

ARMY MOUNTAINEER



Spring 2013

China Snow

Nepal

GR20

QDG in the Alps

Cadets on Skye



The Journal of the Army Mountaineering Association



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ARMY MOUNTAINEER

The Journal of The Army Mountaineering Association



LIFE ON THE LEDGE

YOU MIGHT BE A MOUNTAIN CLIMBER IF...

- You own a £75 dress suit and a £1000 Gore-Tex suit.
- You have ever frozen your lips to an ice screw while blowing an ice plug at your partner.
- You have ever used an ice axe to chop weeds in the garden.
- A Mexican bus driver has ever had to open his window because of the way you smelled.
- You have more summit pictures than wedding pictures.
- You've ever had icicles hanging from any part of your face.
- You can pronounce Popocatepetl correctly more than once in a row.
- You've ever fallen so far that you've run out of adrenaline before you ran out of rope.
- You like the smell of burning yak dung.
- Your sunscreen is always in a solid state when you need it the most.
- What you call cold is not on the thermometer scale.
- When you hear the words 'nose', 'captain' or 'aid', your hands start hurting and swelling.
- You arrive at a climbing gym with stoppers and friends still in your bag.
- You don't walk down stairs, you rappel.
- You've used an ice axe to clean off the front steps in winter.
- And finally, you understood all the previous lines. If you even laughed, you should get back to work... "

| | |
|----------------------------------|-----------|
| Appointments | 2 |
| Foreword | 3 |
| AMA Discounts | 4 |
| Diary | 5 |
| Expedition ALPINE EAGLE | 6 |
| Exercise TIGER CLAW | 9 |
| Exercise HIMLUNG HIMAL | 10 |
| Photo Competition | 16 |
| Exercise ILLIMANI SUNRISE | 18 |
| Red Snows | 20 |
| Exercise BOLIVIAN VENTURE | 22 |
| Exercise ALPINE EMU | 25 |
| Exercise COCKNEY ALTA VIA | 27 |
| Exercise NORTHERN CORSE | 30 |
| Exercise TIGER LUNDY LEAP | 32 |

ON THE COVER –
Members of the QDG on the Mont Blanc Massif.

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CONTENTS

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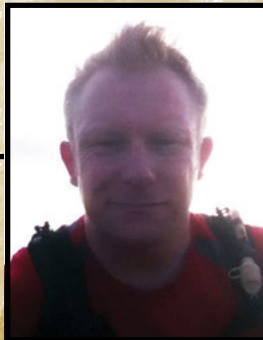
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ARMY MOUNTAINEERS



Foreword

Foreword by Chairman

It is with absolute delight that I take over as chairman of the Association. Having seen the dedication of the existing committee, I am certain that I am taking over an Association that is in good health, and for that I would like to thank the out going Chairman Cath Davies and the members of the committee who have given so much of their own time to keep the Association running.

I note that I am taking over as chairman at a time of great change for the Army. Tranche 3 of redundancy is now upon us; we are withdrawing from Afghanistan and Germany, and the TA is expanding as the new Army 2020 structure starts to take shape. For us, as mountaineers, the future still looks bright, with Adventurous Training, and particularly mountaineering disciplines, continuing to have a key role in the Army's training programme. We will need to be vigilant during this period of change, but I anticipate that there are still many opportunities for us over the coming years.

By way of introduction I should, perhaps, tell you a little more about myself. Having started mountaineering at the age of eleven I have enjoyed the mountains greatly in many forms, from rock climbing and hill walking, through to Alpinism, ski-mountaineering and trips to the greater ranges. My military mountaineering career started when I joined the AMA in 1989 and by early 1990 was serving

on the committee. Back in 1994 I organised the first Army sport climbing competition and have watched with much appreciation as my successors have taken this aspect of the AMA from strength to strength. Last year I was also lucky enough to lead a joint service expedition to Antarctica. Much to my surprise I am still on the committee after an unbroken stretch which will soon be approaching a quarter of a century. Over these years I have held every major appointment on the committee and look forward to guiding it through the coming years.

When I joined the AMA so many years back, we had only about 500 members. Since then we have grown strongly and now have a slowly increasing strength of around 2,300 many of whom still serving members, but also many others who have retired and still retain their membership and links with the Association. I am very keen to broaden our appeal over the coming years with an exciting programme of meets, competitions and expeditions, as well as building on our benefits package. If you have any views on this please post them on our Facebook page, or alternatively e-mail me at amachairman@gmail.com

I look forward to meeting some of you on the hill in the near future.



Editorial

You need only to look through the pages of this edition to see the wide range of challenging outings that continue to inspire AMA members. The trip reports that are required in return for an AMA grant are the backbone of that chain of inspire, plan, execute and record that is the life blood of the Association. Unfortunately I detect a drift away from some of the key ingredients of a good report: reports are late, short or even worse don't appear and photos are increasingly from a mobile phone and

lack the quality for a glossy magazine. So come on. Take pride in what you have achieved, take the effort to record it accurately and put the same effort into recording the trip as you did when planning it. That way those following will be better able to shape their own challenges around your footsteps. Challenge me with so many quality reports that I am spoiled for choice and choosing a winning photo is really difficult.

PARTICIPATION STATEMENT

The AMA recognises that climbing and mountaineering are activities with a danger of personal injury or death. Participants in these activities should be aware of and accept these risks and be responsible for their own actions.

Beat the credit Crunch

AMA DISCOUNTS

Despite the economic hardship that the industry is currently facing, we continue to enjoy excellent support from leading manufacturers and retailers of equipment and clothing. Please see details below and note that these businesses do have access (securely) to the AMA membership database and will know if you're a paid up member. They will request your AMA number when you order. The businesses retain the right to refuse these discounts.

Cotswold Outdoor

The 20% discount code for the AMA at Cotswold Outdoor Ltd is AF-DFMC-P2. The old code (A3000) will not work anymore. Additionally, **YOU MUST BE IN POSSESSION OF A VALID AMA MEMBERSHIP CARD TO USE THIS CODE IN STORE.** No card, no discount. Cotswold Stores have a copy of the AMA card. Cotswold has been particularly supportive of the AMA, but has had several problems recently with customers attempting to claim AMA discount in store without cards. Please carry the card and be polite to one of our key sponsors. Cotswold is using an intelligent retail management system to monitor usage of the new code.
www.cotswoldoutdoor.com

Summit Mountaineering

Summit run a whole range of walking, scrambling and climbing courses from their bases in the Wye Valley and Snowdonia; they specialise in learn to lead and technical development. 20% discount to all AMA members and their families. Call 07896 947 557 info@summitmountaineering.com quoting AMA number.
www.summitmountaineering.com

PHD / (Pete Hutchinson Designs)

POC – Emma Harris, can be contacted on 01423 781 133 or via the e-mail address. PHD offer a 25% discount off all standard items to the AMA.
www.phdesigns.co.uk/index.php

Beyond Hope – Evolv, Metolius, Prana and Rock Technologies

POC – Lee or Rick 01457 838242
Trade price + VAT + carriage deal to all members of the AMA.
www.beyondhope.co.uk

DMM, Crux, Lightwave and Mammut Ropes

Trade price + VAT + carriage deal to all members of the AMA
POC - 01286 873580 Anne Rhodes or Katrina Spinney.
www.dmmclimbing.com

Montane

POC – Kris Carrick 01670 522300 x 210 kris@montane.co.uk
UK Pro Price List for AMA Members applies. All orders must be via the Montane Customer Order Form.
www.montane.co.uk

Paramo

A new scheme is now in place whereby the mountaineering qualifications and or experience of an individual are assessed by Paramo and then turned in to a sliding scale of discounts within their Pro User scheme. As this is a scheme which treats each applicant individually, you need to speak to Paramo personally. Ring Alex Beaumont via +44 (0) 1892 786446.

Millets

Most High Streets have one – 10% off with AMA card and your MOD90
Mountain Equipment (via Magic Mountain shop in Glossop) – 20% discount. Phone Magic Mountain on 0161 3665020 ask for mail order department, quoting your AMA number.

Terra Nova

They now operate a system similar to Paramo whereby AMA members need to contact the company direct and set up a Pro User account via password. When you then re-log in to the Terra Nova site the price list will auto adjust to reflect your discount. Magic !!
info@terra-nova.co.uk +44 (0) 1773 833300
If you have any issues with the scheme, or know of any other companies willing to offer discount to the AMA, please drop me a line.

Lastly, a reminder, please use these discounts for personal purchases only!

Tomo Thompson

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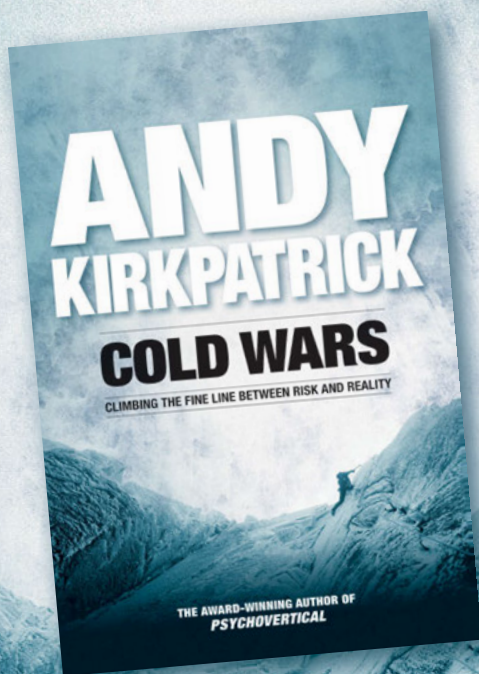


DIARY

Mark and record the dates below and get involved. Further details where not stated can be obtained through the Meets Co-ordinator and will be on the website closer to the time. We are always looking for people to help organize. If you feel you could contribute, please contact the Meets Co-ordinator.

PROPOSED AMA MEETS PROGRAMME/JSMTc CONCENTRATION 2013

| Date | Area | Event | Location | Notes |
|------------------------|---------------|-----------------------------|-------------------------|--|
| 2013 | | | | |
| 26-28 Apr | Peak District | Crag & Boulder – 10 pers | Climbers Club Frogatt, | Admin lead – Mike Smith. Accommodation booked. Technical lead – Mike Smith. |
| 24-26 May | Pembrokeshire | Sea Cliff & Crag – 10 tents | St Petrox Farm Campsite | Admin lead – Chris Dowd. Campsite £6-£13 per tent per night. MIA required to enable abseil access. |
| June | Lake District | Walk/climb/scramble | TBC | Admin lead – Tomo Tompson. |
| 7-19 Jul | Alps | Alpine | TBC | JSMTc lead. |
| 23-26 Aug (BH weekend) | Cornwall | Sea Cliff – 12 pers | RM Hut | Admin lead – Baz Whale. |
| 26-30 Sep | N Wales | AMA AGM | JSMTc | Admin lead – Tomo Tompson. |
| 11-13 Oct | Wye Valley | Novice Climbing – 15 pers | Old Ferries Inn | Admin lead – Ryan Lang |
| Nov | Lake District | Walk/climb/scramble | Ambleside Hut | Admin lead – Tomo Tompson. Coincides with Kendal Mountain Film festival – tickets at own expense. |
| Nov | | Presidents Dinner | RMAc | TBC. |



"I was aware that I was cold – beyond cold. I was a lump of meat left for too long in a freezer, a body trapped beneath the ice, sinking down into the dark.

"I was freezing to death."

In this brilliant sequel to his award-winning debut Psychovertical, mountaineering stand-up Andy Kirkpatrick has achieved his life's ambition to become one of the world's leading climbers. Pushing himself to new extremes, he embarks on his toughest climbs yet – on big walls in the Alps and Patagonia – in the depths of winter.

Kirkpatrick has more success, but the savagery and danger of these encounters comes at huge personal cost. Questioning his commitment to his chosen craft, Kirkpatrick is torn between family life and the dangerous path he has chosen. Written with his trademark wit and honesty, Cold Wars is a gripping account of modern adventure.

"The portrayal of Kirkpatrick's developing insight into his motivation and his growing realisation of the importance of life outside climbing make this a climbing autobiography on a par with Steve House's Beyond the Mountain."

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AMA12345



VERTEBRATE PUBLISHING

Expedition

ALPINE EAGLE

By LCpl King



A group twelve aspiring mountaineers from 1st the Queens Dragoon Guards (The Welsh cavalry) set off early doors from Sennelager, Germany on the 30th July to make their way down to Chamonix in the heart of the French Alps. Many of the expedition members were complete novices and having no idea what to expect were taken away when we were traveling past the amazing scenery and the enormous scale of the high peaks in the Swiss and French Alps.

We arrived in Chamonix a few days before the start of the expedition which gave us much needed time to do some pre expedition training, get equipment prepared and enjoy what Chamonix has to offer. This gave us a much quicker start to the expedition as basic skills had already been taught. The short time in Chamonix with all the high mountains in view fuelled the excitement within the members to start the expedition.

Heading from Chamonix to Switzerland we started training a few days later and headed up the mountain from the Arolla Valley in Southern Switzerland. From there we went straight for Point de Vouasson standing at 3489m and bagged some of the lads first high peak which was a good achievement for the height gain and distance on the first day. Over the next three days we carried out all the training required to safely travel as a group around the mountains and to the 4000m peaks.

This included training on Crevasse rescue, mixed ice and rock climbing, rope work and many other key requirements to stay safe in such a dangerous and demanding environment.

We completed the training stage with a long and arduous summit in high winds and low visibility of Pigne d' Arolla standing at 3790m, This was the highest peak climbed in the training stage and by now we had gained valuable acclimatisation and experiences ready to move onto the high peak stage of the expedition.

After a well-deserved day off to prepare equipment and rest for the next stage, we travelled to Saas Fee in Switzerland. Starting early in the morning we got the lift from the valley high up the mountain where we started the long and steep climb on the North West ridge of the Allalinhorn. The weather was not on our side and made our ascent extremely difficult as we were battling against high winds, freezing temperatures and low visibility. After an arduous climb and feeling the effects of high altitude we reached the summit at 4027m. We immediately headed down to prevent the freezing temperatures setting in and before the snow went to soft as the day went on. After trekking back down the same route we got the lift back down and after an exhausting day of our first 4000m peak we all got back and got straight on with recuperating ready for the next day and the next high mountain.

After having completed one 4000m peak, we started the next day enthusiastic to see what the next one could offer. From the lift station high up the mountain, we started our ascent on the North West flank of the Weissmies. Before we got to the towering steep sides of the mountain, we had to negotiate a cross a glacier with numerous often rather deep crevasses some crossed by precarious snow bridges. After successfully getting through crevasse field, we came to the steep sides of the Weissmies where we are continuously threatened by avalanches and glacier falls, there had been a massive avalanche through the night and debris were deposited all around the base so we didn't hang around and kept moving at an exhausting but slow pace as the altitude felt like it was sucking the energy out of us. After an exhausting and steep climb we got to the Weissmies ridge which is a very exposed area as it drops off both sides for hundreds of metres so we stayed focused and reached the summit at 4017m on a clear, sunny but bitterly cold and windy peak. We came down the same route exhausted again.

The next day came with dangerously strong winds up on the high peaks so we were unable to go into the high mountains. Instead, we got the lift up the mountain and completed a 400m nine pitch rock climb of the Jegi Horn and summited at 3206m, This was a





hard rock climb and in mountaineering kit proved extremely technical and difficult. The wind was not as strong as up on the high peaks but still proving difficult on the exposed faces by gusts pushing you off balance and the rope whipping around violently.

So our high peak stage was completed and we left Saas Fee feeling good that we accomplished two 4000m peaks within such a short time, we arrived in Chamonix to see that we were battling with the weather for the next few days as we were looking for a clear weather window to make a push for the summit of Mont Blanc. As we were unsure when the weather would allow us to make a push for Mont Blanc we prepared the equipment so it was ready to go at short notice.

