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# mountain rescue

JULY 2010

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ISSUE 33



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LEFT: WOODHEAD MRT LAND ROVER CENTRE & RIGHT: BUXTON MRT LAND ROVER

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## WELCOME TO ISSUE 33

Mountain Rescue is the membership magazine for mountain and cave rescue in England and Wales.

Contributions should be sent to the editor at the address below.

Every care will be taken of materials sent for publication however these are submitted at the sender's risk.

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### NEXT ISSUE ISSUE 34

Copy Deadline:  
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Editorial copy must be supplied as Word document.

Images must be supplied as high resolution (300 dpi) JPEG/EPS/TIFF/PDF.

Advertising artwork must be supplied, ready prepared on CD or via email as font embedded PDF/EPS/TIFF (300 dpi) or Quark document with all relevant fonts and images.

### FRONT PAGE

RAF Sea King and winchman taken between Fleetwith Pike and Honister mine, looking across towards Buckstone Haws and Hindscarth Edge.

Photo: Richard Gale

EDITOR'S NOTE: Articles carried in Mountain Rescue do not necessarily reflect the opinions of Mountain Rescue England and Wales. We do not accept responsibility for information supplied in adverts/advertorial.

# mountain rescue



Well, what an interesting AGM that was! For those of you for whom the prospect of a lively AGM thankfully passes you by it's worth noting that this year's had the potential to rock MREW to its core, with talk of a vote of no confidence in several members of the management group, and the prospect of the rest of the group resigning in protest, had the vote been successful.

Maybe not a bad idea, I hear some of you say, but that would be to belittle the enormous amount of work which goes on at national level, performed by people who are, at the end of the day, just the same as you – team members (or ex team members) with a passion for mountain rescue which has simply taken them to a wider forum than their local team or region. And this is usually in addition to the work they continue to do for their team!

Your permission to use controlled drugs didn't just come out of thin air, and neither did the free tyres your team has been able to claim for the last two years, or the free road tax which now applies to most team vehicles. Someone had to spend time and energy fighting for these things, and they are just the tip of the iceberg.

MREW has decided to embark on a central purchasing programme, something which has been talked about for years and which will save teams huge amounts of money but can only now be contemplated because we've 'magically' found some money in the bank – and are hopeful of quite a bit more as long as someone on the exec can put an enormous amount of time into the project. Oh, and if you're going to this year's conference stand back in awe please at the fantastically well organised event which only took a couple of people ten minutes to organise in the pub one Friday night!

In the end the (potential) vote of no confidence found its way onto the agenda as a polite request for an update as to where a

complaint was up to, and this was answered equally politely by the MREW President, Peter Bell, who now regards the matter as closed.

Talk of a vote of no confidence was also pre-empted by a suggestion from the floor that the fact that the management group had, minutes earlier, been re-elected unopposed was tantamount to a vote of confidence. And there the matter was allowed to rest. Rested but not forgotten.

The exec has been accused in the past of railroading things through which teams and regions haven't necessarily wholly supported and I believe that this, more than anything else, was the underlying reason for the unrest prior to the last AGM. Whether or not that reflects the truth is open to question but it serves as a reminder to the exec that we shouldn't always expect to get things our own way. Equally, there is always ample opportunity for teams and regions to discuss matters prior to a meeting and they all have an opportunity to vote as to whether or not they support a particular initiative. It's at that point where opinions should be expressed and discussion encouraged, before something becomes a festering thorn in everyone's side.

And it's no use representatives saying they'll take it back to their team and ask their opinion. Team and regional representatives become members of MREW when they take the job on and are mandated to make their own mind up about something on behalf of their organisation – so do so at the next meeting you attend and, if you're not happy about something, speak up!

Which brings me to a joke. Have you heard the one about the Englishman, the Irishman and the Scotsman. The Scotsman says to the Irishman, 'We've just been given money by our government for a development officer.' And the Irishman says, 'Oh, we've had one for a few years now.' *Don't get me started!!!!*

**Andy Simpson** Press Officer

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## NEW OFFICERS ON THE BLOCK

May saw two new officers appointed in Neil Roden (Vice Treasurer) and Daryl Garfield (Vehicle Officer). Neil will be supporting the treasurer Penny Brockman, but will also be developing central and coordinated purchasing. Involved in mountain rescue for over 30 years, with the Edale team, he is currently chairman of the PDMRO. A founder member of the national fundraising group he was primarily responsible for setting up the Basecamp support group, although he has

now passed this on to his long-suffering (his words, not mine!) wife Lorraine. His other national responsibility has been to chair the Forward Planning Group, looking at where we as an organisation want to be in 5-10 years. So it's safe to say he's pretty well steeped in mountain rescue! The idea for central purchasing came from repeated conversations with suppliers and manufacturers who are often happy to give very substantial discounts for order over 250 units – bulk buying at such levels probably isn't an option for

individual teams but, by bringing teams together, far better deals could be done. As the new national vehicle officer, Daryl might have been thrown in at the deep end somewhat as blue lights, driver training, and speed restrictions continue to excite opinion whenever the opportunity presents, but none of the above should faze him, given his background. As a fire and rescue service driving instructor he trains fire fighters and support staff in LGV category C licence, defensive, off road and emergency response driving, trailer towing and various vehicle familiarisation. In his mountain rescue career, he's a member of Penrith MRT, a trainee dog handler with his dog Dram, and a swiftwater rescue technician. And for those of you who can cast your minds back to last July, he's 'the guy who broke his leg' during the Helvellyn event with Prince William!



NEIL RODEN

(Sorry Daryl, couldn't resist using the pic!) Daryl is looking to form a subgroup to draw on experience from within the mountain rescue community and he's happy to hear from teams with any burning questions they might have. But, he adds, 'please hold off on the blue light stuff for a while as I've just taken on this role and it's one of the hottest topics with much to discuss on all levels.' He hopes to achieve a national vehicle/driving database, through a survey of teams, their capabilities, resources and suppliers, which would provide a detailed snapshot of the current situation on which to build future plans. It would also help those wanting to purchase new or convert existing vehicles, looking for driver training providers, insurers, and so on. If you wish to contact Daryl with those 'burning questions', email him via [darylgarfield@googlemail.com](mailto:darylgarfield@googlemail.com).

document the inspection and, if specialist advice is needed, contact the manufacture. If you need training on inspecting equipment, there are a number of courses run by MREW and regions throughout the year. I would like to thank Roger King from Devon CRO who will be taking on the role of secretary to the equipment sub in November. And finally, whilst writing, I learned about the passing of John Edwards. John was a long standing and valued member of the equipment subcommittee who always had a positive contribution to make. He regularly organised the Peak District equipment checking course. I will miss John and wish to pass my condolences on to his wife Mary, the Oldham team and the Peak District.

## BENEVOLENT FUND

Huw Birrell writes... As some of you will be aware I am looking at the viability of such a fund's existence. From the off, it should be pointed out this is in no way a substitute for a good insurance policy. The current NWMRA/LDSMRA insurance appears to be the best at this time. As we know, insurance claims can be very protracted and the aim of the fund is threefold. Firstly, to provide immediate financial assistance to a member following an injury on MR duty. For example, if a self-employed builder hurts his back carrying a stretcher and can't work as a result, the fund could make a payment. However, as loss of earnings would be a part of the insurance claim, this would be treated as a short term loan and repaid to the fund when the insurance pays out. Secondly, for those injured on MR duty and who need financial assistance later on to provide a specialist bath or other aid. This could

## EQUIPMENT UPDATE

Richard Terrell writes... Whilst finishing the equipment requests for the last year, I added up the rope that has been funded by MREW and it comes to 3,000 metres. Other funded items are the first aid bags and the Blizzard bags. I have been contact by RAF SAR regarding concerns expressed by winchmen about the condition of teams' winching strops and stretchers. Can I please remind teams that all winching strops should have an inspection regime, with appropriate logs and records kept. Teams should also inspect their stretchers periodically and

LEFT: DARYL HITCHES A LIFT ON A GURNEY  
RIGHT: HELICOPTER TRAINING WITH DRAM



## Dates for your diary...

### SEARCH PLANNING & MANAGEMENT REFRESHER

Places: 30  
Date: 25-26 August (2 days)  
Location: University of Wales, Bangor  
Contact: Dr ASG Jones MBE  
01248 716971 and 07811 041227

### SEARCH FIELD SKILLS

Places: 30  
Date: 27-29 August (3 days)  
Location: University of Wales, Bangor  
Contact: Dr ASG Jones MBE

### SEARCH PLANNING & MANAGEMENT

Places: 40  
Date: 30 August – 3 September (5 days)  
Location: University of Wales, Bangor  
Contact: Dr ASG Jones MBE

### JOINT IMRA & UK CONFERENCE

Places: TBA  
Date: 10-12 September (2 days)  
Location: Dublin City University, Dublin  
Contact: Peter Howells OBE MSTJ  
01633 254244 and 07836 382029  
[plhowells@plhowells.fsnet.co.uk](mailto:plhowells@plhowells.fsnet.co.uk)

### TRAIN THE TRAINERS COURSE

Places: 50  
Date: Sunday 17 October (One day)  
Location: NEWSAR HQ, Colomendy OPC  
Loggerheads  
Contact: Huw Birrell  
01978 769188  
[huwbirrell@aol.com](mailto:huwbirrell@aol.com)

### MR(E&W) SUBCOMMITTEES AND BUSINESS MEETING

Places: 80  
Date: Saturday 20 November (One day)  
Location: Lancs Police HQ, Hutton  
Contact: Peter Smith  
01796 862335  
[secretary@mountain.rescue.org.uk](mailto:secretary@mountain.rescue.org.uk)

### MEDIA TRAINING COURSE

Places: 20  
Date: Sunday 21 November (One day)  
Location: Lancs Police HQ  
Contact: Mike Margeson  
01229 889721  
[mmargeson@hotmail.com](mailto:mmargeson@hotmail.com)

### TEAM LEADERS DAY

Places: 80  
Date: Saturday 4 December (One day)  
Location: Derby MRT HQ  
Contact: Peter Smith

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For more information please visit our website

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## Paul Amos presented with award in 'appreciation of significant service to mountain rescue'.

