great memories from my training, but a week of leadership training in the mountains of North Wales was my favourite. Focussed on character building and teamwork, the 2 weeks of climbing, canoeing, and hill walking were magnificent, and climbing Moel Siabod was the highlight for me. The steep climb, physical effort, and last 30 minutes in thick mist all added to the adventure.

For a time, another outdoor activity became my passion. Kayaking was my priority, and like the hills, it offered tough challenges and adventure, although I leaned towards the long-distance events, which probably further instilled my love for endurance and long-term commitment over speed and sprinting.

I started to improve my outdoor expertise by doing more walking in my own time. I became more proficient with the techniques required to be in the mountains and took confidence in my performance. Annual adventurous training with my regiment became my next focus. I loved all of the activities from skiing to winter mountaineering, and even though I had spent most of the year kayaking, now climbing and the mountains were beginning to captivate me. Inspired by my friend, Taff Rees, I was encouraged to push myself and realised that I might have found something to which I was really suited. On my first trip to the sea cliffs of Scotland, I realised that I could excel with climbing, and I managed to tick off all of the challenges I was set by Taff. He became a role model for me: capable, knowledgeable, and at the same time inspiring to be around. He also had an air of confidence about him and a fantastic way of encouraging people with his style of leadership. It was during this time that I started to experience the adrenaline buzz and satisfaction from being scared and overcoming that fear, putting myself in the face of danger but being able to handle it.

GAINING EXPERIENCE

I am a believer in taking on things progressively rather than running before you can walk, and following short weekend expeditions as a

schoolboy on the Duke of Edinburgh's Award, I thought it would be sensible to take the next step. The Pennine Way or any of the other U.K. long-distance paths offered a chance to cut my teeth on some of the skills required to undertake longer physical challenges. Dealing with the organisation and day-to-day difficulties on such journeys offered a firm grounding for the bigger expeditions that would follow in the future, from the requirements for planning and training before departure to the way you take care of yourself and adjust your plan each day to the prevailing conditions during the journey. My experience on the 12 days and 435 kilometres (270 miles) of the Pennine Way laid a foundation and gave me the desire to achieve something more demanding.

When you spend enough time in the outdoors, you will thoroughly test yourself, sometimes in situations you didn't mean to get into, and some of these lessons may be painful. On my home turf in 1988, I learned some hard lessons that would help shape my future and teach me to respect how serious accidents can be in the outdoors. My climbing ability and strength far outweighed my technique at that time. Whilst climbing, I took a rest on a poorly placed piece of protection. It popped and I plummeted to the rocks below, landing on my feet and breaking my ankle in two places, as well as damaging various joints. My lesson was a realisation of how difficult it can be to extricate a casualty in the outdoors even from a location relatively close to a road.

Thankfully, this accident did not deter me and in 1989 my climbing really started to take off. Along with my close mate Chris Collett, I ventured to North Wales and also pushed the grades on the limestone outcrops of Europe. These mini-holidays were great for my development and were one of the most memorable times of my life, pushing limits, building trust, and above all just having great fun.

Experience in the outdoors is essential and progression is built on it; however, there is huge value in formalising your knowledge and gaining qualifications to confirm your ability. I had spent time self-teaching, reading books, and then going out to practise. The downside of this approach is that it can end in accidents

and offers you no confirmation of whether you are doing the right thing. I was lucky enough to attend my first structured training courses through the army and headed off to Norway to fill a vacant slot on an alpine mountaineering course. The course provided me with an excellent introduction to the skills that I required to fill the gap between the climbing and mountaineering.

Years later I was posted to instruct in the Joint Service Mountain Training Centre (JSMTC), where I could consolidate my skills, and combined with activity delivery, I was starting to understand the bigger picture. Risk assessment, programme development, and decision making all helped me to become a more rounded outdoorsman. My enthusiasm for climbing led me to being selected to complete a course attached to the German Army Mountain Troops, where after a year of varied and arduous training I became a German Army Mountain Guide.