A day later, we got the weather window we were looking for. So we started very early and got the first lift to the Aiguille du Midi station at 3800m, we had a slick and speedy start getting the equipment ready before emerging onto the glacier and managed to get ahead

of everyone else from the station. We made our way down from the midi and had a relatively speedy walk over the midi du plan plateau then started the ascent of Mont Blanc du Tacul, after a steep slog up the first of the three mountains on the route we were going strong and conserving energy. No one had overtaken us at this point so the fitness and acclimatisation was proving its worth. As we were traveling up Mont Tacul we encountered a large number of other mountaineers coming back down unusually early for the route, some were warning us of high winds and an avalanche that had injured a lot of people on our side of Mont Maudit. In Alpine mountaineering you make your own decisions and judgements and so we carried on to assess our likelihood of making a summit attempt. As we arrived in the col between Tacul and Maudit we were faced with an array of helicopters, search dogs and large amounts of people helping in an extensive rescue attempt on the disaster that had unfolded an hour before, This was the point where we made a group decision to not go for the summit attempt and so we turned back and in a contingency plan decided to complete a summit attempt of Mont Blanc du Tacul at 4248m which accumulates in a technical rock and ice summit.

Mont Blanc du Tacul was the last mountain we summited on the expedition and subsequently brought the trip to a close, the expedition was extremely successful and gave the twelve members the ability and confidence to safely continue alpine mountaineering within a group at a high level. The expedition brought a lot out of the expedition members and showed their true colours when pushed to the limits, they all preformed to the maximum and in a professional manor when faced with difficult and demanding situations.

The disaster that happened on the 11/07/12 where nine people were killed and a further 19 injured in an Ice fall on Mont Maudit was a firm reminder of the natural dangers involved within Alpine mountaineering and shows how some aspects in the Alpine environment cannot be predicted. Our thoughts go out to the mountaineers and their families that were killed in that tragic accident.



Exercise

TIGERCLAW

By Cpl Hollick

If you tell some people that you're going climbing and you're staying in Benidorm, they look at you like you've got two heads, like you're from another planet. But all you have to do is point them in the opposite direction of the sea and you have an amazing mountain view.

It's the 22nd October and we arrive at Alicante airport (nothing bad to report about Ryanair), myself, Cpl Dawber (expedition leader), Cpl Stevenson Cpl Owen and Alan Giles, collect our vehicle from Gold Car and head to our accommodation. Much to the relief of Cpl Dawber, we are in the right place at the right time, with the right kit. All we need now is perfect weather and our wishes are answered, it is over 22°C everyday of the expedition.

Now if you are familiar with this region, there is a good chance that you are familiar with Sierra de Toix. If not, it is an excellent climbing venue for the novice and experienced alike, with coastal views, just always remember the sun cream. I've been here with the army prior to this visit and I didn't think it held any more surprises for me. That was until myself and Cpl Dawber completed a route called 'Magical Mystery Tour (HVS)'. This was a committing climb to say the least because once you have abseiled down approx 40m (we used 50m half ropes) it is a traverse, then a climb back to the top (this climb being the easiest on the cliff-face). The only way of getting off was to complete the route or make a bit of a jump and then a 3km swim back to shore, but confident in our abilities we set off and it is safe to say we made it. However, it's surprising how much the sound of the tide and the squawking of gulls and a committing abseil can still make your heart rate increase. So if you're in the area and want to try something different, then this could be the one for you, just beware it is part traditional climbing and has ENP on two of the belay stances, so take some spare number 3 wired nuts with you (book says wild country rock 3) and make sure one of you can lead this grade or have at least passed your military swim test.

If you really want to put your navigation skills to the test then try the Spanish road maps, we really put ourselves up for this challenge when we set off for Montessa. This venue was quite out the way from us, on the other side of the mountain range in fact and we managed to use every scenic route on the way. There is nothing worse than having 5 people in the car who think they can navigate, and if you're going to call 'shotgun' for the front seat be prepared to take responsibility. Alan Giles highly recommended Montessa so we set to it with an early start and if you want to fill up your log book on great single pitch climbs in the sun and the shade, then this is the venue for you. It is single pitch paradise, however, if you don't like working out and you like to feel your arms at the end of the day then think about it.

Another great venue we visited was Marin, it was a bit of a drive away but worth it, with more two pitch routes than you can shake a stick at, graded from 4 to 5+. I was in my element and teamed up with Cpl Stevenson for most of the day, we proceeded to tick them off and with Cpl Stevenson being quite new to the climbing world this was a perfect venue for him to learn his trade. As well as multi pitch this venue offers an abundance of mixed single pitch routes and getting to the venue was a breeze, again, only mad dogs and Expeditioners work in the midday sun so take some cream.



Exercise

HIMLUNG

HIMAL

By Jonathan Fuller



“So you’re bringing those you mad man?!”, were the first words I heard from Olan, as we loaded my skis in to the back of his van. We were en route to London Heathrow to join up with the rest of the team bound for the Nepalese Himalayas to attempt Himlung Himal (7126 m). To the best of our knowledge, our team of six climbers from the West Country – all civilians, though myself (East Midlands UOTC) and Justin (ex-PWRR) had been service personnel (well, sort of in my case) – would be the first wholly British team on the mountain. All being well, we would come home with the first British ascent and, for myself, ski descent.

Himlung is located near the Nepal-Tibet border, north-east of the Annapurna range, above the Nar-Phoo valley. This region of Nepal is relatively untrodden, with the majority of trekkers and climbers continuing past on the Annapurna circuit.

Setting off in mid-September, we had taken a chance on the monsoon finishing, but arrival in to Kathmandu showed us that it was still in full swing. The madness of taxis, mopeds, buses, stray dogs and sacred cows all competing for the same road space was accentuated by the constant rain creating huge puddles and small rivers of water running down the only space left for pedestrians. We met our Sirdar, Furtemba, our two other climbing sherpas, Dormae and Angdou and the porters after a day of the obligatory Thamel experience of bargaining and being offered more incense than anybody would know what to do with, and in the still falling rain we set off for the start of the Annapurna circuit. The rain made this an eventful journey, with landslides and flooding causing the road to be impassable until teams of local men had cleared the mud and debris. What is nominally a 6 hour drive to Besisahar turned in to a 11 hour monster that saw us arrive weary and greeted by already full guest houses. Luckily, just as we were having to consider a night in the bus, Furtemba managed to secure us beds for the night – though he did get the owners out of bed and convince them to cook us dinner at 2300 hrs!

We had secured a bus for the journey from Besisahar to Jagat – normally most trekkers first day of walking. We loaded everything on to the bus and a 4x4 truck and started up the ‘road’. Some epic off-road skills were demonstrated by our driver, as we snaked and slid up the muddy, hole-ridden road that would struggle to pass as a bridleway in the UK. Some scary moments ensued as we passed close to the edge of partly washed away road surface that sunk further under the weight of the vehicles. On more than one occasion we were ready to leap out the open door of the bus! A large landslide finally halted our already slow progress and we were forced to bid farewell to our heroic driver and make the last few kilometres to Jagat on foot. This was where I was introduced to leeches, managing to break my duck with a hungry chap on my heel. Luckily he was washed off when we had to cross a river and I didn’t have to resort to removing him myself.

The following two days took us through Dharapani and then Koto, on the north-eastern corner of the Annapurna circuit. The weather was starting to settle down, the monsoon’s power finally waning. In the brief, but fierce periods of sunshine, we were treated to glimpses of the Himalaya’s breathtaking beauty between the clouds– tasters of what was to come. The might of the monsoon was certainly plain to see, the river swollen and the waterfalls thunderous from the months of rain.



Cloudless skies and an utterly fantastic view of snow-plastered Annapurna IV and Lamjung greeted us at breakfast in Koto. This was where we left the Annapurna circuit and headed north up the Nar-Phoo valley. The landscape changed remarkably, we left the lush, green foothills of the circuit for sheer limestone cliffs that cast the valley in shade until midday. Despite the foreboding look, this shade proved to be very welcome indeed, as the rains that finished so abruptly had been replaced by the merciless rays of the Sun. The 1000 m climb up to Meta, nestled on a plateau half way up the valley side, was considerably harder than any of the previous days walking, on account of the heat and altitude – at the day's end we were over 3500 m. A hearty meal of dal bhat, plenty of tea and an early bed were well received by all.

Two further days of easier walking took us steadily up to Phugaon (4100 m), which was to be our venue for a day's rest and acclimatisation before continuing on to base camp (~4800 m). The sandstone terrain around Phugaon was starkly different to any other place we had been, with very little in the way of vegetation and a lot of dust that managed to find its way on to everything we had with us, even if those items hadn't left the tents.

We were thankful to set off from dusty Phugaon bound for base camp. This feeling of relief, however, soon turned to discomfort and breathlessness, as we weaved through the moraine in the ever powerful sunshine. A long, unrelenting slope led us to the yak pasture that was to be our home from home for the next 18 days, everyone suffering the effects of the altitude. Erecting our tents was a protracted, amusingly tiring affair, only made easier by the fact that the unsuccessful Swiss team on the mountain before us had levelled off the tent pitches.

Once at base camp, it felt as the exped had really got going. The summit may have been out of view, but we were enthused by our proximity to our objective and the business of sorting kit and high altitude food began in earnest – albeit at a pace dictated by our lack of acclimatisation! Furtemba informed us that he had arranged for the lama from the monastery in Phugaon to perform the puja that would see us placate and honour the gods in return for safe passage in the mountains. Only Olan and Justin had experienced such a ceremony before, so the rest of us were excited about what lay ahead. Lasting over three hours, it was an intense religious event that made us realise the importance the Nepali people give to their faith. Unlike my memories of chapel from school days, the puja seems a joyous ritual, enriching rather than draining. We were even taught a traditional Sherpa dance to bring things to a close!

With the gods on our side, we were free to commence our load carries. The first was to where some teams had placed their



advance base camp – something we had decided to forego and just use it as a gear stash, as it was concluded that it would probably take as long to set up camp and eat as it would to continue on to camp 1. This first load carry was horrid; though not a great deal of ascent (~300 m), the route took us up a large, steep spine of lateral moraine that was littered with loose rocks. The deposit of tents and rope coils for fixing lines higher up complete, we were all glad to rest and then return to base camp for tea and biscuits. The following day saw us go beyond the stash point, on to camp 1, which we planned to site on the edge of the heavily crevassed glacier above us, at about 5400 m. Thankfully, the climb up the moraine passed quicker than the previous day – I realised we must be improving, though it didn't feel like it! A plateau – gratefully received – extended towards the foot of the glacier, but then it became apparent that the only way to the glacier itself was a huge slope of scree that looked primed to give way at any moment. We lunched and then, feeling recharged, started our way up the jumble of loose rocks. This was universally found to be hellish, with plenty of cursing and a lot of what passed Olan's lips can't be repeated. The way was treacherous and rocks would need to be tested for movement at almost every step, something that slowed the pace, but I accepted that after falling and sliding on my knees a couple of times. The result of covering this tiring terrain with heavy loads, was that I failed to reach camp 1, stopping 100 m short at the top of the scree on the edge of the glacier. My head felt like it was coming out through my eyes and all I wanted to do was lie down for a while! Despite having been higher on a previous expedition, I had not suffered much with headaches and the like, so this was a relatively new experience. Luckily, Ben, Olan and Furtemba felt pretty strong, so the group kit I had was shared out and carried to camp 1 as planned while I slowly descended the scree. The splitting headache lasted all the way back to base camp and stayed with me all that evening, confining me to my tent, sipping on tea and soup and waiting for the next time I could take some more paracetamol.



Fortunately, a rest day followed and we all had chance to rest our limbs, play cards and eat plenty before returning to camp 1 to sleep and then on further up the glacier to start fixing ropes through the crevasse zone. The knowledge of our first foray up the scree, drove us to find a, hopefully, better route up it. This was achieved successfully by flanking the steepest part slopes and following a faint ridge to the glacier. I think everyone much preferred this option, as there was considerably less swearing! Some degree of acclimatisation must have been kicking in, as the time taken to camp 1 was far less than two days before. Tent platforms were dug, though with so little skill that Furtemba, seemingly moving at twice our speed and with much more skill, levelled out and strengthened what we thought was level and good enough for tents. It was also our first taste of the boil-in-the-bag meals so kindly provided to us by Wayfayrer for high altitude food. They were heartily devoured and washed down with a tasty mug of hot mango squash, before an oddly early bed, but with no mess tent to congregate in and the rapidly falling temperature, there was no better place than one's sleeping bag.

A bright morning followed the most star-filled night's sky I have ever seen and after another round of Wayfayrer, we set off slowly for the middle of the glacier. I soon realised that I was not acclimatised sufficiently and fell behind. Justin and Sandra were suffering similarly, so we were forced to descend prematurely, leaving the initial fixing of ropes to Ben, Olan and the Sherpas. When we reached camp 1 again, the scale of the glacial bowl that lay between us and camp 2 was fully realised. The others were mere specks on the slopes above us. Appreciative of their efforts, we made for base camp. A long afternoon ensued, as we waited for their return, not knowing if they had opted to overnight at camp 1 again, or come back down. Nerves were calmed in the late afternoon, as the radio crackled in to life and Olan announced that they were returning. It was dark by the time they appeared in to view at the top of the moraine, only the glimmer of their head torches giving them away. We greeted them with hot squash, Furtemba, Dormae and Angdou amazingly still looking fresh and sprightly, Olan and Ben withered and fatigued.

The arrival of another team the next morning brought with it the first rain since the monsoon had ended, luckily it was a planned rest day, so had no impact on our schedule. It had been discovered that there was more fixing of ropes required en-route to camp 2 than previously envisaged, so Furtemba managed to enlist the help of the Sherpas from the other team now at base camp. His plans were delayed by the weather the following day also, as the inclement weather continued. Luckily, the weather abated overnight and the Sherpa team set off early to forge a route to camp 2. Having performed some more load carries to camp 1 the previous day, the remainder of us rested at base camp. Furtemba returned in the gloom, looking slightly tired for once, reporting that the snow was deep and the going slow. Camp 2 had not been reached and he

was unsure if there was even a safe route through the remaining crevasses. Our whole endeavour hung in the balance, making dinner a tense affair.

It was decided that Olan, Ben and myself would go as far as we could and check the snow conditions, giving Furtemba a chance to rest. I had some trepidation, as I had failed up to then to even make it past the foot of the glacier. We went alpine style, with light packs and only what we really needed, meaning we covered the ground to camp 1 in record time and still had plenty in the tank for the glacier. As we ascended through the atmospheric bowl of towering seracs and bottomless crevasses, it became apparent that the snow pack was not as bad as we had feared – our luck was in, progress looked like it could be made to camp 2 and beyond. After reaching just over 5650 m (an ascent of almost 900 m), we began our descent in much higher spirits and though reaching base camp in the dark and being devilishly tired, were happy to report our findings.

A rest day followed, but just as I was savouring the prospect of getting two in a row, Furtemba was sent a weather report on the satellite phone that suggested the only window for our summit bid would open the next day. Our options were discussed over luncheon and it was concluded that if we rested another day, the weather would last long enough to deny an attempt at the summit. Relaxed washing of clothes and leisurely tea drinking swiftly turned to feverish packing and furrowed brows, as the essential items of kit were decided upon. After the load carries, what I thought was going to be a light pack, turned out to be a monster – ski touring boots are bulky and heavy!

In settled weather, the team set off from base camp bound, over the next three days, for the summit of Himlung at 7126 m, a mere 2300 m above us. Effectively ascending twice the amount necessary to summit Mont Blanc from the Comisques hut, but starting at the summit instead. On the way up the moraine, Justin was forced back to base camp. The cough he had just about managed to get on top of had resurged and threatened him with further complications, such as pulmonary oedema, if he was to continue. We were down to five. A real shame, but a safe return is always more important than the summit. The rest of us plodded on, making it to camp 1 at a good pace, giving plenty of time to rest before the sun disappeared behind the distant monolith of Dhaulagiri.