Paul Amos has stepped down from his role as representative of the Chief Fire Officers Association. He is due to retire from the service in August. His place as rep will be taken by area manager Roy Harold from Bucks FRS, who has been on the specialist rescue scene for many years. Chairman of the Strategic Group and a member of the flood support team, Roy will also take Paul's place on the UKSAR Operators Group, thus ensuring continuity. Paul was presented with his award by Peter Bell before the main business meeting in May. He will be sorely missed. A keen hill walker and mountaineer himself, he had a natural affinity with the

world of mountain rescue. A strong advocate for our cause at CROA meetings and at government level, he has nurtured a mutual trust and respect between the organisations. Effective inter-agency working is a key aspect of major incident response and the development of high level links is essential. Through Paul's efforts, we are far better placed to work with the CFOA. His areas of expertise are flood and water rescue and his tenure as rep coincided with an upsurge of interest in flood rescue due to a series of national emergencies. Through his network of contacts, we have been

LEFT TO RIGHT: MREW PRESIDENT, PETER BELL; PAUL AMOS; MREW CHAIRMAN, DAVID ALLAN; AND BCRC CHAIRMAN, BILL WHITEHOUSE

brought into the heart of the process which will shape the response to flood and water emergencies in the future. Thanks to Paul, we've had the opportunity to contribute to national policy, and his quiet purposeful manner has paved the way to a closer working relationship between us and the fire and rescue service. Paul thanked Mountain Rescue for our support over the past three years, adding that 'from a FRS perspective, the relationship with MREW has been entirely beneficial.'

also encompass retraining if the claimant's original job is out of the question due to injury. Thirdly, it seems that if your team does not have a benevolent fund or similar they cannot assist you with legal costs incurred through MR duty. A national fund could.

So, how much will it cost? Let's be honest we're talking thousands of pounds and I'd ask every member of a mountain, cave or ALSAR team to consider joining. You could join through your region, team or as an individual but you can't be in twice. Length of membership and cost has not been decided, indeed, I make no bones, I do not want to make decisions, but I will facilitate what I see as a true cooperative. The strength of the system will be entirely dependent on numbers joining. At the time of writing, less than half the questionnaires had been returned. Please check whether your team has returned theirs.

Our current need is for expertise – we require a separate charity to be set up (a legal obligation if we ever get an income of more than 5k per annum); Articles of Association to MREW; a constitution and trust deed with a governing document. I am no expert on these things but am willing and happy to facilitate. I appeal for anyone with such expertise or experience to come forward – and, ideally, a representative from each region/organisation. Mountain rescue is a dangerous game and we are all in it together. For the price of a couple of pints each we could lessen one

worry. Any questions or queries please send them to [huwbirrell@aol.com](mailto:huwbirrell@aol.com)

### IRELAND & UK MOUNTAIN RESCUE CONFERENCE DUBLIN 10-12 SEPTEMBER

Plans are well underway for this year's conference with confirmed speakers on a variety of subjects including: Water rescue, HART, trauma/casualty care, the Cockermonth floods, rescue on St Sunday's Crag, GPS and mapping software, mountain medicine, ICESAR, SARCALL and a host of other topics under the generic heading of 'Mountain Rescue – Our Future Role.' Combining what we're all passionate about with a generous helping of traditional Irish hospitality,

this is your chance to network with other mountain rescuers, meet old friends and make new ones. Places are still available for team members at £85 including all food, accommodation and workshops. Contact your team secretary for a booking form.

### TRAINING UPDATE

Mike Margeson writes... I'd like to add my own few words about the late John Edwards. I had the friendship, support and challenge at times of working with John on the equipment sub for over fifteen years. He had so much energy for all things MR there was rarely a week went by we were not discussing some issue, either regional or national. He will be missed.

### NEW THIS YEAR – TRAIN THE TRAINERS

This day, at NEWSAR base on 17 October, is intended for any team member who might be running team training – NOT just team training officers. For full details, contact Huw Birrell via [huwbirrell@aol.com](mailto:huwbirrell@aol.com).

### MEDIA SKILLS FOR MOUNTAIN RESCUE TEAMS

Sunday 21 November at Hutton, this well received national course has been moved to Police HQ to make it more easily accessible and takes place the day after the MREW meetings. The course is run by Steve Howe, Sally Seed and Dave Freeborn, all with extensive mountain rescue and media experience. It's aimed at

any team member who might find themselves in contact or having to deal with the media. The cost is £100 per person and we have only twenty places. Booking is via Richard Holmes [r\\_n\\_holmes@hotmail.com](mailto:r_n_holmes@hotmail.com) and will only be excepted with payment.

### NATIONAL TRAINING DAY RELAUNCHED AT PLAS Y BRENIN

Book Saturday 7 May in the diary – we have booked in at PYB! The plan is for each subcommittee to present a half day workshop and run it twice so those attending can chose two of the five or six workshops running. More details later in the year.

### ROPE RESCUE GUIDELINES

Other training news... work on further guidelines for rope rescue is progressing. Ali Read has taken over the coordination of this work and with considerable energy. We hope to be in a position to consider the draft guidelines by our November meeting.

## Royal polo match brings princely donation for Mountain Rescue England and Wales.

Mike France and Judy Whiteside travelled to Cirencester Park Polo Club in June, to watch Prince William's team take The Dorchester Trophy – and pick up a cheque for the princely sum of £24,254. We were there alongside Centrepoint, another of the Prince's charities, who were kind enough to invite us to join them in their corporate entertainment tent for lunch. This is now the fourth polo match we've attended, to the benefit of Mountain Rescue England and Wales. Once again, a great day was had by all and many thanks got to Cirencester Park and, of course, the Dorchester Hotel for their sponsorship.

## LAKE DISTRICT

### LAKES TEAMS SUPPORT COMMUNITIES

Richard Warren writes... The floods of November 2009 saw the Lake District teams working together and supported by their neighbouring teams. This truly demonstrated the preparedness, willingness and professional capabilities of our voluntary service to the local community and, indeed, the much wider audience. The skills and resources of mountain rescue were again called in by the county in the afternoon of Monday 21 May, when there was the tragic school coach crash in West Cumbria.

### CUMBRIA COACH CRASH

Mark Hodgson, Keswick MRT team leader writes... **Keswick MRT** was called to the A66 coach crash on Monday 21 May. Tragically, two schoolchildren in the coach received fatal injuries, along with the driver of a second vehicle. The coach, from Keswick Grammar School, was taking students home at the end of the school day. The team was called out by the police within minutes of the crash happening, with subsequent calls coming minutes later from ARCC Kinloss who had dispatched two Sea Kings to assist the three air ambulances already en route to the scene. Thirty-five team members attended and provided medical

treatment, splinting, packaging and stretcher evacuation of the casualties to the helicopters at the accident scene; marshalling of the helicopters on scene was also carried out by the team. One of the team doctors was the first doctor in attendance at the clearing station in Braithwaite School, assisted by members of the team, with other doctors and paramedics attending as they became available. Calls for support from Cockermouth and Penrith teams were quickly responded to, mitigating the serious potential to run out of stretchers, collars and vacuum mattresses. The thoughts of all those MRT members involved, and their families, go to the victims of the crash and their families. The team undertook their debrief of the incident in place of the normal Thursday evening training, in advance of being invited to attend the formal multi-agency debriefs.

### SHOOTINGS IN WEST CUMBRIA

Richard continues... County emergencies are now, unfortunately, becoming a regular occurrence in Cumbria. Wednesday 2 June was the day of the funeral of the first student who tragically died in the coach crash, but it was also the day a West Cumbrian taxi driver, Derrick Bird, went on the rampage and killed twelve innocent people, injuring many more. (There were reports of thirteen killed

and a further 25 people injured, including three in a critical condition).