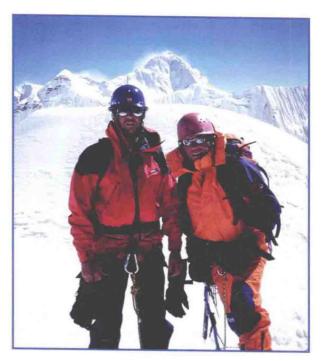
MY FIRST REAL **EXPEDITION**

My course in Norway led to greater opportunity when I was invited to take part in a Himalayan expedition to Pisang Peak. The scary thing about that trip was that because of my technical climbing ability, the leader had chosen me to be the climbing leader, putting me in charge of the technical climbing even though my experience on snow and ice was limited to a little in Scotland and my Norway course. On reflection it was horrendous that I was in charge of this important area of decision making with no experience of altitude. Clueless about acclimatising but a fit hill walker, I set a swift pace and on occasion arrived at our destination well ahead of others, not rehydrating as I should and not setting an appropriately steady pace for acclimatising. Inevitably, as we got to higher altitudes I began to suffer, and on the side of our mountain at around 4,200 metres (13,780 ft) I was feeling terrible.

Once we settled into camp I felt a little better, but by the morning my headache was painful. With no knowledge and only foolish determination, I elected to head up with everyone else.

I plodded on, playing down how bad I really felt, and by the time we reached our next camp at over 5,000 metres (16,405 ft), I was unable to hide my discomfort. We did not know that I should have gone back down immediately, and it turned out to be the worst night of my life as severe acute mountain sickness (AMS) kicked in: Nausea, vomiting, rejection of any food or drink, diarrhoea, and my continuing headaches collapsed my confidence and made for a debilitating night. My tent partners were brilliant but with the ensuing heavy storm, frequent trips outside to be sick and go to the toilet in a whiteout couldn't be shared with anyone and I felt very lonely.

The next morning it was clear I had to go down, and my trusted friend Chris volunteered to accompany me even though he could have continued upwards. His completely unselfish approach to it all was simply superb and it was an amazing lesson for me in descent—with each step I took down the mountain I began to feel better. Three hours later I was scoffing a big pile of food, feeling much better and totally relieved. The team was sadly kept from the summit by severe snow. Thankfully, once everyone was



Dave Bunting and brother, Andy, on the summit of Island Peak (6,200 m [20,340 ft]) with Makalu in the background, 1997.

safely off the mountain, the expedition had to proceed over the high Thorong Pass and onto Pokhara, so I was able to test my ability at altitude once again and all went well.

The Pisang Peak episode was enough to put me off for life, but thankfully it didn't. I look back at it as one of my greatest lessons. Since then I have ensured that my pace on the approach march to high altitude has been slow and enjoyable, and I usually aim to be the last to get to our destination each day. Education in the risks, preparation before departure, and sound judgement whilst on expedition are fundamental to the success and safe return of the team.

My motivation was undeterred by this expedition, and I wanted to learn more and achieve something significant on these fabulous mountains. My pride had been dinted, especially when one of the older members of the team had walked past me as I lay suffering; I did not want this to happen again. Thankfully there was so much more to the expedition than my 48 hours of hell on the mountain, and I was able to focus on the positive rather than negative elements of my experience.

This first expedition was enough for me to realise that bigger expeditions were much more interesting and complex with so many more elements to consider. The bigger expeditions leave far less room for poor preparation, which at best will cause you to suffer memorably and at worst risks serious injury or loss of life. In contrast, short day or weekend excursions can often be poorly planned and prepared but your survival will rarely be at risk. I now wanted another trip to the Himalayas, and this time I wanted to do things right.

GETTING IT RIGHT

Less than 2 years after my first Himalayan expedition, an opportunity came up to go back to Pisang Peak and I jumped at it, thinking there would be no better trial than to attempt the same mountain armed with all I had learned during and since my first attempt. Since my 1990 experience, I had climbed in Central Europe and Yosemite, been to the Alps for glacier and ice experiences, and worked as an instructor in Norway. One thing I noticed during this time was that my first Himalayan trip had gained me

some respect amongst other military climbers. It was a place people aspired to visit and at a young age I had been lucky enough to already have that tick in the box.