Just when I thought I had enough weight on my back, the addition of my skis (which I had previously deposited at camp 1) was almost too much. My progress across the glacier was slow and painful, but somehow each time I thought of ditching the skis, I kept going until the next enforced rest. These rests became more frequent and longer with the steepening slope up the side of the huge bowl we crossed from camp 1, everyone's pace slowed considerably,



as the weight on our backs made its presence felt. I reached the fixed ropes that would help us navigate the remaining slopes below camp 2 and decided that I could take the skis no further. My pace was too slow and I was expending much more energy than I could recover from at the 6000 m of camp 2. Furtemba said he would take them, but I insisted that they were my responsibility and if I couldn't take them they stayed put. Rather than accept this, he simply strapped them to his bag and set off – my pride was dented and I let him do what I had tried hard to avoid all trip, but I thought if I had less weight on my back for a while I could take them back off him. This was not to be. About 150 m below the small area of flat ground where camp 2 was to be, Furtemba took the skis and left them in the snow for me. I, looking up at the 55° slope between me and camp 2, decided that I was in no position to put them back on my pack and they stayed in the snow. All hope of skiing Himlung disappearing with each step that I took towards our next camp.

Camp 2 was set up and dinner cooked and eaten from the comfort of our sleeping bags. The wind had picked up as we had arrived, making all thoughts of sitting in the sunshine admiring the majesty of the Himalayas vanish and be replaced by the strong desire to be warm. Camp 2 was also the place our team reduced further to just four. Claire, who had also struggled with the weight and pace made the decision to descend back to base camp, as she felt that she could not continue. It was disappointing to lose another team member, but it was a very honourable choice, rather than potentially become a burden and endanger herself and the rest of the team above 6000 m. So, as the wind continued to gust around us, the four remaining climbers considered our chances and attempted to get some rest.

The wind was strong all night, waking us occasionally when gusts buffeted the tent sides. Getting any proper rest was difficult, not least because of some epic, sometimes unnerving, Cheyne-Stokes breathing. Morning came and the wind still roared around us. The skies were clear, but it was bitterly cold. Moving off would have risked frostbite, as we knew our pace would be too slow to effectively warm ourselves in the cold. With most things packed and ready, we waited in our tents, willing the wind to drop so we could be on our way. It was in this period of inactivity, I decided to fetch my skis for one last attempt at getting them to the summit. I would descend the 150 m to them, as Olan, Sandra and Ben started up to camp 3. Judging by the previous day's timings and the addition of having an empty pack, I reckoned I would be able to get back to camp 2, pack my kit and get on my way in about an hour. It seemed like a good plan and when the wind finally calmed enough for us to consider leaving, I left the others and descended the fixed rope to the skis. The descent was straight forward and I made it in 20 minutes. Feeling strangely strong, I strapped on the skis and began to retrace my steps. It quickly dawned on me that this was going to be far from easy. Looking up the steep slope, I could see





the wind was still just strong enough to pick up snow and deposit it in my foot holes – I would have to break trail back to camp 2. My planned hour, turned in to almost double that and I was more tired than I expected to be once back at camp 2. Kit was packed as quickly as the situation allowed and I trudged off. A steep, almost vertical slope barred the way to the flatter ground that rose to a broad, rounded ridge crest. The snow was deep and soft and foot-step saw me sink to my knees or slide a little backwards, only the ascender on the fixed rope keeping me steady. Using a combo of ice axe and ascender I made it up the pitch, only to be greeted by Furtemba leering over the edge and shouting angrily, “What are you doing!?” He had come back to fetch me, as due to topography, our radios had ceased to be of any use. He was frustrated with me, but I was defiant and continued slowly on. As the first hour passed, the naivety of my decision to get my skis became clear. I had tired myself unnecessarily and now my pace was unsteady and slow. I gritted my teeth and carried on for a few more hours, but ultimately, with every rest to catch my breath, I felt my energy sapping away and I came to the conclusion that I could not continue with the skis – summit descent over. I begrudgingly left them at the top of a slope I thought looked skiable and continued on along the ridge. A large hump took us difficultly over 6400 m and dropping down the other side, the plateau chosen for camp 3 came in to view. Also coming in to view, was a monstrous bank of cloud rolling over a ridge and filling the basin between the summit ridge and next nearest peaks – a warning of what was to come.

Camp 3 seemed to be getting no closer, as we descended towards it. The clouds, however, were thickening and darkening, continuing their steady march to our camp. The wind started to pick up and the temperature dropped, forcing me to stop and don the down jacket. Hood up and face mask on, the going was slow and the



snow a horrid mix of wind crust that didn’t support one’s weight and firmer more consolidated wind-scoured nev each footstep a lottery. Our race with the clouds to camp 3 was lost, they enveloped us and Dormae and Angdou already at camp 3 became ghostly figures in the gloom. The wind continued to strengthen, making doing anything at camp very difficult. Things were swiftly sorted out and we all crawled in to our tents, where, though we didn’t know it at that point, we were to remain for the next 14 hours. Fighting the urge to merely curl up inside the sleeping bag was hard, we were completely drained and with the wind forcing its way in to every nook and cranny, even melting snow became a onerous task. The business of eating was performed as quickly as we could manage and the tent doors tightened down as firmly as possible. The prospect of getting up in a few hours to go for the summit was not one that excited me much as I bedded down. The night was punctuated by the coldest temperatures we had experienced so far, everything not in the sleeping bags froze solid, ice formed on the inside of the tent and we slept with face masks on to take the bite out of the frigid air. The wind was savage, gusts increased in power, waking us periodically with fears that our flysheet had torn or been ripped away. Snow was flying around in all directions, getting under the bottom of the flysheet and filling the space between that and the inner. We took it in turns to bash snow off the inner, as it built up, trying to turn us in to some sort of igloo. Our cooking equipment, left in the tent porch, was buried by blown-in snow. We knew by now that any hope of setting off for the summit that morning had gone, our attention instead turned to getting out of the storm intact.

Morning came and though the clouds had cleared, the wind still raged. The temperature seemed to have barely increased despite the sunshine and full down kit was adopted by all for the breaking of camp and slow descent to camp 2. Looking back at the summit, the slopes up to it looked leaden with fresh, wind-loaded snow – despite the harsh cold, it would have been foolhardy to climb on with that snow pack.

The descent was desperately slow, all of us feeling the effects of a sleepless night at 6350 m. This slow pace made it nigh on impossible to warm up sufficiently, Olan suffering particularly with numbness in his fingers. Frequent stops were required, as we struggled to breathe in the harsh wind and low temperatures. Breathlessness never seemed to leave us and nausea forced me to my knees numerous times. I was struggling, thinking that, as we were roped up, I was a burden on the team – little did I know at the point everyone felt similarly horrendous and not one of us could move especially quicker than we were.



Dropping further, I was reacquainted with my skis. I untied from the rope and replaced my crampons for the planks. It was with a feeling of release I slid past the team down to the next flat area. It was incredibly hard going, skiing at over 6200 m with a heavy expedition pack took it out of me far quicker than I expected and I was fairly wasted when I reached the bottom of the slope. Unfortunately, this was all the skiing that took place, as the terrain was far too undulating back to camp 2 and then below it, the wind scoured snow was not conducive to staying on my feet – and falling would have seen me slide down towards a heavily crevassed zone. Overall, the effort for the benefit did not weigh up!

Picking up more kit at camp 2, the descent to base camp was made in the one day. It was reasonably uneventful, but our vanquished summit bid looked heavy on the others' faces. We were immensely tired when met by Claire, Justin and the cook staff, and a hearty, reviving pasta dinner was consumed in record time before collapsing in to our tents.

Rest and recovery days ensued as we waited for the mules to make their way up from Koto, and then three days after our beating back from camp 3, we left base camp for dusty Phu, which seemed to be even more dusty than remembered.

The continuing descent to Koto was pleasant, what were hard days on the way up were made easy by our improved acclimatisation. More people seemed to be in the valley, with plenty of porters, trekkers and climbers snaking their way up to Phugaon. This influx of people was most obvious as we reached the Annapurna circuit. The villages were full of trekkers and around each corner yet more porters trudged up with their clients' baggage – it was certainly high season in the region! We were glad that we had taken our chances with the monsoon and missed the crowds on the way up to base camp.

Leaving the circuit after some pleasant enough, short days of walking, we were back on a bus bound for Kathmandu. Our driver was certifiable, driving in a such way that made us wish for the landslides and flooding endured the previous month, at least that would have stopped him overtaking on blind corners!

We were a few days early back to Kathmandu, so some hardcore souvenir shopping was done in Thamel. The majesty of the Boudhanath Stupa (a UNESCO World Heritage Site) and the amusing scenes at the Monkey Temple were also taken in during our days of R+R.

Leaving early after 40 days in country, we made our way to the airport. The bureaucracy of the airport in Kathmandu was astounding – the only place I've ever been where hand luggage has been checked at security and then again getting on the plane! As we lifted over the city and climbed out east before banking through 180°, the views of the Nepalese Himalayas were incredible. More 8000 m peaks were visible than we knew to name, though the gargantuan scale of Everest was plain to see.

We were tired and had each lost weight that showed in our faces, but we felt the expedition had been a success. The summit was not reached, but we had taken a relatively inexperienced team to climb a peak with little known about it and learnt an enormous amount about 'expeditioning'. Everyone was still speaking to each other and we all had our fingers and toes intact. The seed of Himalayan climbing had certainly been sown in my mind. A fantastic expedition and I would like to thank the AMA for their financial support.



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(Photos should be the highest quality possible (not less than 2Mb) and e-mailed to the editor, along with a credit and caption) journal@armymountaineer.org.uk



By the light of the silvery moonrise; Fit Lt Alex Tomcynski gets the scam ready at Camp 1 (4500m) on the NW Ridge of Baihaizishan, Sichuan, China



Steve Kew on the last pitch of Fishers Folly VS 4C in Borrowdale on the 26 May 12 "shush I am thinking bro"



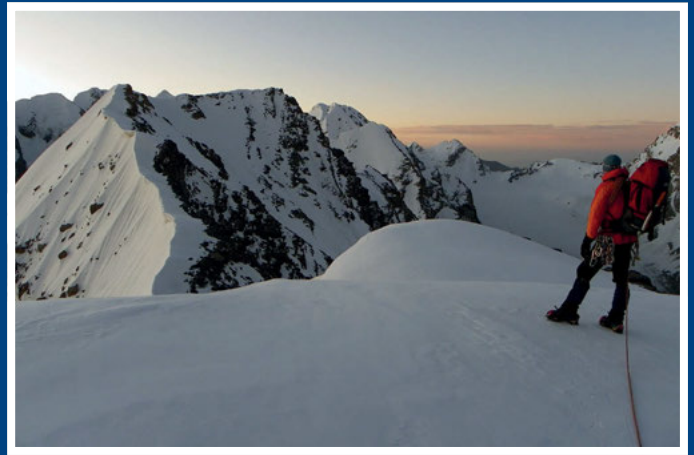
Mountaineers from the QDG completing an early ascent on the NW flank of the Weissmies at 4017m



The beauty of the scene, with the summit of Himlung (7126 m) on the far left, belies the bitterness of the wind, which had reduced temperatures to well below -30 Celsius



View from Sheshone Point down the Grand Canyon



The mighty and majestic Monte Pelmo, from Alta Via Route 1, Dolomites



Exercise

ILLIMANI SUNRISE 2012

By OCdt Ryan Baker and Maj John Tolan

In August 2012 a team of nine OCdts from East Midlands UOTC, led by OCdt Joe Holt ventured to Bolivia for Ex Illimani Sunrise, a demanding high-altitude expedition which aimed to develop the team's alpine mountaineering skills climbing a series of peaks culminating with Nevado Illimani at 6350m, the highest mountain in the Cordillera Real.

The team mustered at base in Nottingham where kit was issued and packed ready for our long but smooth flight to La Paz via Miami. We arrived early in the morning and moved in to Hotel Fuentes, our base point for the duration of our time in Bolivia. The effects of being at altitude were immediate and even the task of carrying kit up flights of stairs became difficult. This however was strategic; by spending our time prior to the mountain phases at 3,600m we were straight into acclimatising.

The day after our arrival we were met by our Bolivian Navy Liaison Officer Lt Marcelo Gutierrez, who provided local assistance in La Paz and during our visit to Lake Titicaca.

Our acclimatization phase began with day walks in around the "Moon Allay" and the Isla del Sol on Lake Titicaca – the highest navigable lake in the world. Here we were also welcomed by Lt Gutierrez's Bolivian Navy Unit who gave us a short presentation on their work patrolling the Peruvian-Bolivian border which bisects the lake.

Summit of Illimani

Next we moved to the Condoriri Massif, our first foray into the impressive mountains which Bolivia is famous for. Here we met Captain Eric Gutierrez, the Bolivian Army's senior mountaineering instructor who would be with us for the remainder of the expedition. Llamas were used to transport our kit to basecamp at Laguna Chiar Khota from where we could gaze up at the 'Head of the Condor' and its impressive 'wings'. After a hearty meal prepared by our chef Nemesio we all got a good night's rest. In the following days we climbed Pico Austria 5100m then conducted Alpine Mountain Proficiency (AMF) training covering glacial skills, use of axe & crampons, rope techniques, avalanche risk and snow pack analysis, roped travel and crevasse rescue. We were now ready to climb our first alpine ascent. Next a 2am torchlit start gave us plenty of time ascend the glacier to reach the summit of Pico Tarija (5,225m) which afforded us spectacular views of the Amazon basin

to the East and out towards the Atlantic basin in the West. The Condoriri area training now complete, we headed back to La Paz to prepare for our next objective, Huayna Potosi.

After a rest and admin day in La Paz, we were back in the mountains at Laguna Zongo base camp (4,750m) to prepare for Huayna Potosi, our first taste of climbing above 6,000m. Bad weather forced us to shelter at the refuge for 24 hours before starting our ascent and meant we had to make it to the summit in one push rather than the standard overnight at high camp. A 1am start, plenty of grit and determination and several hours of navigating through crevasse fields later, we were stood at the summit atop the exposed ridge and feeling on top of the world. The summit was an airy 6076m high. We then made a careful retreat in worsening weather all the way back down to the base camp at 4600m and returned to La Paz.

Back in La Paz, the team took a days break to face the challenge of cycling the infamous Death Road. Fortunately, no-one met their end here though there were a few near misses! Now in La Paz, the main challenge of the expedition, Illimani at 6350m loomed over us - as it does for those who live in La Paz, and we soon found ourselves heading up a dirt road into the remote villages at the base of Illimani, ready to tackle the challenge with the skills gained on our previous peaks. A gentle walk-in took us to the base camp at 4,500m, followed the day after by a long and at times precarious move via rock slabs up to the 'Nest of the Condors' high camp at 5,500m. We planned a 2am start, but a night storm caused us to delay our departure until 5am. Thankfully the storm abated and we were able to start our ascent. The route climbed along a narrow ridge to start with, then wove through crevasses up some fairly broad slopes to the summit ridge at about 6000m. Here, the whaleback ridge rose to the right and we slowly made our way in the rarefied air with the sun now well risen to the south summit the highest of Illimani's three peaks. It had been extremely hard work and was a moment for us all to savour as we reflected on our journey up to this point and the incredible views we were now rewarded with. The descent was tiring as we had to clear our high camp and make our way just as night fell to base camp.

Our final few days in Bolivia were spent on a R&R package which took in the sights of the Uyuni salt flats and the Amazonian rainforest where we spent two days exploring national parks and learn-

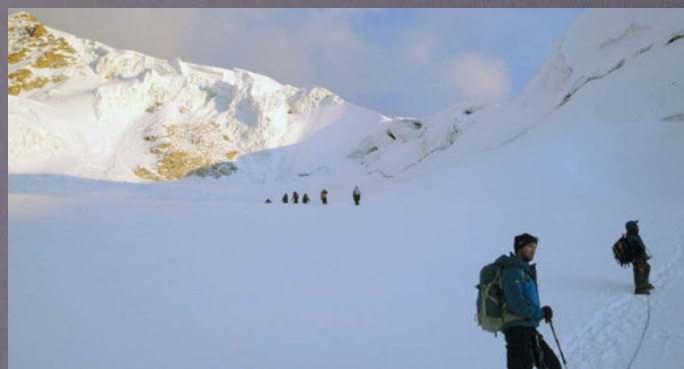
Rope teams ascending Huayna Potosi – Photo Joe Holt



ing about the local culture, before white-water rafting down the Esperito Santo River and heading back to La Paz to board our flight home.