Once Bird had been found dead in the woodland area near Penny Hill Farm, Eskdale, mountain rescue was again called in to support the county. As Gold Command struggled for resources, with 30 crime scenes to investigate, at around 5.00pm that afternoon, **Wasdale MRT** were tasked to search the roadside verges, gardens and 20 metres into adjacent land for further possible casualties. It was half term and the county was full of tourists and walkers. In total there were 100 miles of roads to clear. Support was brought in from all the Lake District teams plus SARDA teams. Teams from the north east, north west and south Scotland arrived later in the evening to help with this massive task. Support was offered from as far afield as Glencoe. Needless to say, the task was completed by 11.00am the following morning with only a few hours' sleep had by all. In addition to the search, Wasdale MRT was tasked to support the police late Wednesday evening in recovering the body of Derrick Bird from the remote woodland area.

I know that the Wasdale leaders coordinating the searches would wish to echo my personal thanks and appreciation to all those team members who came to help. It is a real demonstration of the willingness of mountain rescue volunteers from every quarter to drop what they are doing and rally their support. Every team member from West Cumbria will have known someone who was killed, injured or closely related.

That Wednesday was a dreadful day for Cumbria and a day we would all want to forget; but also it's a day we will always want to remember. For those who were so tragically killed and injured, for those who lost family members and friends and for the tremendous support from neighbouring teams and also from the local community. Our sympathy and support especially goes out from all the team members in the Lake District and beyond, to Kathy Jackson, deputy team leader of Kendal MRT who sadly lost both her parents in the shootings.

## PEAK DISTRICT

### BUXTON TEAM'S YOUNGEST SUPPORTER SETS NEW CHALLENGE

James Martin may be small in stature but he has mountainous ambitions. The ten year old, from Poynton, who has already raised over £500 for **Buxton MRT** has set himself a challenge that would make the keenest of walkers tremble.

James already has a list of summit successes to his name including Scafell Pike, Snowden and Ben Nevis, which he scaled before his ninth birthday. Not content with big hills James also makes long distance walking look easy and completed the West Highland Way and The Cumbrian Way, also before his ninth birthday. Last year he took on and finished the 190 mile Coast to Coast raising £500 in sponsorship and collections, raising money for the team and the British Heart Foundation, in memory of his Nan.

Looking round for a fresh challenge James has set his sights on the 85 mile Dales Way, starting in Ilkley, Yorkshire and walking to Windermere in the



## Leaflet campaign for Cumbria

As reported in many previous editions of the Mountain Rescue magazine, the number of incidents continues to rise. 2009 saw a total of 553 incidents across the county, 20% up on 2008. Up to 1 June, numbers of callouts continue every bit as busy with Keswick MRT undertaking 59 full team rescues (compared to 57 in 2009) along with another eleven alerts, and Langdale Ambleside undertaking 51 full team rescues (compared to 55 in 2009).

In a further attempt to reduce the numbers of avoidable incidents, LDSAMRA in conjunction with Cicerone are pleased to announce the new 'How to Stay Safe and Enjoy the Fells' leaflet. The leaflet can be found on the LDSAMRA website in a PDF printable form. Go to [www.ldsamra.org.uk](http://www.ldsamra.org.uk). 100,000 copies of the tri-folded A4 leaflet are being distributed across the county. The campaign is intended to help people make the right choices before going into the hills and provide information on what to do in the event of an accident. It will be available in numerous outlets throughout Cumbria and the Lake District and would be a very helpful addition to anyone's rucksack when they head onto the fells. We are looking to continue the partnership with Cicerone for future publications with an aim to reducing casualty numbers through free and available mountain rescue information.





## Keswick team members travel to Canada for advanced rigging for rescue training by Mark Hodgson

Keswick Mountain Rescue Team, over their 63 year history, has undertaken a high number of crag rescues. It is fair to say that the methods for dealing with crag rescues have changed considerably over this period!

About ten years ago we recognised that we were continually revising the way in which we set up belays, tied onto the stretcher, attached the barrow-boy, controlled the stretcher descent etc. At times, and especially in training sessions, this led to much ongoing debate as to 'the best' and 'the safest' methods. Around the same time we heard of a new system, Rigging for Rescue (R4R), a revolutionary science-based method pioneered in Canada.

The basic principles of the system are that no piece of equipment should ever be subject to a shock load and every aspect of the system is backed-up to provide continued security in the event of a failure in any element of the system. It is a two rope system – a main line and a safety line. We recognise that not all teams are converted to the principles of R4R and we do not profess that it is the only way. What we do know is that it works very well for us and our casualties; no more debate; job done, safely and efficiently.

In 2005 KMRT brought Kirk Mauthner over from Canada to deliver an R4R course for the Keswick team, following which the team discussed, reviewed and trained in the new skills and adopted the principles of R4R as the norm for our crag rescues. In 2008, the corporate structure of the R4R organisation changed.

Having built an excellent relationship with Kirk Mauthner and to develop our skills in this area to a very high level, over the next three years and at considerable expense, Keswick MRT brought Kirk back to the UK to deliver further technical rescue training. In these courses we provided training for 25 Keswick MRT members and fifteen non-Keswick members. In 2009, LDSAMRA organised a similar training course and are planning to do the same again this year. Many Lakes teams are now adopting the same principles.

We now have a standard method of operation in the team with a large group of well trained and experienced team members. Our standard system adopts all the principles learned, with the capacity to be flexible and adaptable to cope with any crag situation. The team regularly undertakes simulated crag rescues to maintain their knowledge.

As with all skills used in MR it is vital we continue to train, both to maintain and increase the skills and to learn and absorb new developments. To this end, we are sending eight team members to Canada in June 2010 to further these skills. Inevitably there will be questions of 'Why Canada?' The reasons for investing in sending members this far is several fold: to get the best training from one of the best trainers available anywhere, to work on bigger more exposed crags, and to further build confidence and teamwork in the vertical world of crag rescue. Being able to operate safely and confidently on bigger crags enables operations on the biggest crags of the Lake District fells to be taken in the team's stride.

We are already benefitting from the plans: regular additional training is being undertaken by the individuals going to Canada to hone their skills before they go and this training is open for all team members to attend, further raising the skill levels across the team as a whole even before the additional training has taken place. Given that this training is in addition to our weekly training and the 45 rescues undertaken up to the end of April (on top of last year's 136 rescues) it shows a huge commitment on behalf of all team members. Every team member going to Canada is also personally contributing toward the cost. As with all external training, they will be passing their increased knowledge on to the rest of the team in a series of sessions after they return.

The outcome? Keswick MRT will have a broad base of specialist crag skills of the highest order, equalling those available anywhere in the world and capable of safely and swiftly dealing with any crag rescue, on any crag and in any weather, to enable us to provide our casualties with the best possible potential outcome, as well as significantly reducing the risk to the rescuers themselves.



## Peter Bell receives Long Service Award

Peter Bell, creator of the eponymous stretcher, was presented with the award by Nick Owen, team leader of Langdale Ambleside, at the meeting in May.

Nick writes... While trolling through records to check for people worthy of MREW Long Service Awards, especially founder team members – this being LAMRT's 40th anniversary – I realised that Peter Bell would be amongst them. At the suggestion of Peter Smith, I dug a bit deeper and was reliably informed that Peter's first involvement with mountain rescue was around 1958. Peter was a founder member of the Langdale Ambleside team, but added so much more. He is obviously known for his stretchers, LAMRT first using one in 1972, but a read through early team reports shows that he also developed the 'Reviva' warm air device, first used by the team around 1975.

Although Peter stood down from 'active' mountain rescue about 1993, he obviously continued with his stretcher work (so not really becoming inactive at all!), and also became MREW President in 2005. It was a honour to be able to present Peter with his certificate at the Preston meeting.

Lakes, a walk he intends tackling over four days in August. But that's only the beginning. His most daunting target is to climb all the 214 Wainwrights. That's a challenge many walkers set themselves to do over a lifetime but James's ambition is to complete the lot before his eleventh birthday in January 2011. As an experienced walker he already had 90 ticked off and spent the school half-term holidays adding another five to his list. There might have been more but severe winter conditions forced him to make some sensible decisions and retreat to the valley when necessary. That still

leaves 119 summits to complete, so it will be a busy year for his young legs if James is to achieve his ambition.

Perhaps more daunted by the prospect of the year ahead is his mum, Michelle who follows on every expedition and up each mountain, trying to match James's energy and enthusiasm. And sometimes wishing her son would take up stamp collecting!



# OBITUARY

## John Milton Edwards Chairman of Oldham MRT

When I received the phone call from Colin informing me John had been found collapsed at work and unable to be revived, it just didn't sink in; even whilst I was making calls to other team members, I kept thinking 'Have I misheard Colin, have I got it right?'