With these experiences behind me, I headed back to Pisang Peak on what I saw as a personal rerun to prove to myself that I could operate effectively in this harsh environment. This time I was team medic, which felt a little less imposing than climbing leader, but nevertheless this was still in at the deep end and I learned many lessons about organisation and care of team members on expeditions. The whole experience could not have been better. After a paced approach, enjoying the surroundings, we arrived at the mountain in top condition. I was teamed up with Chris again and a friend named Pete, and everything went swimmingly well right up until a rope length below the summit. Pete was much more experienced on ice than both Chris and I, and he led out the relatively steep final ice pitch as Chris and I belayed him from a small ice step only centimetres wide. The poor ice conditions did not allow us to secure ourselves, and as Pete ran out the rope with no protection, we both became more concerned about our position and what might happen were he to fall. We prepared ourselves to unclip, knowing we would have absolutely no chance of arrest. Thankfully he didn't, and we all stood proudly on the summit with our ice axes held high in celebration. It was an amazing moment and my ghosts had been laid to rest. In 1990 I had been so far out of my comfort zone, but now I felt confident and strong and I wanted more.

This was not the only memorable part of the expedition; we then chose to cross the more remote Tilicho Pass to link over to the opposite side of the Annapurna Circuit. This offered a superb 4-day unsupported challenge as the Sherpas crossed the easier Thorong Pass with the heavier equipment, leaving us to fend for ourselves. This may have been the first time I trod somewhere only a handful of people had been before, and I loved the seriousness of our situation and the hostile landscape with no one else around to help. We had little information about the pass apart from some details in Chris Bonington's I Chose to Climb (1985), and we had to deal with problems as they arose, including remote camping, climbing a dangerous gully,

and a full-day diversion to avoid a semifrozen lake. Another hard and memorable personal lesson came when I tried to jump a frozen stream and my leg went through the ice! Escaping with painkillers and anti-inflammatory tablets rather than snapping my leg, which could easily have happened from my launch from what I thought was solid ice, is a lesson I often reflect on. Such a remote and high helicopter rescue would not have been possible from this location and a long carry evacuation by my team would have certainly cut down on my list of friends. This lesson taught me that before doing anything in the mountains, you must always consider the consequences for everyone if it goes wrong.

TO ORGANISE AN EXPEDITION

Around 1996 I was planning a small venture to Island Peak and we were joined at the last stages of preparation by my brother, Andy, whom we invited along for the travel experience. This expedition still stands today as one my favourite trips, a small uncomplicated team, loads of laughter, and above all standing on the summit with Andy and a climbing friend called Ewen was such a satisfying experience. Taking care of Andy made me feel more confident with both my mountaineering skills and leadership ability.

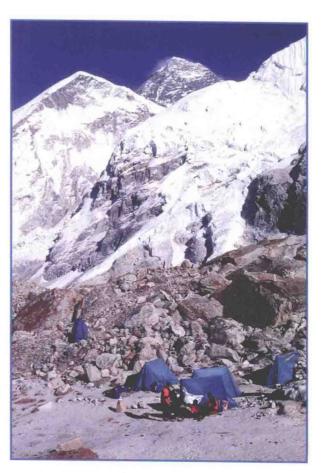
It soon became apparent from these early experiences that success was all about preparation and planning. If you do all the preparation properly, the expedition will run smoothly; if you neglect your preparation and are lazy before departure, it will result in inescapable discomfort and frustration. A massive investment of energy in the preparation and planning stages will provide for a much more enjoyable experience on the expedition itself, something I have been aware of since my early outdoor experiences.

A TOUGHER CHALLENGE

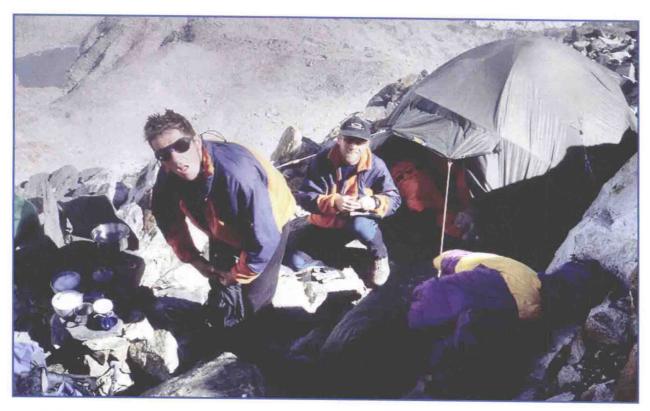
During the Island Peak trip we had not only viewed the stunning slopes of Mount Everest, but we had also spotted an inspiring peak called Mount Pumori (7,165 m, or 23,505 ft).