On behalf of EMUOTC we would like to thank all those who supported us in this endeavour, financially the Ulysses Trust and AMA and those who through their vast amount of experience helped in planning this arduous expedition. We would also like to give special thanks to the Bolivian Army & Navy for the immense support and camaraderie they provided us; we hope we can return the favour sometime in the future. Also to our army instructor Maj Tolan whose wealth of experience and instruction enabled the team to obtain and develop vital mountaineering skills and learn just how far they could push themselves to overcome daunting obstacles. Further, excellent team cohesion has forged strong links within the unit which has laid the foundation for further challenging mountaineering expeditions to be led in South America for new recruits and to extend the adventurous spirit within EMUOTC.

Team on Tarija Summit 5250m. L-R OCdts Hole, Weezer, Holt, Baker, Piekarski, Byrd, Marsden, Andrews, Aynsley-Smyth, Capt Gutierrez, Maj Tolan.



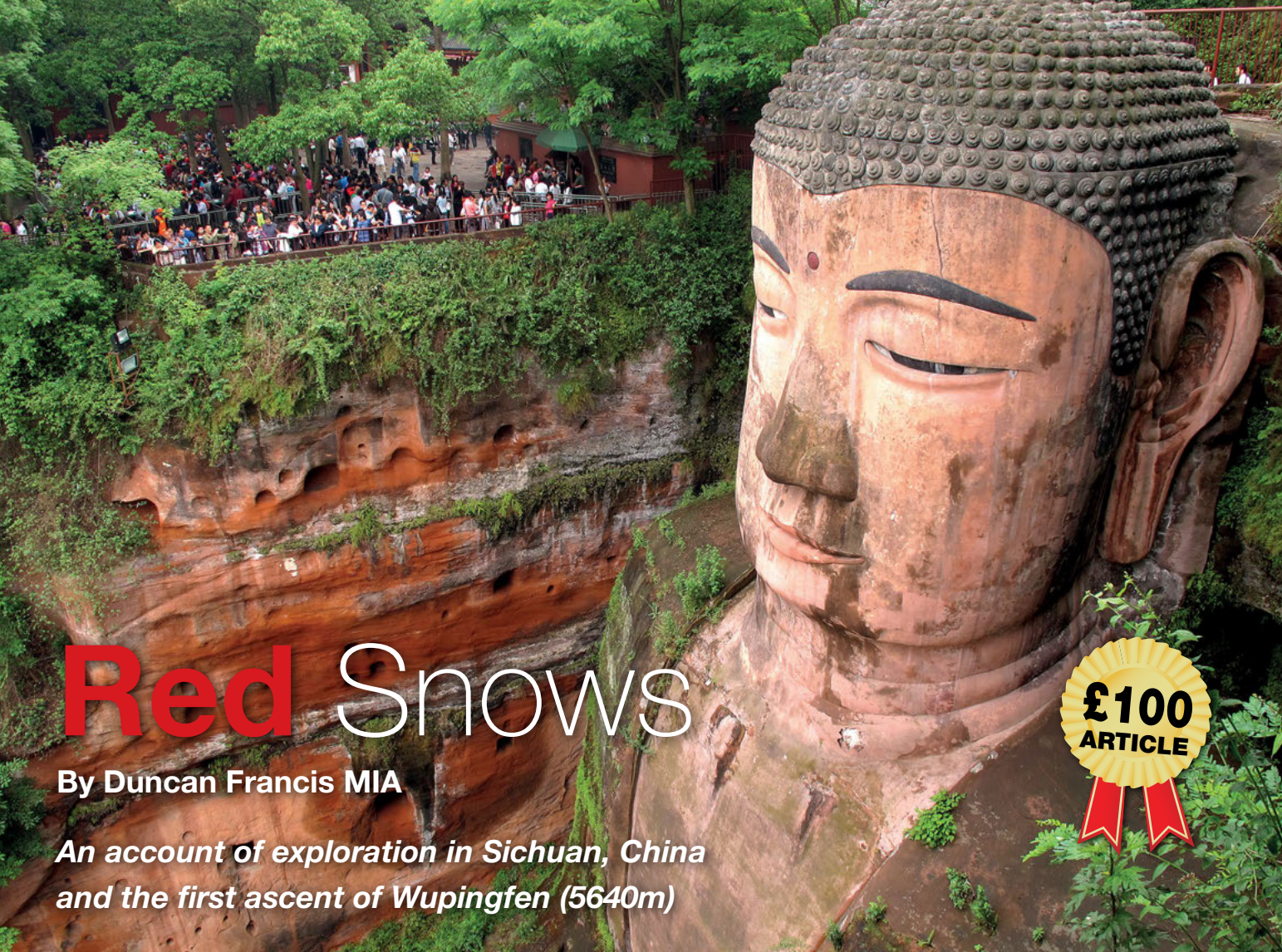
OCdt Jon Piekarski and Mountain Guide Juan Villaroel on Huayna Potosi – Photo Joe Holt



Team descending Pico Austria – Photo Joe Holt



OCdt Holt during the ascent of Huayna Potosi – Photo Jon Piekarski



Red Snows

By Duncan Francis MIA

An account of exploration in Sichuan, China and the first ascent of Wupingfen (5640m)



The Big Buddha near Chengdu. It's REALLY BIG!

One of the advantages of living in China is that it gives you access to a lot of unclimbed, indeed unattempted, peaks. Which is how I found myself halfway up an unclimbed mountain in Sichuan. Unfortunately, the AMA hadn't been interested, so I was with three guys from RAFMA, but then you can't have everything. A very helpful Japanese photographer called Nakamura logged all the virgin peaks in China, and one of them, Baihaizishan (5924m) in a range near Kangding had sounded good, so we had come to try and climb it. The highest summit, Lamoshe (6070m), and one other peak had been climbed, while Baihaizishan itself had had one attempt by the late Yan Dongdong in 2010 (turned back by avalanches), but the rest of the range was completely unexplored. And not just by foreigners; as we found once we arrived,

even the local yak herders themselves had not ventured beyond the highest alps.

These things are never that easy, so we hired a local fixer called Lenny, and he smoothed the way and hired a Tibetan cook called Banju. The six of us, plus a pile of gear needed twelve horses to get up to basecamp (3900m), but the camp was comfortable, the weather was great, the yaks were numerous, the juniper plentiful and the mountains were pristine, so all seemed well with the world.

Our original plan was to go straight up the inviting and challenging West face. But arrival at basecamp provided a reality check. The face was beset by hanging glaciers, hidden from below, which blocked almost all access to the upper slopes. And the thing about Sichuan in winter is that it is not only extremely cold, but also very dry. No snow had fallen since September, so there was ice, but little else. And what snow there was, was in shockingly bad condition. Indeed, it was just aerated sugar, peeling off the slabs of shattered granite with great whoomps. So that was that plan stoofered. Time for Plan B.

We turned instead to the NW ridge, a spiky crest of rock rising up towards a subsidiary snow summit well to the NW of the main summit. It looked easy; up the rocks, traverse across the upper snowfield onto the summit ridge, and Bob's your uncle. So we acclimatized with a bit of exploration, set up ABC in a small col at 4400m, shifted up some loads, packed up enough for a three day trip, and set off up the unknown, unclimbed ridge. The yak herders assured us that no-one had ever been up there. Why would they?

The ridge was amazing; scrambling and climbing like Skye in Winter [well, without the rain obviously], but all at over 4000m, with



Simon high on the NW ridge of Baihaizishan. Unexplored ridge climbing at its very best



The team at a shrine North of Kangding: After the ascent. The team at a Tibetan Buddhist shrine North of Kangding. Alex, Simon, Rimon and Duncan



Simon at Camp 1 on Baihaizishan. The attempt ended just below the very highest rocks above the tent



Sunset at ABC: Duncan enjoying the sun setting over Tibet at ABC (4400m)



Prayer wheels. An old Tibetan woman walks the kora and spins the prayer wheels at a remote Buddhist monastery in Western Sichuan.

pinnacles, knife-edge crests, snowfields and a series of seeming dead-ends which always provided a way onwards just when we thought we couldn't go any further. It seemed a genuine privilege to be up here in this unexplored wilderness, with the wild, tangled summits of Western Sichuan and Tibet and the peaks of the fabled Minya Konka range gradually coming into view as we ascended. We dug out small snow platforms for Camp 1 just below the ridge at about 5300m, sheltered from the increasingly strong winds, melted the sugary snow for water, ate the freeze-dried rations with little relish, and then the next morning, set out for the summit.

A lot of effort, rice and yak butter tea later, we were brought to a grinding halt at about 5500m by a gaping cleft in the ridge, hidden from below. Overhanging rocks ahead and to the right, and sugary, useless snow on steep slabs to the left put an end to our hopes. Such is the reality of exploratory mountaineering! No way around. Bummer. So we turned back, regrouped in basecamp, in the freezing fog that rolled up from the valleys (it was minus 22 degrees at night; chilly!) and thought about what else we could do. There was another peak called Wupingfen just next door, and it was unclimbed as well. So that might be a goer. Assuming that we could actually get to it. Our early explorations had shown how broken and difficult these slopes were, making it very difficult to get from one part of the range to another.

The problem was traversing through the scree fields of house-sized boulders and forests of mini azaleas that guarded its flanks. But we managed that, found a way through the precipitous cliffs beyond by a system of ledges and a Scottish Grade III gully, then up and through the moraines above, and the glaciers after that, and found ourselves again in an area that no-one had ever been to. Not just no Westerners; no anyone! It was great. Just us and the Himalayan

partridges. So we camped below a massive moraine, climbed the icefall behind, traversed some frozen lakes, more moraines, and fields of glacial slabs streaked like marble and covered in boulders. Then we got up onto the glacier beyond, traversed the snow-covered slopes littered with crevasses and the debris from the seracs high up on the flanks of Wupingfen on the right, dug out some platforms for Camp 2 from the ice in a bergschrund at about 5400m, and the next morning set off in a howling gale.

The ridge was fantastic; finally we were climbing on rock-hard neve and ice. Sometimes we roped, sometimes we soloed. We needed pegs and ice-screws for a couple of bits, which made carrying them all the way up there much more worthwhile. As we broke out onto the final ridge, we met the full force of the winds, but the views and the unclimbed summit more than made up for it.

The rest is anti-climax really; took the photos, got down, and got back all in one piece. Discovered that the peak is 5640m high. Had a few gallons more yak butter tea, and tons of tsampa. Finished off the yak meat. Whistled up the horses, walked out, had a longed for bathe in the hot springs [including a massage and scrub-down from a naked Tibetan horse-wrangler; not for the faint-hearted], had a look around some Buddhist monasteries, shrines and ethnic-Tibetan villages. Drove back to Chengdu and saw the Big Buddha (its REALLY BIG). Now it's back to work and reality.

And my wife? Well, she could have come and made basecamp more attractive, but she got a better offer, and went off to go and stay with some friends in Japan who have toilet seats with hot and cold air jets and running water. But she loved the photos.

Exercise

BOLIVIAN

VENTURE

By Maj H Pynn



Maj Pynn atop the summit of Chachakumani

Bolivian Venture was the fourth in a series of Defence Medical Services scientific high altitude research expeditions, on this occasion led by Surgeon Commander Adrian Mellor. The team deployed to the Cordillera Andes in Bolivia for three weeks with the dual aim of providing high quality adventurous training and carrying out medical research into high altitude adaptation. The 60 strong expedition party was split into two teams who overlapped in country for a short period but independently followed an identical itinerary and ascent profile. Expedition personnel were predominantly drawn from the Defence Medical Services and represented rank ranged from Private Soldier to OF5 and a range of medical specialities including physiotherapists, nurses, dentists, RN Medical Assistants, Combat Medical Technicians and doctors (including medical students, those in higher training and consultants). For the first 10 days of the expedition, participants measured their heart rate, blood pressure and other physiological parameters twice daily with more invasive investigations such as blood tests and echocardiography conducted at less frequent intervals. In total 2500 blood, 300 urine and 600 saliva samples were collected and transported by cold chain back to Newcastle for analysis and over 300 echocardiograms were performed, many in austere conditions at altitude. As well as military personnel, the expedition used two UIAGM qualified Bolivian guides and one locally qualified aspirant UIAGM guide throughout the expedition and the in country logistics were provided as a bespoke package by Bolivian Mountains.

Team 1 departed Heathrow for La Paz on 25th May enduring a 36 hour flight via Madrid and Miami to reach the highest capital city in the world (alt 3800m) where most suffered with a degree of AMS especially during sleep where many were woken by a Cheyne Stoking room mate.

The first couple of days were spent in La Paz with twice daily physiological measurement sessions. Signs and symptoms of Acute Mountain Sickness were documented using two scoring systems. The team rested, prepped and divided up kit and many took the opportunity to explore a fascinating capital city. Further acclima-

tisation and research took place in the resort of Copacabana on the shores of Lake Titikaka. The bus dropped off the team a few kilometres outside town to enable further acclimatisation to take place as the team skirted the Peruvian border. After a good nights rest, a boat trip to the Isla de la Luna (the Island of the Moon) was taken with a walk across the island made famous by the earliest Inca settlers. The team then headed back to La Paz for the last two nights in a bed prior to heading to the mountains.

It was with great excitement that the team finally left for the mountain phase in the Cordillera Real range in the Altiplano region east of La Paz where the team were dropped off about 3 hours walk away from the road head camp. As the team approached the summit of the first hill we caught sight of the area that would be our home for the next two weeks. The main valley, whilst geographically not particularly remote, had never been visited by a western expedition and as such many of the peaks are unclimbed and unnamed. Two nights were spent at the road head (Fig 1). During the days, small groups made acclimatisation walks exploring the surrounding ridge line, climbing up easy scree-covered slopes to 4800m. Standing in 20 degrees celsius at the height of Mont Blanc with surrounding towering peaks only served to reiterate how much bigger these mountains are than anything in Europe.

Base camp was a 5 hour trek along a beautiful valley populated by llama, alpacas and wild boar. Donkeys and local Bolivians portered the research and climbing equipment. The camp was set in a hanging valley on a flat area of grass about the size of a football pitch surrounded by the moraine from retreating glaciers (Fig 2). Keen rock climbers spent hours bouldering whilst others bathed in the stream running through the middle of the camp, deep enough in parts to plunge.

For the final research phase, the team left the comfort of base camp and moved to high camp at 5200m at the foot of the glacier. There were few flat areas in the moraine field so the team huddled 3 to a 2 man tent. It was cold and uncomfortable! The altitude had



First view of Road Head Camp with Chachakumani in the distance

affected a few overnight – puffy eyes and headaches. The research phase completed, it was time to attempt the mountains and so half of the team stayed to tackle Mount Chachakumani (6039m) with an early rise of 0200 whilst the other half went down the mountain to attempt Pata Patani (5450m) from base camp.

Those who stayed to attempt Chachakumani woke up at 0100 and had a few mugs of mate de coca to warm up. Crampons and harnesses were donned and four teams roped up and left up the glacier at 0200. Unfortunately some team members' boots were not sufficiently warm and teams started to turn back in order to prevent cold injuries developing. Two of the four ropes, led by local Bolivian guides summited soon after sunrise. The altitude could really be felt, each step of the final summit push a struggle.

After photo opportunities and a quick snack on the sharp summit arête, ropes descended quickly, exhausted, down to base camp. The ten team members who had descended and attempted Pata Patani all succeeded in conquering it via a previously unclimbed ridge after an 8 hour day.

The culmination of the Diamond Jubilee celebrations in the UK coincided with a rest day for the whole of Team 1 and the arrival of Team 2 in La Paz. A night of festivities in the

mess tent celebrated the occasion with a Diamond Jubilee dinner, speeches, fines, port, champagne and sang God Save the Queen. The porters thought the team rather odd! Fit Lt Bonnie Posselt had cleverly brought Union Flag bunting out in her bag - we felt like we were back at home! The following day, some team members returned to high camp to climb Chachakumani. Others left base camp to recon other routes to previously unclimbed peaks. Plans were hatched to return the next day with a forward base camp and attempt to fly the RAF ensign at the top of the peaks.