To lose anyone is devastating; but John, to me, was somebody that if you cut him in half it would say OMRT through the middle – an excellent team member and a good mate.

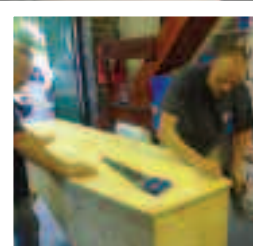
John joined Oldham in early 1991 and got stuck in from day one. He was our answer to Arthur Daley – always looking for a deal. He was instrumental in getting our new Land Rover's livery for free within a few weeks of joining. By 1992, he had taken on the role of Equipment Officer and, not long after that, became PDRMO Equipment Officer. In 2005 he became team chairman and stepped down as equipment officer, but he continued in the role with the PDMRO.

Oldham team have a knack of carrying out many difficult tasks (as do all MRTs) but when John's wife Mary asked if the team could take care of the arrangements (and we realised she didn't mean arrange for an undertaker) we were a little stunned, to say the least. After a quick meeting around the pub table (the usual method of MR business) a plan of action was put together. Andy (our team doctor) managed to make contact with a chap from the local St John Ambulance who just happened to be an undertaker and who was more than happy to give us help and advice. Without Darren's help things would have been a lot more difficult and we offer him our sincere thanks.

Jobs were tasked out to a small working group. Andy took on all the legal side of things, whilst Colin and I looked into making the coffin – in the end we opted to buy one online but, unfortunately, the one we picked was flat-pack and when we came to putting it together we found it was too wide for the Crematorium doors – so out came the tools to narrow it down! Nige drew the short straw to say a few words on behalf of the team and Jim drew the even shorter one and ended up in the vicar's role.

The day came when he had to be laid out – something none of us was looking forward to. The five of us have over 140 years of MR service, and have all seen things that most people never do; but this time it was a friend. One of the team members offered to drive us all to the chapel where John was waiting. Mary and the landlord from John's local pub had supplied us with enough whisky to embalm all five of us. In the end it wasn't too bad. Job done, we all had a final drink with our mate before leaving him for one last time. On the way home it was quiet until Jim broke the silence with, 'Well that was an honour,' and how right he was. Not many people can say that they have seen their mate off in a more natural way than we had just done. John, wherever he is, would have been sitting there (probably nodding off) saying, 'I knew I'd have you lot putting my shoes and socks on one day!'

**Mick Nield Team Leader**  
Oldham MRT



TOP: THE FUNERAL CORTEGE ARRIVES, WITH JOHN CARRIED IN OM3 TO THE CREMATORIUM  
MIDDLE: JOHN'S TEAM COLLEAGUES AND FRIENDS CARRY HIM PAST THE WAITING CROWD  
PHOTOS: WITH GRATEFUL THANKS TO OLDHAM EVENING CHRONICLE

BELOW: THE COFFIN UNDERGOES A FEW MODIFICATIONS

### Truly, a 'send-off' to remember...

This was one of those extremely sad occasions that was also very enjoyable, to see how in times of sadness the mountain rescue family pulls together to support and care for each other. The entire Oldham team (bar three who were out of the country) attended, but it was wonderful to see the number of other teams that sent representatives to pay their respects and show their admiration for John.

The cortège drove from The Clarence Hotel in Greenfield to Hollinwood Crematorium, with OM3 in the lead carrying John – there must have been over 30 vehicles in all. As it

proceeded from Greenfield we came to several road junctions where local police officers and PCSOs had stopped the traffic, forming very large queues, to allow the cortège to pass. As we passed the officers, who stood saluting every vehicle, I think we all had a very large lump in our throats as the once chattering voices fell silent and many sets of eyes began to well up.

Teams represented included all the teams from the Peak District Mountain Rescue Organisation: Glossop, Buxton, Derby, Edale, Woodhead and Kinder. Mid Pennine teams attending included Bolton, Rossendale and Pendle, Holme Valley and Calder Valley.

SARDA were also represented, including a number of search dogs. Some of our colleagues from further a field included Peter Bell (MREW President), Ray Griffiths (Patterdale MRT), Richard Terrell (Central Beacons MRT) and, from even further afield, Derek Keegan, who flew in that morning from Dublin, representing the Irish Mountain Rescue Association. Paul Moran from Dublin Wicklow MRT had also taken a detour on his motorbike ride down from Inverness on his way back to Ireland.

Once at the crematorium, all members from the MR teams went ahead of the family, where we made two lines to form a Guard of Honour. There must have been over 70 people plus search dogs. By the response from John's family and friends it must have looked wonderful, with Oldham team members all wearing their black polo shirts, specially rushed through for the occasion by Keela, followed by members from the other teams and the search dogs, who all wore their red MR jackets.

John's coffin was carried by members of Oldham team and, as his family and friends followed behind through the Guard of Honour, Boney M's 'Rivers of Babylon' played, bringing a smile to peoples' faces as the music blasted out. There was not even spare standing space for everyone inside – even the centre aisle was three deep, with a mass of red jackets.

Ex-Oldham team leader Jim Duffy acted as Master of Ceremonies for this celebration of John's life. Everything had been highly planned and it was a wonderful service which saw us one minute laughing at things John did or said, another minute shedding a tear. We sang some of John's favourite songs including Zulu Warrior.

The most moving part was John's wife Mary, who shared with us some very personal thoughts about life with John and some things we may not know like 'this was the first spontaneous thing he has ever done'. There could not have been a person in the building who was not moved by her bravery, honesty and the clear devotion and love she had for John. One of the most poignant points was her acknowledgment that she had on many occasions cursed the pager going off on those important days like their son Bob's fourth birthday – followed by John dashing off to another call out. But what she wouldn't give to hear it again; and now, after the way Oldham team

had pulled together and supported her and her children, she realised that in fact the team was as much a part of John's family, an important band of brothers.

Who from us could disagree when you looked around at the many faces, for me many I had known for 25 years, people whom I have known since I was only 17 and, even though I have not been an active team member for many years, there was something extremely moving to see us all there together supporting John's family and members of our own extended family – Oldham team.

After the service we all returned to The Clarence Hotel in Greenfield where we celebrated John's life in a way he would have enjoyed – lots of friends together chatting about the old days – sometimes sad stories but many happy, whilst sharing a beer. The weather was kind, which allowed us to fill the beer garden at the front of the pub and enjoy the sunshine as we reminisced. As the afternoon progressed into evening we moved inside where Jim again led this celebration of John's life; this time we sang some of the many songs John had loved, including the 'Oldham team song' and 'Climbing up the sunshine mountain' which saw us all standing on chairs as we sang. By 18:30 one of the staff from the crematorium had arrived with John's ashes – how's that for service? Derek already had him a place at the bar with a pint waiting – not many can say they got to their own wake!

As early evening moved on to late we left Oldham team members to continue their celebration. Although many tears had been shed it was a day John would have enjoyed, a fitting tribute to a dedicated mountain rescue man of twenty years. A man I had known for nearly as long, sharing a drink, a story and a joke with at numerous MR conferences. He will be missed.

**Diane Blakeley Bolton MRT**



PHOTO: WITH GRATEFUL THANKS TO OLDHAM EVENING CHRONICLE

## ▶ from page 9

James's other passion is reading but that doesn't keep him at home, he just carries the books in his rucksack! Michelle is very proud of James's achievements and his willingness to raise money for others.

Roger Bennett, speaking for Buxton said, 'We really appreciate the efforts of this young man and his mum to help the team. Last year's £500 was a very significant donation which will help the team to save lives. I don't think any of our members had gained so much mountaineering experience by his age and completing all the Wainwrights is a goal many of our team members still aspire to.'

Over Easter, the intrepid pair returned to the Lake District to scale the Eastern Fells around Buttermere. A particular challenge was High Stile Ridge which James has failed to conquer on the first two attempts because of bad weather, and this time he was successful. At the time of writing he had achieved his 98th Wainwright with Seat Sandal (near Helvellyn). I'm sure we all wish James and Michelle success with their challenge. If you would like to support them – and the Buxton team – please visit [www.justgiving.com](http://www.justgiving.com) and go to 'James Martin'.



NICK SMITH WITH SEARCH DOG ZAK AND THE COVETED NOVICE SHIELD

## BUXTON SEARCH DOG TEAM RECEIVE TOP AWARD

Nick Smith and search dog Zak made the coveted grade of 'Operational Search Dog' with flying colours in a recent assessment and their outstanding performance won a special trophy not awarded to any other dog unit since 2001. Earlier this year, in weather conditions that had most people staying in their homes, SARDA England held its annual assessment in the Lake District. With conditions ranging from sub-zero temperatures and deep snow, to torrential rain and gale force winds, the handlers and dogs were put through their paces. Each handler and dog team had to demonstrate, to the satisfaction of assessors from around the UK, that they can search and locate people lost on the mountains.