On return to Europe in 1997, we immediately began planning the next trip. The Pumori trip was pulled together very quickly, in just 12 months, and it was during that time that I met one of my greatest personal inspirations, John Doyle. He had been posted to the British Alpine Centre in Bavaria, where I worked, to prepare for the next German Army course. John had already completed the impressive Cassin Ridge on McKinley as well as Gasherbrum 1, the 11th highest peak, without oxygen. I revelled in his stories about the bigger peaks, wondering what it must be like to go to these mountains. John was very different to the majority of other people I had met, focussed and strong but also quiet and understated. John was highly respected in mountaineering circles, and within the Army Mountaineering Association he had already reached legendary status.

I felt I could learn from him, and so when he joined our Pumori expedition we were delighted and departed with a very capable team. Pumori



Pumori Base Camp with Everest in the background, 1998.



John Doyle and Dave Bunting at Camp 1 on Pumori, 1998.

is impressive and serious with no easy routes. It turned out to be a great trip for many reasons, a key one being that we took the right people, which is ultimately the foundation for any great expedition.

Climbing each day on relatively technical ground with a clear view up Everest was mind-blowing, and the pull to be on those infamous slopes began to build in me. Being so close to so much history, disaster, and triumph stirred my desire. It was like being in a bubble with history being made around me; there were stories developing over my shoulder on the slopes of Everest that would make up the front covers of British climbing magazines in weeks to come.

Strangely, I remember at that point that I did not have the immediate desire to stand on the summit of Everest, just its slopes. Maybe the poor performance on my first trip had knocked my confidence to perform, but I certainly wanted to be part of a team to climb the mountain.

On Pumori, the climbing was considerably more dangerous than on previous expeditions and it was here that I had one of my closest

calls. After some good progress leading out the route by a variety of team members, John and I were now the two lead climbers. The team had established Camp 3 on a promontory at around 6,300 metres (20,670 ft), where we had chiselled out a small exposed step in the snow to place our tent. We settled in, admired our route above, and picked out the line we would be taking.

Suddenly there was a huge noise from above and we looked in horror as a huge ice serac peeled away from the summit ridge and began to avalanche down the mountain. As it hit the open reentrant way above our camp, it was redirected and steered onto a track heading straight for our position. We both looked on, frozen by what we were witnessing. The only thing to do was get down behind the pathetic 1.2-metre (4 ft) wall that had been carved out during the placement of our tent and hope it would offer some protection from this growing mass of snow and ice. We watched the approaching avalanche in slow motion and 50 metres (55 yd) from our position, behind the only pathetic protection we could use, the mass of debris hit a mound



John Doyle and Keith Jenns climbing to Camp 2 at 6,200 metres (20,340 ft) on Pumori, 1998.

of ground and dissipated down either side of the promontory, leaving a large cloud of ice particles to completely engulf our camp but do no damage. I remember just looking at John, kneeling calmly with me behind this wall, clearly not convinced that it would protect us, but what could we do? It was one of the only times in my life that I genuinely thought for a split second that we were going to die.

As the afternoon progressed, smaller avalanches continued to break free with the warm conditions, but having seen such a big one have little impact on us, we felt protected. The route above, however, was not protected and our line of ascent to the next camp headed directly up the barrel of the gun down which anything from above would be forced. We observed the terrain but settled down for the night, knowing that there was little option than to be exposed to huge danger if we wanted to make the ascent. By daylight, having listened to the frequency of avalanche, I was convinced that with such warm conditions any progress was going to be hit by something, and escape from its path would be

impossible at that altitude on that part of the route.