Unfortunately six inches of unseasonal snow fell overnight and all woke to a whiteout preventing any further climbing due to avalanche risk. Those who had ascended to high camp order to climb Chachakumani walked around on the glacier but returned to base camp to meet up with the rest of the group. A mammoth snow man was built to guard the mess tent and many card games were played. The snow fall abruptly brought the mountain phase to a premature end.

As Team 1 made their way back to the road head with the snow melting as fast as it had fallen, they crossed paths and exchanged vital mountain equipment with an excited Team 2 who had arrived from La Paz having followed a similar acclimatisation and research phase. Team 1 travelled down to Coroico (via La Paz) in thick rain-forest some 2500m lower than La Paz on the edge of the Amazon basin. Fourteen of the team took up the option of cycling down the world's most dangerous road (made more famous by features on



Base Camp set in the hanging valley

Top Gear) for 63 km with spectacular drop-offs and amazing scenery. All survived and thoroughly enjoyed the experience. Sadly not everyone survived the local cuisine from the hotel in Coroico and many started the long road home with D or V, or a combination of both! The realities of travel...

It was a fabulous 3 week expedition with a significant number of participants gaining AT awards (summer, winter mountaineering and rock climbing foundations).

Team 2 arrived in Bolivia excitedly having partied away the Diamond Jubilee weekend and having read of the exploits of Team 1 on the blog. A similar itinerary to that of Team 1 was followed with research followed by mountaineering phases.

The team gelled quickly into a close knit unit. Team bonding exercises were in abundance none more chilling than the dip off the boat back from Sun Island on Lake Titicaca where Team 2 resembled a group of lemmings plunging into the icy waters.

The trip to the mountain phase was greeted with excitement after several pleasant evenings out exploring the delights La Paz had to offer and we briefly met a jaded and bearded (not all!) Team 1, hastily grabbing extra warm kit and useful information on the hills to come.

The team moved from the road head to base camp and on to high camp with little evidence of the snow that curtailed Team 1 other than the the now skinny little snow man guarding the mess tent. The first wave of attempts of Chachakumani would leave straight from high camp so the ropes were assembled based on those who had acclimatised best.

Chachakumani's 900 metres of vertical ascent was all completed on the glacier, this being the first opportunity to get crampons on in this environment for a number of the team. Whilst not highly technically demanding, it proved itself to be a challenge for even the more experienced group members. Deep soft snow made the going tough for the lead ropes and proved a long slog and some hidden crevasses meant there were a few morale-sapping descents before reaching the summit. The rewards were spectacular views at the summit, a narrow and exposed ridge. A second wave of teams also summited a couple of days later benefiting from the tracks and navigational information left by the first groups.

Pata Patani was a rocky ridge line which provided numerous sections of fun scrambling, a few with some significant exposure. Every member of Team 2 summited the mountain, with ropes again led by a combination of qualified expedition personnel and local Bolivian guides.

With the main objectives complete attentions turned to some of the unclimbed peaks surrounding base camp. A number of the rocky



A rope huddled at the foot of the final summit push

ridges were climbed for the first time. Unfortunately questions whether the true summit was reached may put paid to attempts to name 'Jubilee Peak'. There were also two attempts on Jackocire led by Sqn Ldr Percival accompanied by willing volunteers with the Eastern and Western peaks achieved but not the highest central peak due to time limitations to cross technical terrain in daylight. The dominating snow face towering above the end of the valley was attempted by a rope led by Surg Cmdr Brown but this ended in turning back due to a highly unstable snow pack just shy of the summit. Unfortunately further exploration was curtailed by the impending Solstice weekend local celebrations and it was decided to make for La Paz before the local porters became too indulged in their local fire water.

There was time for a couple days R&R and following Team 1's lead, all opted to cycle down the world's most dangerous road followed by joining the locals in their Solstice celebrations that resulted in impromptu firework displays that would have raised eyebrows with health and safety aficionados. The long journey home was made

more bearable by reflecting on a fantastically well organised and fulfilling trip to a beautiful and remote area of the Andes.

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| | |
|--------------------|-----------------------------|
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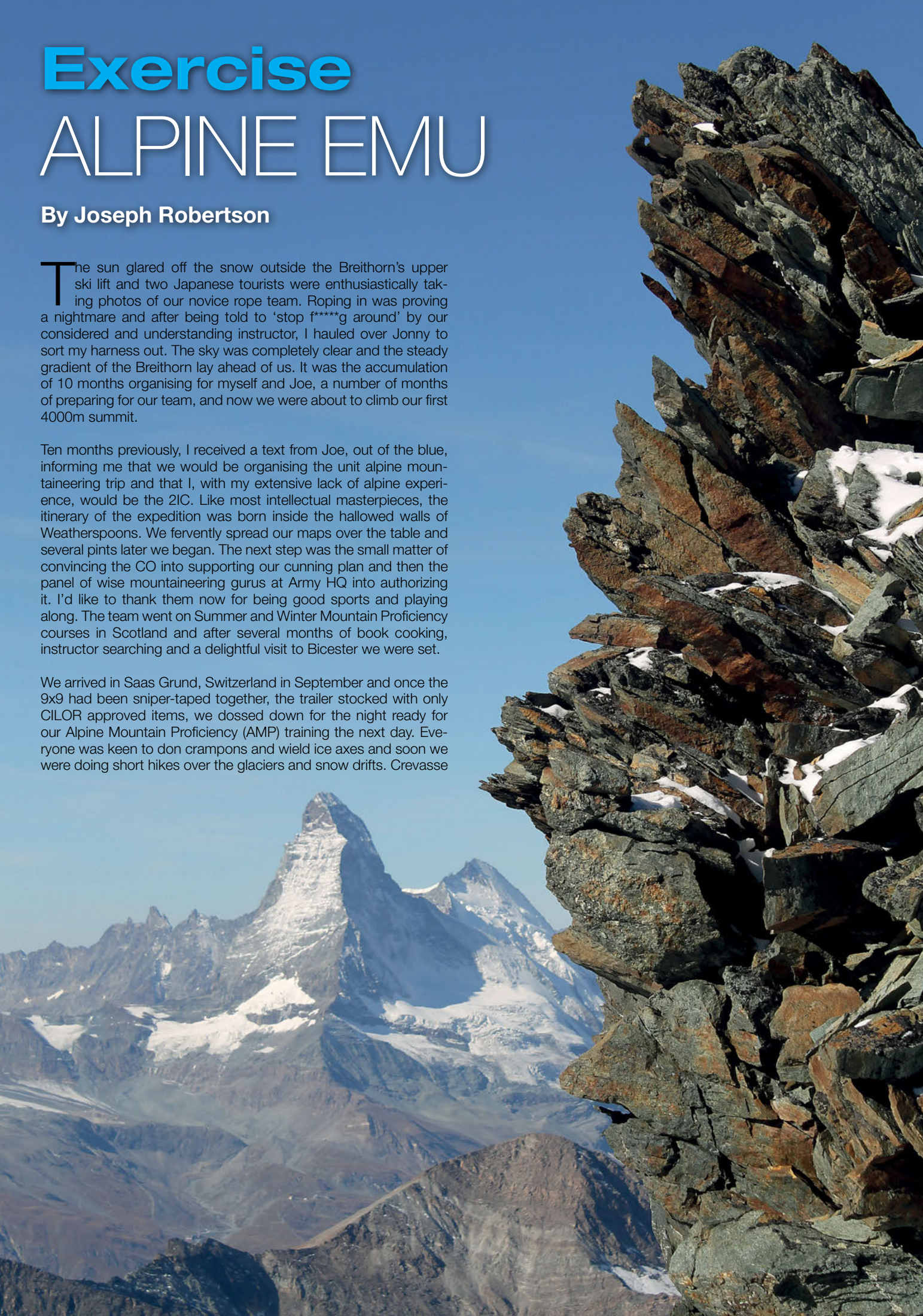
ALPINE EMU

By Joseph Robertson

The sun glared off the snow outside the Breithorn's upper ski lift and two Japanese tourists were enthusiastically taking photos of our novice rope team. Roping in was proving a nightmare and after being told to 'stop f*****g around' by our considered and understanding instructor, I hauled over Jonny to sort my harness out. The sky was completely clear and the steady gradient of the Breithorn lay ahead of us. It was the accumulation of 10 months organising for myself and Joe, a number of months of preparing for our team, and now we were about to climb our first 4000m summit.

Ten months previously, I received a text from Joe, out of the blue, informing me that we would be organising the unit alpine mountaineering trip and that I, with my extensive lack of alpine experience, would be the 2IC. Like most intellectual masterpieces, the itinerary of the expedition was born inside the hallowed walls of Weatherspoons. We fervently spread our maps over the table and several pints later we began. The next step was the small matter of convincing the CO into supporting our cunning plan and then the panel of wise mountaineering gurus at Army HQ into authorizing it. I'd like to thank them now for being good sports and playing along. The team went on Summer and Winter Mountain Proficiency courses in Scotland and after several months of book cooking, instructor searching and a delightful visit to Bicester we were set.

We arrived in Saas Grund, Switzerland in September and once the 9x9 had been sniper-taped together, the trailer stocked with only CILOR approved items, we dossed down for the night ready for our Alpine Mountain Proficiency (AMP) training the next day. Everyone was keen to don crampons and wield ice axes and soon we were doing short hikes over the glaciers and snow drifts. Crevasse



rescue training was an exciting start and afterwards I felt reasonably confident that if I was ever to fall into a crevasse, with this lot, my chances of rescue would be negligible. Next we tried the ice axe arrest. Performed upside down and on your back like an incapacitated beetle, you would slide headfirst down an icy slope, try to spin around and over and slowly force a stop with your ice axe tip. If it sounds challenging, it is. We also experienced a slight blizzard and for those unaccustomed to the sheer power of mountain climes, this brief introduction to the darker side of alpine weather instilled in us some small degree of respect for our environment.

AMP completed, we drove to Zermatt to climb the Breithorn. The weather could not have been more suited to a first climb and we began the hike up to the summit ridge. The heat from the sun, beating down and reflected by the snow, was surprising and this being our first exposure to 4000 metres, the altitude quickly got us blowing hard. Reaching the ridge, we were buffeted by the wind. Visibility was excellent and to the south we could see far into Italy; to the East the Monte Rosa plateau and to the West the infamous, hooked Matterhorn. We spent the afternoon in a Biergarten in Zermatt, a fitting end to an encouraging first day on the mountain.

Next up was a day of Via Ferratta on a Swiss valley side. Clipped on to a series of steel cables, this natural aerial confidence course proved a bigger challenge than anticipated. Grasping midway up a 300ft smooth, vertical cliff one rope team member called to us over his shoulder, "If my mum knew what I was doing now...". One near self-assisted rescue later, some cliffside heroics and a lot of grunting, the group made it to the top and finish of an experience that certainly ticked off a number of the adventurous training objectives.

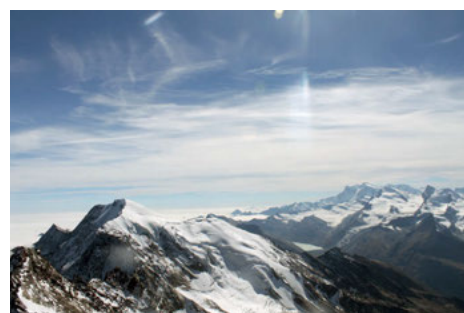
To do our every summit justice would take far more than my allocated word allowance but three particular days stand vivid in my memory. The first is the ascent of the Jagihorn and neighbouring Fletschhorn. They stand as twins; brown, snowless and serrated triangular points. The climb was a mix of scrambles, gullies, traverses and iron ladders. Our lunch of rolls and 'Baby-Bells' was on a 4 foot ledge, feet dangling over the lip into empty space and breeze, hundreds of feet above the valley floor. The day stands out because it was just good, plain fun; working through the potential footholds, the height and unnerving exposure, the satisfaction on reaching the crucifix standing at the summit.

The next memory was the ascent of the Lagginhorn (4010m). Crampons scraped over scree, boulders and ice and the climb initially was a similar affair to that of the Jagihorn. The real climax however was the last 30 metres and summit. After working hard up the rocky gullies our wind-proofs had been stashed away and on reaching the final snow slope a cold and piercing wind blasted over the crest. Sweaty base layers turned to what felt like icy vests and body temperatures began to drop. My fingers tips faded to blue and went from numb to throbbing. Nevertheless, despite the haste to take the obligatory group photos at the summit and get into back into shelter, the view was like nothing I had seen before. Stretched out below us were the Italian Alps, shrinking into the Aosta Valley and Piedmonte. A ceiling of low choppy cloud lay over the many glacial valleys and white topped ridges, perforated only by small dark islands of rock. Way above in the dark blue were streaks of cirrus cloud. It reminded me of those views you get out of airliner windows but what made it special was that we arrived at this spectacle by our own endeavour. We had climbed to this level; we had earned this view.

Reflecting on this 3 week expedition, the personal high point was the ascent of the Alphubel. A short walk from the top of Saas Fee's underground rail station we began our hike up to the Allalinhorn-Alphubel saddle. On a precarious crevasse crossing below a looming snow cliff, a French guide overtook our rope team, swearing as he marched past, dragging his team of despondent, inadequately dressed tourists behind him. We turned right up the saddle and began our scrambling traverse of the Feechopf; a narrow, saw-toothed ridge of splintered rock that runs up to the final climb to the Alphubel summit. You cling to the rocks, conscious of the hypnotic level of exposure and the staggering backdrop to your climb. Once we got back onto snowier, flatter ground, a quick walk brought us to the base of the steep incline leading to the summit. We began the ascent, digging our crampon points into the ice and moving in that strange lateral chicken walk. As the slope steepened, progress slowed and altitude induced panting began. Eventually the gradient proved too steep for two points of contact and we started to swing our ice axes and drive our front crampon points directly into snow. It was some of the best fun I had over the trip and felt like proper, adrenaline fired mountaineering; ice axing our way up a Swiss mountain. Summit photos taken, the descent found us set to miss the last cable car of the day down to Saas-Fee. Not to worry though, flexibility and initiative is the name of the game; we would take that short-cut through the crevasse field. An hour later we concluded that trying to bluff our way across a fractured and yawning glacier was probably a poor decision after Nia disappeared into a fissure for the second time in the space of 30 metres. It also turned out that crevasse rescues do not require elaborate rigging and pulley systems. Instead, the rope team just keeps walking and the unfortunate mountaineer eventually gets dragged out unceremoniously. Several u-turns, a bit of crevasse jumping and a lengthy descent later, we arrived back at our minibus.

The final phase of the trip saw us drive to Chamonix for an attempt at Mont Blanc, which was for the expedition team at least, their main objective. Supplies were replenished, kit prepped and mountain hut bookings confirmed. I accompanied our guide as he went to check out the latest weather report at the guide's office. It wasn't good news. The forecast promised snow, whiteouts and 100kph winds on the Massif. The Aiguille du Midi gondola would also be shutting down. There would be no summit attempt. Disappointment within the team was evident but a naïve sentiment of "I don't care if it's a super hurricane up there, I still want a crack" persisted. However, when the front hit in the early morning, rain and wind assaulting our flimsy tent down in the valley, I have never been so glad to be in shelter.

The failure to summit Mont Blanc was a blow to the group but looking back on it I don't feel the same the frustration as I did at the time. George Mallory visited Everest twice before his third and final 1924 expedition. Failed attempts had infused in him an exhaustive passion for the mountain and he eventually paid the ultimate price for a summit bid. Inspiration is stronger, I believe, when a mountain is elusive and untamed, than a mere memory of a past conquest. Ex Alpine Emu has given the team the skills to pursue their own mountaineering ambitions, but leaving them with a lasting image of a mountain yet to be climbed. I for one will be back to try Mont Blanc and one day the Matterhorn too. And in that we have achieved our aim; to foster those qualities integral to good soldiers and planting the seed corn of future mountaineers.



Exercise

COCKNEY ALTA VIA 15 – 26 Sept 2012

By Major Paul Green

The Dolomites may not be the largest mountain range in Europe and nor are their mountains massive when compared to the giants of neighbouring Austria and Switzerland but they have a beauty, variety and uniqueness that is almost unrivalled. So it was on the evening of Friday 14 September, that the group assembled at a TA Centre in Kingston Upon Thames where kit was issued and briefings were delivered before the group retired to the bar with talk of the great adventure that was to follow the next day.