Just to be invited to an assessment meant they had already been scrutinised over a period of time honing their search skills. For assessment, dog teams are given an area on the mountain to search,

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within which there is an unknown number of 'casualties'. Nick and Zak, a three year old blue merle collie, had to demonstrate to the satisfaction of the assessors that they could clear the area and locate all the hidden people. The assessment was then repeated in a number of other areas over three days.

Conditions were quite difficult at times, but the pair performed so well in all their areas over the weekend that, not only did they pass, but they were awarded the Novice Team Shield. This award is not automatically given each year – it is only awarded to a handler who is grading with their first search dog and only when that search dog team performs consistently to the highest standard over the whole assessment.

Nick was quick to say, 'This is thanks to the support I have received from my own team, the other dog handlers in SARDA and the fantastic bunch of people who are willing to give up their time to lie on the moors in the wet and cold so we can train.

'We train at least twice a week in the Peak District and attend national training courses once a month. These are held around the popular walking areas of England and Wales from Dartmoor to Northumberland, and from the Brecon Beacons to the Lake District. In the Peak District SARDA handlers get great support from the farming community and organisations like the Peak District National Park and the National Trust for which we are very grateful. Without regular access to large areas of moorland we wouldn't be able to train.'

Nick and Zak join Malcolm Bowyer with search dog Cap, and Dave Mason with Megan. The Buxton search dogs were kept busy attending twenty-two incidents in 2009, and 17 already this year.



TURNING KISSES INTO CASH – MICHELLE PLANTS A SMACKER ON FARMER THOMAS REBANKS FROM BROWN RIGG HOUSE, MATTERDALE  
PHOTO: DAWN ROBERTSON

## NORTH EAST

### A THOUSAND SMACKERS FOR SWALEDALE

Michelle Buckle from Stainmore raised nearly £1000 for **Swaledale MRT** by selling kisses for £1.20 each. The charity kissing marathon actually took place throughout May and was a highlight at the Tan Hill Swaledale sheep show at the end of the month. Michelle was helped in her efforts by Emmas Maughan, manageress Sarah Saul and landlady Tracy Daly.

## NORTH WALES

### MBE FOR ROGER JONES, OGWEN VALLEY MRO

Chris Lloyd writes... Roger, now 65, was brought up in Penmaenmawr (on the coast just North of the Carneddau). He became involved with the Scouts and was soon using the newly built scout hut, Hafod, just a couple of hundred yards down the valley from the private mountaineering school at Ogwen Cottage being run by Ron James. Roger was one of the first, and one of the youngest, to attain the Scout Mountain Leader qualification... about twenty years before the MLTB was set up! Ogwen Cottage was a Mountain Rescue Post from which, due to the hard core of climbing instructors based there, developed the Ogwen Cottage MRT. When they were short of manpower, they would call upon scouts from Hafod, and thus Roger became involved with MR.

When Ogwen Cottage was sold to Birmingham Education Authority, and the staff consequently given school holidays, the valley was denied its mountain rescue team. Ron James decided to set up Ogwen Valley Mountain Rescue Organisation and Roger signed up straight away. At the same time as working as a lab technician for the University of Bangor, getting married and bringing up three children, buying a house in the Ogwen Valley which he renovated and extended, he has been devoted to mountain rescue and the Ogwen team. He became a team leader very early on; a post he maintained (bearing in mind in OVMRO team leaders are critically reviewed every three years to assess whether



ROGER JONES MBE

they be reappointed) until resigning/not seeking reappointment earlier this year. I am sure that Roger has served on the committee in one post or another for about 45 years. He has been equipment officer and chairman, and loves his role as transport officer and ordering custom built Land Rovers!

He has led the team from the front, on the hill. More recently, he has been able to delegate this to younger leaders, but is still able to lead from the base, ensuring the hill team is fully supported and that there is co-ordination with other emergency services. He is a regular delegate at mountain rescue conference and also regularly attends IKAR. He is friends with the MRT in Chamonix and has good contacts in Croatia too.

Team members are thrilled that Roger has been recognised for a lifetime dedicated to rescuing people in distress in northern Snowdonia for about 49 years. Whilst he tried to suggest that MR was a team effort, he was reminded that MBE stands for My Bloody Efforts and they certainly have been. Of course, he has been superbly supported by his wife Jill, who can at last buy that new dress we promised her about six years ago when we first started this ball rolling.

## YORKSHIRE DALES

### UPPER WHARFEDALE PAY TRIBUTE TO KEN SMALLPAGE

Ken died in May, aged 89. A founder member of the team, he had been an expert climber from an early age. With his friend Len Huff, a keen potholer and walker, he'd set off to the hills at any opportunity, but it was during the summer of 1948 when he experienced his first taste of mountain rescue. On Old Cote Moor, near Kettlewell, he and Len came across a lamb that had evidently fallen some 25 feet down an old lead mine shaft and made the difficult descent down the shaft to bring out the frightened lamb, none the worse for its fall. Just a week later, the pair carried out a similar rescue at another old mine shaft. Both incidents were reported to the local police – a precedent had been set.

A short time later, in early August, the police contacted the pair to help search for a walker, reported missing in the Starbotton area. Joined by ten other local men, they set off with the police to search for the walker. Unfortunately the man's body was found at the base of a rock escarpment.

Until the police forensic team could arrive, Ken and Len stayed with the body, reflecting on their recent activities. They decided there was a need for a rescue team to help the police in the Upper Wharfedale area. The inaugural meeting of the

Upper Wharfedale Fell Rescue Association was held on 30 August 1948, with Ken as its leader.

Setting up as they had with just one first aid rucksack, a manila rope and a rope ladder, the men's wives, including Mrs Smallpage, lent their support, raising money for vital equipment. The following year he helped rescue two climbers stranded on Kinsey Crag, which required him to be lowered some 80 feet down the rock face for which he was awarded a Vellum Testimonial by the Royal Humane Society. Later that year, the team was back on Kinsey Crag to a sheep stranded on a ledge for which he was awarded a bronze medal and certificate from the RSPCA.

In 1951, business interests took Ken away from the Dales and the team made him a life member. He received a Queen's Golden Jubilee Medal in 2003 from the Lord Lieutenant of North Yorkshire, Lord Crathorne, at a ceremony in Grassington, for being 'a committed member of a recognised mountain rescue team' and in September 2007, he received the Long Service Award in recognition of fifty years in mountain rescue. The following September, Ken was presented to the Duke of Gloucester at the 60th anniversary of the inauguration of the Upper Wharfedale Fell Rescue Association.

The team remains justly proud and privileged to be a part of what Ken and his contemporaries worked so hard to set up.

# FAIRTE



## IRELAND & UK MOUNTAIN RESCUE CONFERENCE 2010

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**Venue:** Dublin City University  
**Event Code:** IO 1615 3875  
**Latitude:** 53°23'10.38N 6°15'18.46W  
**Website:** [www.mrconference2010.ie](http://www.mrconference2010.ie)

### Delegate Rates:

#### Organisation

##### DELEGATE FULL CHARGE

	Sterling	Euro
Mountain Rescue Team Members	£85.00	€95.00
Non Mountain Rescue Team Charities	£170.00	€195.00
Company / Non Charity Delegates	£260.00	€300.00

##### DELEGATE DAY CHARGE

Mountain Rescue Team Members	£40.00	€45.00
Non Mountain Rescue Team Charities	£70.00	€80.00
Company / Non Charity Delegates	£100.00	€114.00

'Mountain Rescue - our future role' is the main theme for the event but the 450 delegates will also hear national and international speakers on mountain rescue medicine and equipment and see the latest technology in action over the two days. The conference also gives delegates a chance to share experiences and knowledge with colleagues from around the world.

The conference is expected to be over-subscribed but spaces are currently available at £85.00 / €95.00 per person for members of mountain rescue teams, which includes accommodation and meals. For more information or to download a booking form log on to:

[www.mrconference2010.ie](http://www.mrconference2010.ie)



## MID PENNINE

### AN UNUSUAL REQUEST FOR CALDER TEAM MEMBERS

Wayne Ogden writes... Back in October 2009 Ann Ogden, secretary of **Calder Valley SRT**, received a phone call from Patricia Wood, the activities coordinator at Rowanberries Methodist Homes Extra Care Living in Bradford with an 'unusual request' on behalf of one of her clients. The lady in question Joan Hutchinson, aged 67, was a one-time keen walker who unfortunately had contracted Parkinson's Disease which had greatly affected her mobility. One of her favourite walks was to Stoodley Pike, a 1300ft hill familiar to any Pennine Way walker due to the 121 foot-high monument standing on the edge of the escarpment which drops steeply towards Todmorden and the Calder Valley below. Joan thought she would never go up there again.

Pat told Ann about a scheme called 'Seize The Day' where residents in the Methodist Homes were granted wishes. Joan had asked if it would be possible to enjoy once again one of her favourite views – that of the Calder Valley from Stoodley Pike – and would we be able to carry someone UP the

hill rather than our more usual task of carrying someone down on a stretcher.