John and I discussed the realities of our situation, including the length of exposure we would have in the danger zone at 6,300 to 7,000 metres (20,670-22,965 ft). We would be moving exceptionally slowly; something was bound to come our way. Everything we knew and had learned during our time in the mountains said to turn back, but after all the effort to get up there, the money, the sponsorship, and the desire to summit, it was not an easy choice. Desire could not overcome the stark reality, however, and on the morning radio call I announced our decision to turn back. The expedition leader understood, having witnessed the previous day's activities, and the attempt was abandoned.

It was a thought-provoking experience for me and one that could have easily resulted in the wrong decision. It was also a lesson in analysing risk and I was happy with our performance. As we stood looking at the mountain from a distance, having already packed up Base Camp, something happened that was almost meant to

be. An even bigger avalanche swept down the mountainside, taking the line straight through our route and camps. The right decision had been made! Mount Pumori remains one of the deadliest mountains, predominantly due to the avalanche risks in the same area where we had our incident. In 2001, five young Spanish climbers were killed just above the site of our incident, and by 2005, 472 climbers had summited the mountain with 42 deaths, 13 of those after summiting—statistics that are far worse than those on Mount Everest.

THE NEXT LEVEL: AN 8,000-METRE PEAK

During 1998, the next big British Services 8,000-metre (26,245 ft) trip was being organised to Kanchenjunga, the world's third highest peak, and John was already in the frame for selection after his performance on the 1996 Gasherbrum trip. The leader of this next trip, Steve Jackson, had been with John in 1996 and had seen his impressive contribution firsthand, and he knew John's involvement would be key. John encouraged me to attend the selection weekend and at the same time, unbeknownst to me, spoke to Steve about my inclusion. John's recommendation had worked; Steve liked me and the route was set for my biggest challenge yet.

The training for this trip was different. The members were already highly experienced with Alpine and Himalayan routes to their names, and the training focus was never on pushing limits. A great atmosphere was created, and meets focussed on the team, getting to know each other, and making sure we would get on when the chips were down. This mindset was developed by Steve, who was a fabulous character, and I could see why he was the man for the job. When I first met him, I did not know what to expect but probably had an image of a towering physical specimen who was going to drag us to the top of this mighty peak. Quite the opposite transpired as the 152-centimetre (5 ft), rosy-cheeked, slightly overweight bloke from Mansfield appeared. His intention was to organise, direct, and inspire the team to achieve

something special, and with his sense of humour and down-to-earth style he soon had the team hanging on every word.

In the interim, in 1999 I became part of a huge expedition to take 180 army personnel to the Himalayas to climb the 18 so-called trekking peaks. The name gave no clue to the difficulty; I was signed up for the technically hardest peak, set in the Everest region-Kusum Kanguru, just over 6,300 metres (20,670 ft). The leader of my team was Dave Wilson and I took on the role of climbing leader. The expedition was brilliant, and sadly we were denied the summit by atrocious snow conditions that sent a wave of extreme storms across the Himalayas, killing a number of people and stranding others in base camps and villages. The experience on Kusum Kanguru added to my all-round confidence for Kanchenjunga, although I was quite nervous but also immensely excited about this expedition.

For the first few weeks of the expedition I felt strong, reaching Camp 1 quickly, carrying loads and with plenty of strength to spare. With my three climbing team partners, we then worked up to Camp 2 at 6,800 metres (22,310 ft), where we stayed for a couple of nights acclimatising and did a short carry before returning to Base Camp. Back at Base Camp we needed a rest, but in the night I woke with a crippling headache. I have never had anything like it in my life. I couldn't move with the excruciating pain until it came light enough to find some paracetamol. When I got up it became clear there was something wrong with my eye, and as I looked down the valley I could only see a distorted image. Using an ophthalmoscope, the doctor soon discovered that I had a severe retinal haemorrhage. He made it clear that going back up the mountain carried a risk of it getting worse. This was incredibly upsetting; my chances of achieving much beyond what I already had were over. However, I did not want to damage my eyes, so I took the commonsense decision and withdrew from the climbing teams. There was still a lot to keep me occupied as I assisted Steve at Base Camp and kept involved with progress. Back home the doctors confirmed a double retinal haemorrhage on my macula, so I was content with my decision.