256 (City of London) Field Hospital (Volunteers) annual summer mountaineering expedition was to trek along the Alta Via Route 1 with an aim of completing the route in nine days as opposed to the usual eleven, carrying all kit and equipment and staying overnight in mountain refuges (Rifugio). AV1 is a linear 150km high level footpath running north to south through the Eastern Dolomites, set in some of the most stunning and spectacular scenery in the world. It is a particularly challenging route as it is at altitude, largely above 2000m. It is also famous as it is a region of several Via Ferrates (Iron Way Routes) from WW1 and much evidence of that conflict could be seen.

The team consisted of 13 members of 256 Field Hospital and an extra Mountain Leader, Maj Ian Helmrich from 3 Medical Regt; ranging in rank from LCpl to Major and ages from mid-twenties to late fifties. The team had a varied breadth of mountaineering experience and in their civilian lives covered all aspects of NHS

healthcare with medics, a nurse, physiotherapist, environmental health officers, radiographer and doctors.

By lunchtime on Saturday 15th September, we had arrived at Innsbruck courtesy of Easyjet and took a privately hired coach for the two hour drive to a drop off point just short of our first nights' accommodation at Rifugio Vallandro, in the Dolomites which, shares the same site with a WW1 Austrian fort. SSgt Kev Robinson who, in the winter, is a ski guide and resort manager in St Anton, organised the transport through a deal with a private coach firm which saved a considerable amount of time over public transport and from leaving the TA Centre in the morning it was almost a seamless and effortless travel experience.

All were surprised by the affect of altitude; travelling from almost sea level that morning to 2040m in the evening had everyone puffing after a little physical exertion during a short stroll to Rif Vallandro, from the coach drop off point. The Rifugio lived up to its reputation of being one of the best privately run rifugio with its good accommodation and food in this heavily German influenced part of the Dolomites. The views to be seen that evening were incredible.

The start point from Rif Vallandro was the only deviation from the official AV1 route which traditionally starts at a hotel by the lake of Lago di Braiese, near the town of Dobbiaco. Starting from Rif Vallandro, located on another long distance footpath route AV3, made



Monte Pelmo



Group about to enter the Dolomites

for a much longer, memorable and rewarding start to the first days walking with fine views of the Cristallo Massif on leaving the Rifugio. It also avoided a very steep climb and public transport to the hotel from Dobbiaco. Henry Stedman, the author of one of our reference and guide books, also wrote of the route from Rif Vallandro to Rif Biella as being, 'For many, this is the best walk in the Dolomites'. One short section of the route had cables attached to the face of a cliff on a long steep traverse otherwise it was steady and undulating. En route was a fuel tank jettisoned by a P51 Mustang, during WW2.

From Rif Biella, close to Rif Sennes, four members of the group, under the watchful eye of Maj Raj Nathwani, took a two hour detour to climb the peak of Croda del Becco (2810m), while the remainder descended past Rif Biella to overnight at Rif Sennes. The climb up Croda was a tough ascent on the first day whilst still acclimatising to the altitude, especially as this was the highest point on the trek. However once at the top, the views were amazing and the detour had been well worth it.

Rif Sennes was friendly and hospitable and on arrival LCpl Mike Cattermole led stretching classes for the group and started a press-up competition with Raj Nathwani. The first casualty occurred at the Rif when one of the doctors cut his face on a disposable razor. He left the razor handle in the UK taking only the blade head hoping to save on weight and space. Obviously he had taken the kit packing lessons too far!

Monday 17th September was a straight forward and much shorter walking day of only five hours walked on easy paths and on four wheeled drive tracks. This was welcomed by the group and gave the JSME's, Major's Raj Nathwani and Ian Helmrich an opportunity to deliver some tuition on rope work, mountain medicine and rescue in the afternoon. During the evening from our accommodation at Rif Lavarella, we watched Italian helicopter borne troops deploying from Agusta-Bell Huey's and taking up all round defense on a neighboring rifugio, 500m away. It was very unexpected to see this activity and Huey's still being used by modern armies in the 21st century. The Rifugio provided excellent accommodation that was clean and modern which served up large plates of goulash and strudel, to satisfy the keenest of appetites.

Tuesday was a fabulous trek in brilliant sunshine, with amazing scenery and views of the Dolomites' highest mountain, The Marmolada. An enthralling climb through the narrow mountain pass at Forcella del Lago at 2486m was then followed by a steep descent down a zigzag path. One of the group found the very steep and narrow path challenging but he confronted his fears and made it down successfully, albeit slowly and deliberately. This did raise the first seeds of doubts as to how he would manage on the trickier sections to come. At the bottom of this path were a group of Italian soldiers on training exercise and a Lt Col pointed out and explained the remains of an Italian logistics base from WW1, including a winching system that was used to bring up supplies from the valley below.

Approaching Rifugio Lagazuoi 2753m, on a steady but tiring climb there were a number of WW1 fortifications and mountain tunnel systems built by the Austrians to defend the pass against Italian attack. From the Rifugio, the group walked a short leg up to the highest point on AV1, to the cross at Piccolo Lagazuoi at 2778m, to take in the stunning views and to do more press ups!

All the group were in one room at this popular and now Italian influenced Rifugio and ear plugs were distributed to counter the effects of the snorers, of whom there were many! An early start was also planned as there were concerns about the weather deteriorating later with rain and possibly snow as temperatures were expected to drop significantly overnight.

On the morning of Wednesday 19th September, as predicted, it was cold, windy and gloomy with dark brooding skies. The route descended past the fortifications that had been passed on the previous day and then later onto a long traverse next to the face of the imposing Tofana de Rozes. On the traverse we watched a large herd of chamois. A stoat followed our group for about 500m ducking and diving directly parallel to the traverse perhaps thinking that where there were humans there was food. Marmots were less abundant than other areas of the Alps but then it is hard to burrow into rock!

However, it was on a section of a straightforward traverse that the group member who struggled with the steep descent on the previous day became increasingly worried and concerned. Raj Nathwani therefore had no option other than to clip him into a sling and karabiner and guide him until the ground leveled off.

Despite the gloom the scenery was awesome taking on another worldly appearance as we entered a large skiing area. With rain on the way, shelter was sought at Rif Dibona with coffee and strudel! As the rain eased we left the Rifugio and made a descent through a wood on a ridge line to a main road. But the rain returned which became a deluge and all views were obliterated leaving the group to trudge up through a muddy forest and onto Rif Averau. Thankfully, this Rifugio provided five star food and accommodation. It offered free and plentiful supplies of hot water and showers, clean sheets, white towels and fabulous food at a price comparable with the more basic and simple Rifugios. But German influences gave way to Italian and cometh our culinary nemesis, polenta (a ground corn meal). Polenta has an unusual consistency and an acquired taste and whilst it may be a staple for the Italians it has to be avoided at all costs, ask for pasta!

The next day it was -8°C at 0700 so the decision was made to relax in the Rifugio and have an extended sumptuous breakfast and wait for the day to warm up. By 0900 it breezy and sunny but -4°C when we left the Rifugio for the short walk up to Rif Nuvolau (2575m) to view the start of a via ferrate and a nerve jangling decent down ridge to a gully aided by fixed cables. Rif Nuvolau was run by an old boy who had climbed all fourteen 8000m peaks.

However, it was obvious that Big Jim was not going to go down the ridge. So whilst one group of seven donned their slings and harnesses the other group walked back to Averau and took an easier and less vertiginous route. In the end, the via ferrate was not as tricky as it had looked and both groups subsequently met at Rif Passo Giau, for one group to hear of the 'war stories on the ridge'. On leaving the rifugio a long traverse was negotiated followed by a steep climb to the col at Forcella Gaiu. A steady descent then led to Rif Citta di Fiume, at the base of the mighty Monte Pelmo. This is an incredible and captivating mountain standing proud and alone. Pleasing on the eye and more pleasing to know that it was first climbed by a Brit.

On Friday 21 September the group split again to take two different routes to the next Rifugio; Coldai. The original planned route, for all, the Monte Pelmo circuit was going to be too challenging so one group took an alternative route. The main route, the Monte Pelmo circuit, was a long and stunning walk with difficult and thrilling sections of ascent and descent and was arguably the best walking day

of the trip, although the day ended with a long and slow ascent to Rif Coldai.

The remainder of the group took a less challenging route but still climbed the same ascent to the Rifugio as the first group during which Maj Paul Green nearly stepped on a black adder which was sunning itself on a wide track. "It looked like a piece of old bicycle inner tube" he said in explanation, jumping out of his skin.

he next day was an early start as the walk combined two stages from the Cicerone guide book, 'Trekking in the Dolomites' into a long walking day of 20km. The first stage to Rif Vazollar was easy going and was only marred by overcast skies and mist in the morning that sadly obscured some of the best views. The second stage began with a steady descent on a gravel track followed by some steep climbs, over scree fields and along very narrow paths across two cols. On a steep section, cables had been fixed into the sides of a rock wall but this presented no difficulties for the group. It would have been difficult to get any closer to the rock face and soaring rock walls. Rifugio Carestiatto was almost brand new.

The penultimate day was another long two stage walking day of over 18km over some challenging terrain, with some scrambling and a knee shattering descent, under overcast skies. The first stage was straightforward to Rif Pramperet, walking along a road, and up through woodland. The second stage was significantly tougher with a long climb up a rocky path and over limestone slaps. Here the expedition leader encountered another, much larger, colourful and agitated viper who slithered away slowly hissing loudly.

The final climb involved some scrambling on a narrow ridge at Forcella de Zita Sud. A steep descent then zigzagged to the rifugio and to a much welcomed rest for the knees and where Capt Danny Smith our physio was kept busy. The accommodation at the Rifugio was a two-floor converted barn; simple and clean but without hot water. Food and service was very good at Rif Pian de Fontana which stayed open for an additional day just for our group before closing for the year. September is regarded as being one of the better months for walking in the Dolomites when the skies are clear and the crowds have gone home and we pushed late into the season at a time when some the the Rifugio are closing for the Winter.

The final leg of the expedition was a morning's walk on an AV1 variant (avoiding the long and treacherous via ferrate) down through a humid and damp cloud layer towards a main road and bus stop, at La Pissa. Unfortunately, the rain came obscuring any views and this walk became another knee crushing descent. An interesting section was a narrow path cut into a cliff face with a vertical drop on the open side.

After an hour's wait on the main road for the public bus to Belluno railway station and after several slick connections on the cheap and efficient Italian railways, we reached Venice Mestre railway station. After a short walk through the seedier part of town we reached the hotel Alle Lagune, in a quiet residential part of town. This proved to be a Godsend as it was convenient for Venice for RnR and for catching an airport bus to Marco Polo Airport for the easyJet flight home.

Overall, we had excellent trip without major incident. The whole group were able to complete the route though easier variations needed to be found for some.

Planning is now underway for next year's trip which is likely to be the route Chamonix to Zermatt but it will not be too long before the Unit returns to complete either AV2 or AV3 but this time during the first two weeks of September.

Thanks must go to the AMA for their help with funding the expedition without which it would not have been possible.



The Official Start of AV1 the hotel at Lago di Brais, seen from the peak of Croda del Becco



On the Peak of Croda del Becco L-R Maj Raj Nathwani, Maj Mark Judge, LCpl Mike Cattermole, Maj Paul Green to 3



The Descent from Forcella de Lago. L-R Maj Paul Green, Cpl Mark Swan, Maj Kurian Vithayathil, Capt Antonella De Rosa, Maj Ian Helmrich




The Cross of Piccolo Lagazuoi 2778m, the official high point

Exercise

INDIAN TIGER 2012

by Mike Jeavons



The view from Base Camp towards Shivling (L) and Meru Peak

India has much to offer for mountaineering expeditions. It has a vast array of peaks between 5500m and 7000m, many of which are unclimbed. India is also rich with mountaineering history. Shipton, Tilman and Smythe explored various areas of the Indian Himalaya and their stories are a must for anyone wanting to mountaineer there. This is our short story.

Ex INDIAN TIGER was the AMA's flagship exped for 2012 with the twin aims of climbing Peak 6565m, an unclimbed summit in the Garwhal Himalayas in India, and building a relationship with our Indian Army counterparts.

The travel to India and our arrival there was very smooth, helped in no small part by Lt Col Simon Colyer, the British High Commission's Military Attaché. We were whisked to our hotel where we finally met the Indian Team's OC (Maj "Jammy" Jamwhal) and 2IC (Capt Bhanoo). It quickly became apparent that the late monsoon was going to play havoc with our plans as much of the road up to our starting point at Gangotri had been badly affected by landslides. I don't think any of us realised just how bad it could be, but we soon would! After a frustrating 5 days stuck in Delhi, we finally managed to get on the road.

The decision to leave had been taken full in the knowledge that the route to the road head was still not fully open, but it was decided to push on as far as we could and then we would be in a better position to work our way around the inevitable obstacles. The ensuing trip to Gangotri can only be described as a lesson in patience and triumph over adversity! On a good run, the trip could be done in no more than 2 easy days from Delhi. In the end it took us 9 long, frustrating days. We were at times the vehicle just behind the bulldozer that was rebuilding the road after huge sections had disappeared down the mountain side; at other times we abandoned the vehicles, transferred the kit to mules and walked. The devastation wreaked by the exceptionally heavy monsoon was very evident all along the route to Gangotri, but eventually on the 1st of September, exactly 2 weeks after we had left UK we finally arrived at the roadhead. By now we were days behind the original schedule and so we were very keen to push on and get up the Valley of the Gods towards Gaumukh. After a day's acclimatisation walk that also allowed the advance party led by Bhanoo to push on up the valley and establish a camp at Gaumukh.

The 2 day walk up the easy trail to the source of the Ganges at Gaumukh was easy, but hot and allowed useful acclimatisation as the valley opened up and we got to see the 'real' Himalayan peaks start to appear. First Bagarathi II and III appeared and then the majestic summit of Shivling was glimpsed through the low cloud. We all finally felt as though we were making progress and from Gaumukh at 3850m, we would be in the mountains proper. The next task was to set up Base Camp and the Indians had sent on a recce party who reported back that they had managed to cross a river up the side valley from that which we were in and had set up a Tyrollean traverse in order to allow future crossings with kit. The next day we all set off up the side valley that would lead us to the base of Peak 6565 in order to find and establish a BC. After a rough ascent over the moraine covered main glacier from which the Ganges spouts forth, the route steepened through loose scree before crossing a river via the Tyrollean and then climbing on up the valley to an excellent campsite at about 4500m. It had obviously been cleared by a previous expedition and was close to a good fresh water supply. After a rest day back at Gaumukh and an opportunity to rationalise our kit a bit to minimise what was going up the mountain (no mules from here on in – all on Shanks' pony!), we shouldered our heavy exped sacks for the first time and headed back up to the BC site. Up went the large BC tents, but as it turned out, we were to spend precious little time here. However, the following day was largely rained off, although we did manage to recce a route up the valley and onto the snout of the glacier that will lead us up to the foot of the mountain. Unfortunately it also allowed us to see that the glacier is entirely covered in moraine and the route to IBC will be an exhausting knees-to-chest through a boulder field whilst carrying a heavy bergan! And so it proved to be. The next day we shuttled kit up to the vicinity of Camp 1 and then returned to BC before heading out the next day with another full load. The location for the next camp had not been agreed and for a number of reasons we ended up putting in an interim camp on the glacier that necessitated serious earthworks to level tent pitches and a lack of decent access to water. As a result, there was little argument when it was suggested that we move to an alternative Camp 1 up a side valley where we could clear decent pitches and had access to running water. The only downside was the tortuous route off the main glacier and up the extremely steep scree slope to reach the site. Moreover, we had to each do this twice in order to shuttle all the kit that we had brought, plus a con-



Andrew Bisset 'enjoying' the Tryrollean Traverse

siderable amount that had been dumped by the porters who had now returned to BC. Suffice to say, nobody found that day an easy one and there was considerable relief when the task was complete and we were now nestled at about 5145m below the SW ridge of Peak 6565m.