How could we refuse such a request? The team responded positively and everyone was keen to ensure that Joan's wish did indeed come true. So began months of planning.

A suitable date was set, the numerous routes up to the Pike assessed and the best one chosen, and Joan visited the rescue base for a stretcher 'fitting.' Also, having got her up there, we would have to get her down again. Luckily for us, a recently constructed, newly surfaced path could not have been better placed to bring her back down.

Somewhere along the way someone had the bright idea of actually getting Joan up the monument as well! The spiral staircase and 39 steps to the balcony, some 40 feet above ground level would have proved quite difficult, so we opted for the 'easier' option of setting up a cableway to haul Joan up to the balcony. The 'dry run' for the cableway was anything but!

The week before saw team members battling high winds and driving rain to ensure it would all go to plan on the day. Fingers were duly crossed and prayers said for a much better day weatherwise.

Saturday 10 April arrived, and luckily so did the weather – blue skies, warm sunshine, and a good forecast for the day. Joan arrived at 10.00am at the rescue post and was immediately set upon by the BBC Look North cameras and the local press, who unfortunately all had to rush off due to some up and coming election nonsense. Nevertheless the subsequent publicity spread the news of the event far and wide. Once the media had had their fill the real task in hand could begin.

Firstly Joan and her friends and family were transported by team Land Rovers to a point where the open moor began. She was then transferred to the team's shiny new McInnes Superlite stretcher, complete with wheel, for the onward 1km carry along the Pennine Way to the Pike. Meanwhile a 'rigging team' had been hard at work setting up the cableway using many black arts and even the odd ladder! By the time the stretcher party arrived at the Pike everything was ready for the haul, but had to be

delayed due to a surprise visit from X-RAY 99 the West Yorkshire Police helicopter. Joan was given a VIP guided tour of the aircraft and the crew entertained the onlookers with a fly-past as they left to attend an incident.

The haul went to plan and Joan got her wish! She stood on the balcony and took in the fine views she thought she would not see again. She was able to walk round the balcony accompanied by her friends and family. An intrepid photographer from the local paper had made his own way up and was able to capture the occasion. His efforts certainly paid off as his pictures (and our work) appeared in at least two national papers.



When Joan decided she was ready, she was once again loaded into the stretcher, lowered back to terra firma and then carried down to a waiting Land Rover, conveniently now repositioned and transported to refreshments at a local team member's home.

So Joan got her wish and 'seized the day', the team got plenty of publicity both before and after the event with both local TV and radio slots, and national, as well as local press coverage. But most of all, we all got that extra special feeling when you know you have made a difference to someone's life. We can all get that feeling on a particularly memorable rescue, but to get it from doing something which started with that unusual request, way back in October last year, was different entirely.



# Brecon MRT

by Mark Jones

With a primary area of around 2,000 square miles, Brecon Mountain Rescue Team works a very diverse area – stretching from the Brecon Beacons in the south, the English borderland to the east, Cardigan Bay to the west and up to the north of Powys. We cover a wide variety of terrain – from the steep north faces of the Brecon Beacons themselves, to the navigationally challenging moorland of mid-Wales where you can walk all day without seeing another person. The size and variety of the area can present its own challenges.

Since the start of the 1990s the number of incidents the team responds to has climbed steadily from twenty calls a year to around 90. Like most teams we are being called, with increasing frequency, to non-mountain related incidents. Over the past two and a half years we've clocked up nearly 6000 man hours and attended over 200 calls. Roughly a third of those were either lowland searches or river related incidents.

The nature of the calls we now attend can sometimes be surprising, and are not always what the public might associate with the function of a mountain rescue team. In the past, we've been asked to locate a WWII bomb and secure the site until the bomb

disposal team from the Royal Logistics Corps could defuse it; we've been called to assist the Ambulance Service in bad weather, to the more commonplace search for despondent members of the public.

Probably the most remarkable incident this year, or in fact ever, was the recent call to the scene of a car crash. A single vehicle left the road near Staylitle in the north of Powys. The BMW Z3 convertible mounted the crash barrier and plummeted 270ft to the stream below. Police, fire, ambulance, mountain rescue and a Sea King from RAF Valley all responded to the call. Everybody suspected the worst. However when rescuers reached the couple, they found that the driver had suffered a suspected fractured clavicle and had a cut to his forehead and the passenger was unhurt. Both had managed to get themselves out of the car and were found sitting on the bank looking rather shaken! How the couple survived the accident is inexplicable, but they are clearly exceptionally lucky people.

Over the years we have learnt that we have to be ready for anything. Brecon team is constantly trying to make improvements to the way it trains its members. Ten years ago we developed river bank searching techniques and structures. These are now being adopted by many other teams and are currently being promoted by the MREW Water Officer. The team has also been instrumental in developing the Quo Sarman software that you are all now familiar with.

Hopefully you are all feeding back any suggested improvements so we can get it working exactly as we want it! We are always looking for ways to improve. One of our team members is currently developing bespoke training record software to help training officers across the UK keep on top of individual team member training (and hopefully 'protect' the team in the event of anything unexpected happening).

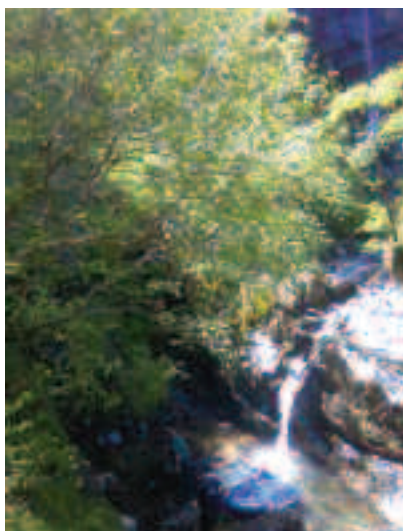
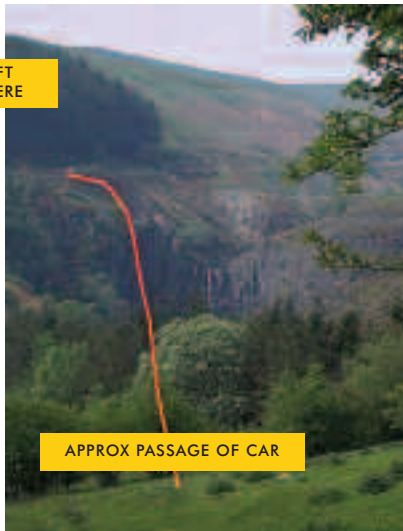
Probably the most important and innovative change that Brecon has been part of goes back nearly fifteen years, when we and our neighbours decided to look again at the way we respond to calls. Brecon MRT is part of the South Wales Search & Rescue Association (SWASRA) which, amongst others, includes Central Beacons MRT (Based in Morlais, Merthyr Tydfil), Longtown MRT (now based in Abergavenny) and Western Beacons SART

(based in Bridgend). There is nothing remarkable about this in itself; every region in MR has an association. Like most of these regional associations we get together a few times every year (four times in our case) and talk about politics, constitutions and other stuff that, quite frankly, we all wish we could do without. However, we also talk on an operational level – because we work so closely together on calls.

Historically, each of the four south Wales teams had their own areas and other teams rarely operated in someone else's area and when we did it was by invitation only. This system was flawed in a number of ways. Sometimes it is quicker for another team to respond to the more distant parts of our area (and vice versa), some of our team members live in another team's area (and vice versa) and sometimes police operations rooms would call out the 'wrong' team, slowing down the whole response. There has never been any doubt that all teams want to provide the casualty with the best 'service' that mountain rescue can offer and yet 'boundary reviews' are something of a taboo subject. So instead, after much debate, we came up with the 'Area Call' system.

The Area Call started as a way of getting as quick a response as possible to a casualty whose location was known. For example, if a walker was reported to be suffering from chest pains on Pen y Fan, instead of a single team response, it is now normal for the coordinator from the team covering that area to page all 120 members of the SWSARA mountain rescue teams on a common pager number. The 'Home' team responds with its control vehicle and any of the available 120 people who are within around 45 minutes driving time of the RV are expected to respond.

The first Incident Controller (IC) at the RV takes charge. This may not be someone from the home team – though, out of courtesy, control is usually offered to the home team when they arrive. Interestingly, this is generally declined, or the incident is run cooperatively, as this provides better continuity to the incident. Mixed teams are tasked as resources arrive and the first party leader at the cas site becomes the On Scene Commander (OSC). Again, this is regardless of which MRT he or she originates from. On the face of it, it might be fair to assume that we get too many people responding to each call, but this is not the



TOP: FWRDD FAWR WATERFALL NEAR STAYLITTLE

RIGHT: THE BMW Z3 CAME TO REST IN A PLUNGE POOL – A POLICE OFFICER AND PARAMEDIC INSPECT THE DAMAGE





LEFT: A TECHNICAL RESCUE EXERCISE INVOLVING MEMBERS OF THREE TEAMS ABOVE: PEN Y FAN IN THE SNOW BELOW: BRECON MRT ON OPERATIONS IN THE BRECON BEACONS

case. As mentioned earlier, we are getting so many calls, that this system helps address any shortfall teams may be experiencing. We also send out a 'No further personnel required' message, when there are enough resources at the casualty site. This way team members are not responding unnecessarily and roadheads don't get too congested.