The climbing schedule was re-jigged yet again and it was very apparent that we needed to spend the next day looking at the options for getting to the summit. In the end a mixture of the Brit team and the Indian team set off up the side of the ridge looking for possible access points to ascend onto the ridge. Two teams were dispatched upwards via 2 likely looking gullies whilst the 2 exped leaders continued up onto the glacier and into the cirque immediately below the summit massif. The 2 teams climbing to the ridge both managed to get on top, but the going was extremely steep and desperately loose, although it did allow them to reach about 5900m. The route along the ridge looked possible, but there were a couple of obstacles that would require a more detailed recce to see if they could be overcome and the teams were not equipped to conduct this, so returned to the glacier. The remainder of the recce team had ascended the glacier and identified a possible route up the headwall from the glacier to attain a col to the north of the peak that would then allow the summit to be attained via a relatively straightforward looking snow slope. It was agreed between the 2 exped leaders that night that the north col looked like the most likely route and so plans were drawn up to move the exped onto the glacier at about 5700m and then to ascend the headwall to the col at about 6200m and thence to the summit.

The next day half of the British and half of the Indian team moved up to establish Camp 2. The site was on the glacier and was surrounded by the most stunning mountains. The tent sites were cleared and snow walls built and then the tents pitched. Fortunately whilst digging the tents in we discovered some unfrozen water lying just below the surface of the glacier that meant that we didn't have to melt snow. That said, the discovery also meant that a nearly completed tent space had to be re-dug (twice!) and so it would be fair to say that the discovery wasn't universally celebrated! Now we were finally off the moraine covered glacier surface and the climbing proper could begin – at last!

The following day saw a mixed Indian and British rope set off to try and establish a route up through the hanging glacier that led up towards the col. They made excellent progress and ascended to over 6000m – things were looking good! Then the exped luck struck again and they came across a massive crevasse that completely blocked their forward progress. There was no way of crossing it or circumventing it and so they were forced to turn back. That evening the options were discussed and an alternative route via a steep gully to the side of the glacier was decided to be the next best option. The rest of the Indian team had now moved up to Camp 2 and whilst the first team rested, the Indian pair of Baloo and Sabeer now made an attempt on the gully. The ground was quite technical and they moved slowly but steadily up to a high point at about 6000m. They ran out of rope to fix at this point and so descended back to Camp 2 reporting that they were confident that the route would "go". All was looking good for the next day and the hope



Jammy with Peak 6565m behind him on the right

was either to establish Camp 3 on the col or even to push straight for the summit. The team for the next day was agreed as a mixed Indian and British rope of 4 following the arrival of 2 of the remaining 4 British team members (the other 2 had unfortunately suffered illness that prevented them from climbing higher).

Sadly during the night it snowed heavily and continued to do so the following morning. On waking it was immediately apparent that there could be no climbing that day due to the avalanche risk posed by the fresh snow. We waited for the weather forecast to be radioed up and were dismayed to learn that the snowy weather was forecast to remain for at least 3 days. Realistically it would be at least 5 days before we could climb again and with only 10 days left to get all the way out of the mountains and back to Delhi, it was with great reluctance that the joint decision was taken by Matt Hing and Jammy to abandon the expedition. Whilst hugely frustrating, the frequent avalanches that were seen, heard and reported in the local area in the coming days underlined the sense of the decision. Sadly one such avalanche claimed the lives of some fellow Indian Army climbers on Kedar Dome, despite the efforts of some of our own Indian team who were airlifted over to assist with the rescue attempt. Needless to say it was a tired and disappointed group who tramped back into Gangotri a few days later.

The journey back to Delhi was slightly less eventful than the route up (with the exception of the head to head collision with another bus on a blind bend on a precipitous mountain road!). However, it did allow some time for reflection and whilst we could all agree that the mountaineering had been frustrating and less than rewarding, the real success of the expedition lay in the strong relationships forged between the British and Indian Army team members. There was a clear kinship between the teams and long before we had even walked out of the mountains, new plans and ideas were being discussed and the foundations being laid for what could be a very fruitful partnership. Whilst our climbing styles and backgrounds may differ, we have a huge amount in common as soldiers and this makes it very easy to come together as a cohesive team. With more joint expeditions, this cohesion can only improve and this will no doubt lead to future successful expedition outcomes (particularly if they are blessed with slightly better weather than us!).



Ian Lynch heading up towards the crevasse

Exercise

NORTHERN CORSE

By Captain Heather Lawrie

If Carlsberg did trekking routes...

In June 2012, Capt Heather Lawrie (AML) led a team of both Army Regular and Reserve soldiers from 38th (Strategic Comms) Signal Regiment to Corsica to traverse the northern most part of the infamous and illustrious GR20 High Level route. Described by travel writer Paddy Dillon as “one of the top trails in the world” we were not disappointed by what we experienced and learned about ourselves along the way.

Easily accessible from the UK by air Corsica is a French Colony steeped in history. The island capital Ajaccio is birthplace of “The Little Corporal”, Napoleon Bonaparte. During World War Two Bastia airport became the Allied base for “Operation Anvil”, the invasion on the south of France after Corsica had been liberated from Mussolini’s control in 1943. Calvi, our start point to the north has The Citadel, island home of the French Foreign Legion. Grande Randonnée nombre 20 (GR20) slices diagonally across Corsica’s jagged mountainous spine with trekkers seeking the red-and-white way markers as they pick their way along the route.

With the exped team members based nearly the full length of the UK, from Dundee to London, lead instructor Sgt Joe Wiggins led the selection weekend Exercise Trial Corse in North Wales during March. That invaluable training gave those with no or little mountaineering experience a taster of what delights lay ahead in Corsica. Fortunately the weather was kind and we had a mini-heat wave to enjoy with temperatures hitting the low 20’s. Perfect conditions to allow the leaders to see how the troops reacted scrambling exposed routes in the Gledyders.

Departing the UK on 20th June from Luton airport to Nice, then onward ferry to Bastia we collected our hire vehicles and picked our way across the island to Calenzana just outside Calvi. The PNRC run Gite d’Etape trekker’s hostel was our last proper bed for the night. From here we would also not see our Support Team headed up by WO2 (SSM) Dave Honeyman until Haut Asco nor civilised accommodation until Ajaccio in 7 days’ time.

The first day of the route was definitely the most challenging. Starting at 275 metres the immediate ascent continued to winding upwards through woodland which at least gave some protection from the sun. Continuing contour after eye watering contour we crossed several Bocca’s (passes) where you were exposed to some amaz-

ing glimpses of the Cinto massive and breath taking panoramas of the Calvi coastline stretching into the haze below. A series of Ben Nevis like zig zags led to the Bocca a u Bazzichello finally revealing the Refuge d’Ortu di u Piobbu (1570m) nestled underneath the second highest peak on the island, Monte Corona. However, it was cruelly just out of reach and across the valley, access only gained by a seemingly endless traverse around the headwaters of the Melaghia River to the outcrop of rock shelves and scrubland at the hut. The area was not only shared by humans but also horses, one making friends with WO2 (YoS) Gray Wootton then trying to scrounge food from his rucksack as soon as his back was turned. We had however, managed to catch the evening meal at the hut. For 20 euros each we squeezed the group around a small wooden table tucking into the herb soup and bread, devouring the lentil sausage casserole, sloshing it down with a half glass of house red. Now fed and watered, on a rocky outcrop, under the stars, we slept soundly.

Morning came all too soon, stopping only to fill our water containers we were soon joined by other trekkers also embarking on an alpine start. Keeping a steady pace uphill the sharp climb soon levelled off into birch woods and past a series of Bergeries, more freshwater springs and into a sheltered valley surrounded by towering crags and pinnacles which open up to Bocca Piccaia. With an elusive 3G signal picked up by both Sig Oscar Searle and LCpl Pete Goring, the dreadful news came through..... England was out of the Euro 2012. Morale pills were duly passed around by Cpl Bruce Tarbet in the shape of a packet of Haribo Tangfastics.

The first short sections of scrambling criss-crossed the ridge which when completed boosted the confidence of the group no end. At the base of the valley below was Refuge Carozzu accessed only by a knee crunching descent through loose scree but rewarded by this amazing sunset from the balcony of the hut.

Another early start and today we would be reunited with our Support team at Haut Asco but only at the end of another scorching 35 degree plus long hill day. Capt Lawrie, being of traditional Scottish complexion, despite the use of SP Factor 50 fast resembled a GR20 red-and-white way marker! The terrain and heat was beginning to take its toll on the group with some niggling injuries coming to the fore and slowing us down. After arrival at Haut Asco our next objective was to tackle Monte Cinto (2706m) the highest peak



Group 1 looking fresh at the start of the GR20



Leaving Calenzana in the distance



Maj McHenry enjoying the view whilst taking on some much needed food and water in rare shade on the first stage

on the island but following the Daily Risk Assessment and looking at how tired the group was, the difficult decision was made to go to plan B and conduct local low level SMF training assisted by Sgt Lesley Bayne and give the group some rest. We had got to know an Irish duo who welcomed us as our group arrived at each hut, sharing hill stories we knew they moved quickly. Our guidebook suggested a round trip of time of 7 hours to complete Monte Cinto, they returned after 12 hours. Decision vindicated.

Duly rested and keen to get going today was our turn to tackle the strenuous and memorable Cirque de la Solitude. The long 200 metre rock route is known to be daunting. As you descend your feet literally disappear from under you, scrambling and rock climbing techniques definitely required. Confidence and attitude grew all-round as novice climbers Sig Tazar Salamut, LCpl Jon Corfield and Cpl Neil Hewitt were seen scrambling up the opposite side, pulling on the fixed chains, no doubt all experiencing a range of emotions best summed up by the HUGE grin seen on Sig Joan Simmons face as she successfully completed the route. Job done and one more night's sleep on the hill at Refuge Tighettu then downhill for tea and medals.

Don't underestimate the GR20. It is physically and mentally demanding, Alpine starts are crucial in order to avoid the oppressive and savage mid-day sun similar at times to that experienced on Telic/Herrick, long 8-9 hour plus hill days, 14kg packs combined with knee grinding 1200 metre plus ascents and descents each day, chuck in a bit of scrambling and exposure, rinse and repeat. Our team did brilliantly, completing the route and their Summer Mountain Foundation. Do the GR20 in your lifetime, you won't regret it.



The stunning low level view across the valley (near Calenzana)



LCpl Goring ponders the whereabouts of his sun hat



Cpl Nielsen Von-Reitzig being dwarfed by the magnificent scenery all around. Location – Bocca Piccaia



Expedition complete at Bocca Muvrella (1980 m)



Sig Searle making his way up the initial scrambling phase on the first day

Global Positioning Systems

By Sven Hassall, MIA, WML

Technological developments are increasingly enhancing (or degrading!) our outdoors experiences. Perhaps nowhere has these developments been greater in recent years, than with the advent of GPS and their integration into smart phones. As with any other undoubtedly useful tool, a healthy degree of knowledge regarding their advantages and limitations should however be employed. I intend therefore to concentrate here on the technical aspects of the system, leaving the user to decide upon the suitability of any particular model for their requirements in any given scenario.

Formally known as Navigation Satellite Timing and Ranging (NAVSTAR), the Global Positioning System is, as the name suggests, a satellite based navigation system that sends and receives radio signals.

Originally developed and still maintained by the US military, the system was made available to civilians in the 1980's.

The system consists of 3 parts:

1. Space Segment. Travelling at 7000 miles an hour and 12,000 miles above the surface, 24 Satellites orbit the earth twice a day. They are arranged in such a way that there are always four of them in site at any one time. They are solar powered and are built to last around 10 years.
2. Control Segment. Six unmanned stations around the world receive information from the satellites and then retransmit it to a Master Control Station at Colorado Springs.
3. User Segment. The user segment consists of your GPS receiver. This processes the satellite signals from those 'in view' and then uses info to determine your location and other useful data. Your GPS receiver is completely passive; it does not transmit any info back to the satellites.

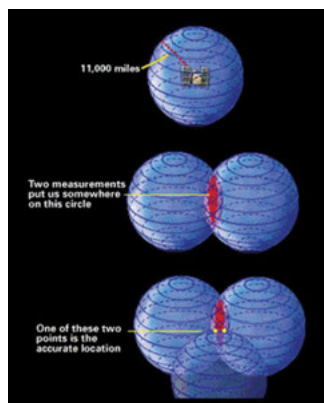
How does it work?

Satellites are used as reference points for here on Earth, much like a conventional resection. During this process (triangular resection) we need known points, their location and bearing from us. With GPS, although we know the location of the satellites (how will be covered later); they and therefore their relative bearing are moving. We therefore use the distance between them and us in order to calculate the one point where their signals meet – our location.

For example:

Sat one is 11,000 miles away
Sat Two is 12,000 miles away
Sat Three is 12,000 miles away

These satellites cast spheres of coverage, all of which will intersect at TWO places. One of these is normally in space (unless the three satellites are perfectly above us) and is therefore rejected by your handset.



Measuring distance

Each satellite transmits a coded radio signal including its ID and the precise time that the message was sent (using an on-board atomic clock); this is compared by the receiver to its own time, and because the message has travelled such a long way it will have taken some time to reach us and will therefore be out of sync with our own (time). The difference between these times is the travel time. The speed of a radio signal over this distance can be fairly

accurately measured and so all we have to do therefore is use a simple calculation that many of use on the hills:

Speed = distance over time or distance = speed multiplied by time.

There is one problem with this process – our receivers are relatively small and do not have an atomic clock. Here comes the clever bit:

1. A position is calculated as described above (using the time you set in the handset set-up menu).
2. A fourth satellite is used to confirm this fix. If your position is incorrect the fourth fix will not intersect where it should. Since any offset from universal time will affect all of our measurements, the receiver looks for a single correction factor that it can subtract from all its timing measurements that would cause them all to intersect at a single point. That correction brings the receiver's clock back into sync with universal time, and bingo!

Position

The satellites projected location is also transmitted in the coded data string. However, like all things in orbit they are influenced by the gravitational fields of the Earth, Sun and Moon and slowly move position.

This is where the ground station comes in. By checking their positions using very accurate radar, the ground station is able to tell whether they are on track or not. Any errors will be tiny, but as we have seen we need absolute accuracy in order to use the system. The error is therefore transmitted back to the satellite in question, which then adds it to the data string it transmits. Your handset does the rest.

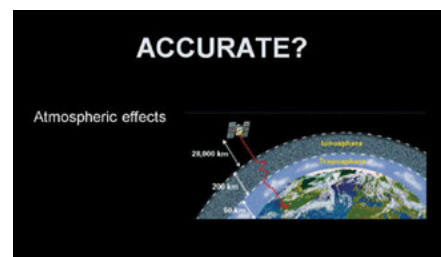


How accurate is GPS?

Assuming that everything is working as we have just described then GPS is extremely accurate. Indeed GPS signals only take 65 milliseconds to travel from the satellite to your handset and are therefore continual updated, and with an impressive accuracy of 15m. Indeed, if you are using it with a 1:50'000 map, the GPS is more accurate than the map!

Sources of error

HOWEVER, this is assuming that the whole system is working correctly and that you are in free space. As we shall see, the real world is a little different.



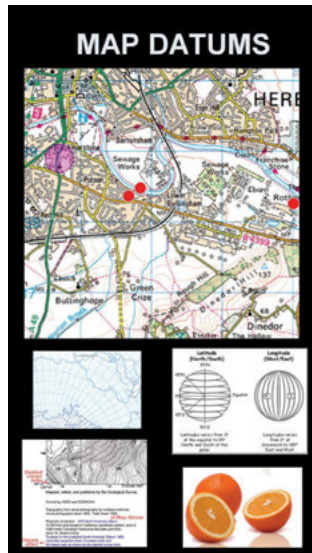
1. Ionosphere and Troposphere. Radio signals slow down as they pass through the atmosphere introducing variable travel delays. Models built into the handset are used to calculate and accommodate for this error.
2. Orbital errors. Inaccuracies regarding the satellites projected position in space are detected by ground based radar and the details also added to the satellites data string.
3. Receiver Clock Errors. One consequence of the timing principle is that any decent GPS receiver will need to have at least four channels so that it can make the four timing measurements

simultaneously. The advent of receivers that are able to receive and simultaneously process up to 12 channels at a time (old versions used to receive one and had to cycle through the channels) results in a very accurate positional fix.

4. Satellite Geometry/Shading. This relates to the relative position of the satellites. Satellites should be wide apart or the result is the equivalent to a narrow cocked hat during your resection.
5. Multi-path. This is where signals bounce around off solid objects around you, causing delay to signal arrival (and therefore inaccuracies) and confusing data that has to be filtered out by the receiver. You can mitigate against this by allowing the receiver to get a good fix in a clear area before entering the 'clutter' of a built up area of forest/canyons etc. Alternatively you can allow your receiver to remain static in order to ascertain best accuracy over time.
6. Selective Availability. In order to protect the system against use by terrorists and enemy forces, the US government originally introduced a random error into the original coding that would degrade the speed of the system, and introduce occasional positioning errors, for those without a military receiver able to decode the error information. Due to the mass proliferation of GPS into many areas of modern life and the advent of complementary systems designed to get around this problem, the US turned off the Selective Availability process in the mid 90's. This is not to say that it would not be turned on again if it were to their strategic advantage. Military users now use complicated encryption algorithms in order to access additional information and in certain areas a greater degree of accuracy.
7. User error. Whilst the GPS information is potentially very accurate it is only so if it is correctly referenced against a Map Datum and appropriate grid format.

Map Datums

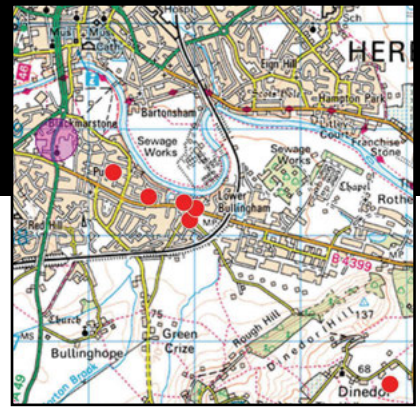
A co-ordinated grid system comprises of a set of hypothetical lines drawn around the world horizontally and vertically. As more lines are added they increasingly intersect to form more and more points of reference (grids or lat/long). The pattern of plotting these lines is known as a Map Datum or Projection. There are unfortunately hundreds of them originating in many different countries and mapping organisations, and with different strengths and weaknesses. They not only allow for a point of reference but also allow some 'stretching' of the surface to produce the uniform mapping scales we require for measuring distance and for taking bearings etc. This presents us with a problem when using a tool with global potential – the [GPS] unit does not know which mapping you are using - you must tell it!



Grid formats

As if things were not complicated enough already, many countries have come up with their own grid formats. This must also be set correctly to the map. BNG (British National Grid) is normally the default for the UK and UTM (Universal Transverse Mercator) the most likely when abroad: always check the data on the map to

confirm. Before you commit to using it as a safety device, ask yourself the question "Can I set this in my mobile phone?"



Enhancements

Constantly striving for greater accuracy and utility, users and manufacturers are constantly adding to the GPS system.

1. WAAS/EGNOS. The Wide Area Augmentation System and the European Geostationary Navigation Overlay Service are two satellite and ground based systems that compliment and improve upon the accuracy of the GPS system, particularly in the third dimension. This is generally used for increasing the capacity of runways and flight paths. To use the system you require a WAAS capable GPS and to be in coverage of the additional satellites (North America & Europe). This provides accuracy of within 3 metres
2. DGPS. Differential GPS provides users with even better accuracy. Used mainly by surface shipping, DGPS consists of a series of ground stations with very accurately surveyed positions. This position is compared to the outputs of the GPS satellite network; an error is calculated and correctional information broadcast to those with a DGPS receiver. It is becoming much less common with the demise of Selective Availability.
3. GPS COMPASS. Although some units have an electronic compass built in, the majority will only give you directional information when it is moving, calculated by referencing the change in position. This has important implications when considering which way to walk off a steep and dangerous summit in a white out! In addition, most units can automatically calculate your bearing into a grid or magnetic bearing, you must however tell it which one you want!
4. ALTIMETER. GPS altitude is often not as accurate as the positional information that it provides. This is because an accurate calculation in the third dimension requires a 4th satellite off to one side above or below you; the trouble is that these are often shielded by the earth, particularly in mountain terrain. A good analogy here is a conventional resection of three points close together that form a deep but narrow cocked hat, rotate this through 90 degrees onto the earth's surface and you get very accurate position info but poor altitude resolution. Any info derived is also subject to the problems discussed previously regarding map Datums. Many handsets therefore now incorporate a barometric altimeter that works similar to your watch; an excellent tool, their use will be the subject of a later article.

Summary

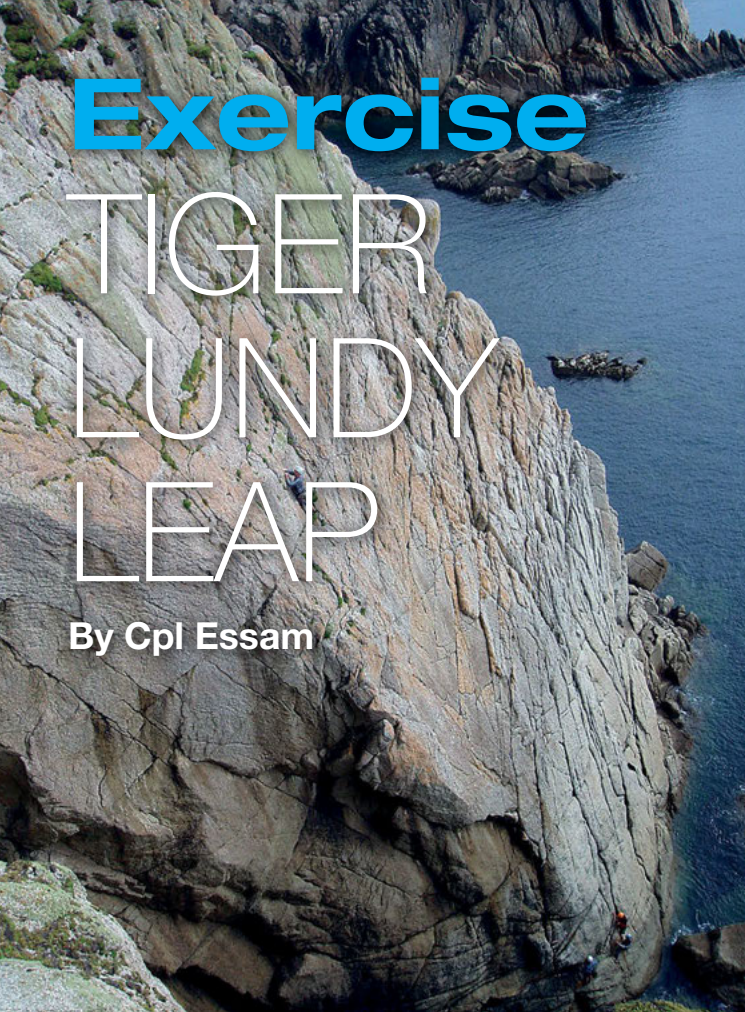
A highly accurate and engineered system, GPS will work in any weather and 24/7. Whilst it is amazing that you get the benefit of all that background work/infrastructure for free in your mobile phone or for c£100 for a dedicated receiver(!!!), It is not however without its limitations. Fortunately these generally only come into play when the human factor is involved; care must be taken therefore, to ensure the accuracy of the system is not wasted, or worse, catastrophic error introduced by incorrect interpretation or set up. It is imperative therefore that, in the mountains at least, GPS remains an adjunct to conventional map and compass, without which it is useless and/or dangerous.

Yes, I do carry one...

Exercise

TIGER LUNDY LEAP

By Cpl Essam



As we all assembled at Bideford Quay to board the MS Oldenburg, speculation was rife among the group on what to expect from Lundy Island and some of its notorious climbs, among other things. We boarded in good time and were soon hearing the dulcet moans from SIO Morrison due to his acute sea sickness. Within 2 hours we were setting foot for the first time for all but 2 of the 9 of us on the island and were all rather perplexed with the fact that we had to walk steeply uphill for “a little while”. Unfortunately we could not make out the lay of the island until we were on it due to the thick fog as we crossed the Bristol Channel; it’s fair to say no one in the group was at all disappointed.

We started by discovering all of the islands amenities and moving ourselves into the converted barn that would be home for the next five days, and then embarked on a recce mission to a few of the islands many climbing areas. Unfortunately this proved to be a little more difficult than expected as the fog prevented us from even seeing the middle of the climb let alone the bottom. Not to be discouraged, we set about discovering the remainder of the island.

The very next morning, our trusty Jack Russell wannabe Cpl Micky Dawber was on his hind legs panting like a maniac as he could sniff the climbs, so we established climbing groups and went on our way for what was going to be a most interesting day. With one of the groups heading to Kistvaen Buttress on the South West of the Island and another group headed to The Flying Buttress Area. Kistvaen Buttress proved rather inaccessible so we found ourselves climbing in the Picnic Bay Area on its 9 climbs. With Cpl Dan Wright and myself developing our lead climbing skills. The Flying Buttress area also proved fruitful with many of the climbs on the crag being completed by the group.

On Thursday morning the weather had unfortunately taken a turn for the worse and we were forced to wait the morning out due to very strong winds coming across from the Atlantic and thick persistent hill fog lowering visibility to less than 10 metres at times. In the afternoon, thankfully the weather provided a slight window for climbers to discover arguably the most famous climbing area on

the island; The Devils Slide. The Devils Slide was completed by a number of the group including SIO Huw Richards, SIO Alan Giles and Sgt (SI) Scotty Mayled to name a few. A small group decided to take a trip around the east coast of the island to discover the vast array of flora and fauna on offer in such a unique place and the wildlife that surrounds it. Very inquisitive seals, Guillemots, Cormorants and Shags we all spotted within half a mile not to mention the array of Gulls including the Great Black Back, the Lesser Black Back and the Common Gull. Once the group were in, the topic of conversation was quickly adjusted as we were given news that the weather was due to take a rather epic downward spiral and we may not be able to sail from the island on the Saturday afternoon. Of course we all saw the bright side of this and the potential gained from such an occurrence and headed to the Tavern.

As we rose on the Friday morning we were rather pleased to see that the weather forecast was true to form, unreliable and made our way out on our adventures. Some of the group decided this would be the day to attack The Devils Slide whilst other groups headed to The Knight Templar Rocks and Atlantic Buttress areas. Again these areas provided interesting climbing, particularly in the estimated Force 5 winds we experienced. On Atlantic Buttress, “Sooty and the Sheep” proved to be rather a developmental climb and The Devils Slide worthy of its 3 Star Grading.

As Friday drew to a close, the majority of the group decided that The Marisco Tavern would be the perfect venue for some not so quiet reflection. We beasted the board games to within an inch of their lives and agreed “The Games Master” made them much more interesting than their rulebooks ever let on.

Saturday morning signified the start of the end of the trip, we were informed that the ferry would sail and reacted accordingly. Unfortunately, the wind had not let up, this made for very dangerous conditions on the treacherous coastline of Lundy and so we decided after a very windy recce, it would be the safest option not to climb.

Despite adverse weather conditions providing us with obstacles, Lundy Island lived up to all expectations and much more for the whole group. The climbing areas of Lundy Island were unique to say the least and certainly provided a challenge for all. The aim of the exercise was achieved and all staff agreed it has been an instrumental trip for all staff and relationship development within Soldier Development Wing. The trip will definitely be in the forefront of many of our minds when planning any climbing trips in the future, with a few members of the staff that attended already looking to revisit the Island later in the summer for some recreational climbing and to boost knowledge on Flora and Fauna, Birdlife and Marine Wildlife.



Exercise

BRAVEHEART CADET

Isle of Skye

By Matthew Chapman

This summer the beautiful Isle of Skye provided an ideal location to introduce five Officer Cadets to mountaineering. As part of the Royal Military Academy Sandhurst's training programme, cadets are to plan and run an Adventure Training expedition during second term's leave. The terrain was challenging but the weather held out for the week and everyone gained the Summer Mountain Foundation qualification. The introduction to mountaineering was made all the more interesting when the group was called upon to rescue a fallen walker in the Quiraing.

Initially the plan was to walk the 128km classic route, from the northern tip of the island to the most south point. However in the weeks leading up to the expedition we had to change the plan. With delays in obtaining land clearance, chunks of our route were out of bounds, we still had a large portion of the route accessible so we decided to complete as much as we could in stages. On the last day of term we marched off the square from our Seniors Commissioning Parade and began the long drive to the Highlands.

Many hours later we arrived at Balmacara House on the edge of the Kyle of Lochalsh; our expedition base. It is relatively unknown to the Army as it was previously owned by the Royal Navy. The house can accommodate 35 personnel and is an ideal location for mountaineering and scuba diving. The staff were very friendly and provided us with lots of local knowledge and advice.

We were able to use the facilities to deliver presentations that make up part of the course syllabus during the first evening. This set us up for the following day when we blew out the map reading cobwebs with some tricky micronav in the south of the island. OCdt Diamond (RGR) was intent on looking fashionable and wore a Barbour jacket whilst carrying a Union Jack umbrella. He soon regretted his decision when the predicted occluded front, identified in the Mountain Weather lesson earlier, was confirmed on the ground. The lashing rain and driving wind soaked his jacket and turned his umbrella inside out! Needless to say he wore the issued Paramo Smock from then on!

We returned to the House for a second night and prepared for a three day expedition from Staffin Bay, along the Trotternish Ridge, summiting Storr and then descending into Portree. We set off the next morning by car and then bus to arrive at the beach to hunt for the fossilised dinosaur footprints in Staffin Bay. With our curiosity quelled we began the ascent from sea level to the Quiraing, a slope of crags and needles formed by a continual landslip process. As we approached the Needle we saw a small group gathered on the narrow path. They were surrounding a walker who had fallen 20-30 meters, stopped from falling further by hitting a cairn.

We quickly assessed the walker's injuries and began treating her for the deep cuts to her head and arms and shock. Someone in the crowd was already on the phone to 999 but they passed the call on to the instructor. After seeing a significant improvement in the casualty's condition we advised the operator that she was stable and did not require an urgent helicopter evacuation. Skye Mountain Rescue Team (MRT) then mustered and deployed as close as they could with a 4x4, eventually reaching the group on foot.

Whilst waiting for the MRT to arrive we inquired further about the situation before the fall. The walker was with two friends who said she had been climbing for most of the day in flip flops. Moments before the fall she changed to high top sneakers because they thought the route down from the Table to the Needle looked precarious. The group had minimal warm clothing so we took care of them as well; sharing our spare jumpers, hats and lots of hot chocolate until the MRT arrived.

When the MRT arrived we completed a handover of the casualty and then provided extra manpower to carry the casualty to the 4x4. We were very impressed with the MRT's stretcher, certainly better than a poncho (for our final RMAS exercise, inspired by the rescue, we modified our lightweight stretcher with the addition of shoulder straps)! We watched from a distance as the casualty was transferred in into a waiting ambulance, we were glad to see the walker safely off the mountain. Overall it was a testing challenge for all members of the team but we gained a lot of experience and it was rewarding seeing the casualty safely leave the mountain. The accident had eaten into our expedition time significantly so we changed the plan and detoured to a new wild camp.

With tents pitched we took in the beautiful sunset and scenery, reflecting on the day's events. Waking up the following morning was not quite as magnificent though. Hoards of midges attacked our camp the moment we left our tents. OCdt Charlton (AAC) deserves a special mention for his extremely lumpy face. Gallons of Avon moisturiser and headnets somehow failed to protect him.

Following the dramatic events of the day before, we continued with our expedition along the Trotternish Ridge and into Portree. The scenery along the route was beautiful and culminated in a pleasant climb and tricky descent on The Storr.

Overall we had a really enjoyable expedition, even managing to squeeze in a visit to the Talisker Distillery on the drive home. We thank the Army Mountaineering Association for their support and hope that many others will visit Balmacara House and the Isle of Skye.

OCdt Chalmers – Expedition Leader, OCdt Chapman – Instructor, OCdt Charlton – Midge Advisor, OCdt Diamond – Fashion Advisor, OCdt Arrowsmith and OCdt Pugh



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