In SWSARA we've found that this system works so well that we're now using it to support each other for searches as well. This is a particularly useful system for searches when there is a week day call. We have found that team members are finding it increasingly difficult to get away from work, leave the family (again), and so on. It does require the cooperation of all the teams concerned and all the individual coordinators for this system to work. Obviously, it is not without its problems, but so long as everyone involved remembers they are there to serve the casualty and leave politics out of it, then it works well. There are healthy working relations between the teams, both in the control vehicle and on the hill. We're always learning more about how the other teams work, the kit they carry and we often talk about developing common systems, equipment bag contents and even names; but this would just be the icing on the cake.

So in a nutshell, Brecon MRT, along with the other teams in south Wales, has managed to retain its identity and develop in its own way, whilst still being part of the bigger picture. It is immensely satisfying to deal with a call professionally and efficiently and we have had casualties comment on the swiftness of the MR response.

Recently we were called to an incident where a member of a school group had broken her ankle just off the summit of Corn Du. This is one of our more readily accessible peaks, being about 40-45 minutes walk from the road. As a coordinator from Brecon MRT, I spoke to police control room and immediately put out the Area Call to the four SWSARA teams. A member of Western Beacons SART, who works for the National Trust, was repairing a footpath nearby and was with the casualty within ten minutes of the teacher dialling 999.

Having spoken to members in other teams, from other areas, it would appear that a lot of teams are finding the general increase in calls demanding. Employers are finding it harder to justify releasing staff and we're all struggling to justify leaving the family so frequently. So to those teams who don't know which way to turn, I would recommend that you look to your neighbours.



# Cave radio - fifty years of development

by Mike Bedford

Although generally known as cave radios, these devices are actually low frequency inductive communication systems. Whereas normal radio cannot penetrate conductive media like rock to any great extent, low frequency radio permits through-earth communication. The snag is that it needs huge antennae that are totally impractical, especially underground but, by using compact loops or earth electrodes, inductive communication is possible. While subtly different from true radio, and severely limited in range, it offers sufficient range to transmit between a cave and the surface.

Cave radios transmit signals through solid rock to provide communication between a cave and the surface, something that isn't possible with ordinary two-way radios, unless line of sight is possible, and this generally isn't the case in most, if not all, caves. They play an essential role in coordinating a rescue by permitting a surface controller to talk to a team underground. By allowing rescuers to summon additional manpower or equipment, or to request medical assistance to be readied prior to a casualty being brought to the surface, they've assured a successful outcome in rescues that might otherwise not have gone so smoothly. Cave radios have had limited commercial application so their development has mainly been carried out by cavers themselves. British experimenters were among the first to perfect the technique.

## The telephone alternative

Before the cave radio came along the only option for cave communication was using a field telephone, usually obtained from a war surplus yard or, if that failed, it was down to using 'runners' - fit cavers travelling through the cave system, relaying information. A development from the field telephones - which used two wires laid from the entrance down through the cave system, perhaps through hundreds of metres of tortuous passages, to the place of the incident - was the single-wire telephone. Again, it was far from ideal, but at least only a single wire had to be laid from the cave entrance - half the

weight, but still the same hard work!! In the interests of conservation it also had to be removed afterwards. Perhaps the biggest drawback, though, was the likelihood of damage to the telephone line as more rescuers followed into the cave, often by crawling or squeezing over the cable. It's surely no understatement, therefore, to say that cave radio revolutionised cave rescue.

## Early beginnings

From the early 1960s caver Harold Lord, of the Mines Research Establishment in Sheffield, experimented with cave communications. This work culminated in the Inductorphone that allowed speech communication to and from caves. Innovative as this pioneering work was, the equipment was heavy, it was power-hungry so requiring large batteries, and needed huge loop antennas. Sadly it didn't offer a practical solution for the cave rescue community.

## The Molefone

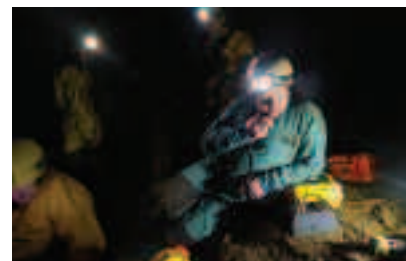
The first cave radio to be used extensively by UK cave rescue teams was the Molefone, developed by CRO member Bob Mackin of Lancaster University and introduced in the late-70s. For the first time it was possible to communicate between cave and surface with portable equipment. Communication to a depth of over 100m was achievable. The Molefone formed the mainstay of cave rescue comms for over two decades but only a few teams were lucky enough to use these units.

## The HeyPhone

In the late 1990s the BCRC set up a team to work on a new cave radio. Based on a design by Leeds-based radio amateur John Hey, it became known as the HeyPhone. Introduced in 2001, it is now in use by most of the UK's cave rescue teams, all of those units having been hand-built by John. By using earth electrodes instead of loop antennas, communication range is greatly improved

## System Nicola

In parallel with the development of the HeyPhone, British caver Graham Naylor, at the time living in Grenoble, developed System Nicola, now used extensively in France. The Mark III version, currently undergoing tests, has broken new ground in providing much of the functionality in software rather than electronic circuitry. This will offer an unprecedented level of flexibility and provide new features such as text messaging.



THE HEYPHONE IN USE IN PEAK CAVERN, DERBYSHIRE

# Surface, surface... this is Cave One, over...

by Jon Whiteley

This was the call we all waited to hear during the British Cave Rescue Conference - at The Nightingale Centre, Great Hucklow, Derbyshire just over a year ago in May 2009 - whilst testing the new System Nicola Mk3 Cave Radio. The sun shone for most of the weekend, not that this made any difference to those underground, raising their heads above the surface only to consume the odd pint of beer, or two or three.

One of the key sessions was to update member teams on the future of the cave radio project, now nearing completion. Pending satisfactory testing throughout 2010, the plan is to issue all the UK teams (including Scotland and Ireland) with a number of new cave radios in 2011. Teams will supplement their needs on top of the national allocation as they see fit. Now the technical knowhow of

being able to communicate from the depths of a cave or mine to the surface and vice versa for many is somewhat of a 'black magic art', but it works and that's the main thing!

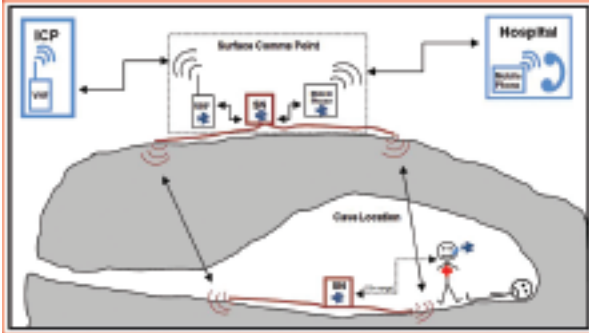
Mike's article gives some of the history of cave communications over the last 50 years. Most but not all of the UK's cave rescue teams have been using the Heyphone, developed by John Hey and very much built on the

workshop bench. These sets are now needing replacement, parts are becoming harder to source and, with new technological developments, the time is right to replace these aging units with a more reliable and updateable system.

The System Nicola Mk III (Nicola) is the system of choice and BCRC, along with our French counterparts Speleo Secours Francais

have been supporting and jointly financing the early development stages of the project, led by the designer and developer Graham Naylor. Graham has been key in the development of the Mk I and Mk II version's of the Nicola, which came to life after the tragic death of a young lady, Nicola Dollimore, from Rossendale and a member of Oxford University Caving Club back in 1996 whilst on an expedition down the Gouffre Berger, in the Vercors region of France.

In general, we think of the current Heyphone and the future System Nicola Mk III as radios, but the way they communicate with each other is not the same way as a normal mountain rescue team member's radio – these send or transmit a signal through the air



and, as we know, another set receives the signal and comms is established. Using any normal VHF type radio underground suffers the same problem as the loss of the radio signal as you drive through a tunnel whilst listening to Terry Wogan on a Sunday morning on Radio 2. A standard radio signal does not transmit through solid lumps of rock so, with some really clever electronics and understanding about geology and how we get signals to pass through solid rock we can get cave radios to work. As a general rule, cave radios change speech into packets of data and then use ground penetrating antennae to 'inject' the signal into the earth from the surface radio as a magnetic wave. The receiving underground radio picks up the wave and transfers the data stream back into speech.

The Nicola Mk III is now much more compact than any of its predecessors and the Heyphone, and uses digital technology at its heart. In fact it's so compact that it is smaller than many VHF radios. The whole unit fits into an IP67 case measuring 5.5" x 3" x 1", very much pocket size. One of the aims is to allow the unit to be worn in a bandolier-style holster when using it in receive pager mode.

The Nicola has a number of benefits over the current technology. It is designed so all the components are surface mounted. The system relies on programming a series of chips rather than using individual components to create the circuits, which means the units are upgradeable and, in fact, all the programming will be via Bluetooth. Another key aim is to minimise the number of possible water ingress points, although any that are required will have waterproof glands. The Mk III will have two screw terminals required to connect the transmit and receive antennae – these are single thin lengths of wire and most teams will use two 20m lengths or a loop antenna. There will be two further terminals for recharging of the internal batteries and the unit will also be able to use external power sources.

Where other cave radio predecessors have needed ports and switches for the likes of microphone connections, speakers, knobs and buttons etc the Mk III will use Bluetooth to communicate to users' headsets, of the type you may use when driving. Also we

will be able to build a network of communication devices, the Mk III will be able to be linked to a mobile phone, a VHF radio, a PDA, a laptop or camera etc. The facility of linking to a VHF or phone, including satellite phone to a surface Nicola will now mean, for example, that an underground carer could contact a local hospital consultant asking for medical advice, or allow the casualty to speak direct to a relative/friend.

The Mk III will also be able to send packets of data, and planned upgrades will include being able to text message from deep within the cave. The unit can also be used to radio locate on the surface specific areas of a cave system, which could be useful in the situation where a shaft would need to dug (mined) to enable a casualty to be evacuated.

The Nicola Mk III is compatible in frequency to, and so will operate alongside, the earlier Nicola Mk I and Mk II and also the Heyphone, so teams in the UK and further afield will be able to mix and match units. The range and clarity is expected to be greatly improved with the new Nicola, and due to the digital nature of unit and the ability to be able to filter out unwanted noise, users should be free of the 'galloping horses' noise of the Loran Beacon.



LEFT: GRAHAM NAYLOR TESTS THE DEVELOPMENT MODEL IN PEAK CAVERN, DERBYSHIRE. THE NICOLA IS SEEN IN THE FOREGROUND RIGHT: THE NICOLA MK II VERSION IS USE

## Devon CRO supported by SEA and SEA

Devon CRO has been supported for a number of years by Sea & Sea Ltd, based at Paignton in Devon and now has a large number of waterproof cases for radio equipment, Little Dragons, first aid and comfort kits etc. With the recent issue of laptops to teams, we were considering using a larger version of the cases currently in use, to protect the laptop. Once again we looked in the direction of Sea & Sea.

Dave Millin, a team member of Devon CRO and owner Sea & Sea Ltd (who are sole importers and wholesalers of a range of recreational diving equipment) thought it time also to support teams by making an offer of a substantial discount on the complete range of products they stock. View the full range at [www.sea-sea.com](http://www.sea-sea.com)

One of the key products is the waterproof and shockproof Underwater Kinetics dry case. This IP 67 compliant case is the fore runner to all other cases of similar design and will certainly take the punishment of a big beefy team member, whilst protecting the contents. One of these was available for inspection at the laptop handover day at Preston in May.

A number of teams have already followed Devon CRO's lead and taken up the offer at a once-in-a-lifetime extra special deal of VAT and delivery FREE (ordered before 4 June) and purchased the 518 (model).

The 518 Ultra Dry Case seems to be the perfect size, giving ample space for the laptop, together with leads, broadband dongle, mouse etc etc.

The range of Ultra Dry Cases come with 'pick and pluck' foam, so can be customised to the team's own needs, they also have a double catch – the first stage allows the case to 'de-pressurise', the second stage allows it to be opened fully. Certainly not as fiddly as some other makes that have turn valves to allow pressure equalisation of the case. The cases ordered so far come in yellow (but also available in black), so are easy to spot at a distance.

A small number of teams have also ordered a slightly larger case – the 821 Ultra Dry – for the storage and transportation of a small all in one type of printer, scanner and copier.

The 518 Ultra Dry special price is £81.08 plus VAT at 17.5%, plus carriage for delivery to a UK mainland address (Normal retail: £133.95) and the 821 Ultra Dry is £104.79 plus VAT plus delivery (Normal retail: £172.95).

This offer, for the Underwater Kinetics cases and any other products from the Sea and Sea range, is a long term offer and teams can request prices and order at any stage. Dave and the team at Sea and Sea can be contacted on 01803 663012 or via [sales@sea-sea.com](mailto:sales@sea-sea.com) or [info@sea-sea.com](mailto:info@sea-sea.com). When ordering, please ensure you request the Special MR and BCRC price.

**Jon Whiteley** Rescue Controller  
Devon CRO



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## Sun shines for CRO on their 75th Anniversary celebrations

The Cave Rescue Organisation (CRO) held a street party at their depot in Clapham on Saturday 5 June, to celebrate their 75th Anniversary. And, with the sunshine came the crowds as team members and their families, locals and visitors joined in the fun. Members of other cave and mountain rescue teams also attended including Dr Peter Temesvari from the Hungarian Cave Rescue Team. He said 'It's my first time here and I'm very impressed at the level of community support for the team. It's a great event.'

CRO were also honoured to welcome Peter Bell, president of Mountain Rescue England and Wales, who said, 'I think today's event has been a tremendous success and it's extremely encouraging to see the support from Dr Farrer and the local community. It's certainly brought the work of CRO to the surface and it's been a unique chance for people to see what the organisation is about.'

The children enjoyed the climbing tower, bouncy castles and balloons, delicious tea and cakes were available and the BBQ was a great success. There were tours of the depot and equipment demonstrations and a chance to meet Search Dog Tara.

The key focus of the day was to formally open the new extension to the depot, added last year to update the training, control and storage facilities. Chairman Jack Pickup acknowledged the contribution from Jack Myers, and the funding from the West Riding Masonic Charities, that made the extension possible and then accepted a cheque for £1,130 from Kathryn Richardson from the HSBC bank in Settle, who had raised money with a sponsored walk across Morecambe Bay.

Jack also paid tribute to team members past and present and announced that their work had been honoured as the team have just been awarded the Queen's Award for Voluntary Service, the equivalent of an MBE. Then Dr John Farrer kindly cut the police tape to officially open the depot.

Highlight of the day was the rescue race where four teams raced through obstacles placed along the stream bed flowing through the centre of Clapham, carrying a stretcher with a dummy in it. As the stream is very low at the moment, members of the other teams helped soak the racers with buckets and wellies of water. The Girls' Team of Jude, Jane, Heather and Duncan (honorary girl!) raced to victory and celebrated with a glass of Rescewe Ale! This beer has been specially brewed by Dent Brewery to celebrate the 75th anniversary and they will make a donation for every pint and bottle sold.

summing up the celebrations, Jack Pickup said, 'It's been an amazing day. I'd like to thank everyone who has given their time to help bring this event to fruition, plus everyone who has come from far and wide to support us.'



STRETCHER HAUL AND BARROWBOY DEMO IN THE NEW TRAINING FACILITY

The Duke of Kent paid a visit to the CRO depot in Clapham in May. He was welcomed by pupils from Clapham Primary School as he made his way into the HQ to meet the team and tour the building.

The Duke was introduced to team members along with team president, Dr John Farrer, Frank Royston – who at 85 years old is the oldest former member of the organisation –

## Duke of Kent drops in to Clapham

and Zoe Ketteridge, who was rescued by the team on Valentine's Day last year when she sustained head injuries walking on Whernside. He also met James Garth, Worshipful Master of the Wenning Lodge of Freemasons, who was responsible for securing funding from the West Riding Masonic Charities which, along with a bequest from Jack Myers, was used to pay for the extension.

During the tour, team members took The Duke through the sequence of a rescue, from initial callout by the police, rescue planning and management through to searching and locating the casualty. He was shown the different types of communication systems, including the HeyPhone and the Nicola Mark III, now in its final testing stages. He saw how the team work in caves and difficult terrain with regards to medical techniques and their

specially designed rescue equipment. A dummy was hauled up the training area in a Bell stretcher to show how a casualty would be extricated from a vertical ca\$ve and a demonstration of cave rescue engineering, following which he met two of the team's search and rescue dogs.

After unveiling a plaque commemorating 75 years of the Cave Rescue Organisation The Duke was presented with a book 'Race Against Time' which covers the first 50 years of the CRO, three bottles of Rescewe Ale and a box of scones baked by Jenny Holmes, wife of team member Roy Holmes.

Chairman Jack Pickup said, 'It was a great honour to meet The Duke and an ideal opportunity to show him the techniques and special equipment we have developed over the years – not something he will see everyday.'

# MOUNTAIN AND CAVE RESCUE AWARENESS DAY 2010: UPDATE

Our first ever national 'Flag Day' in May prompted a range of activities from rescue teams across the country... here's some of the highlights...



Dartmoor SRT on the A30 near Okehampton

North Dartmoor SRT held a very successful bucket collection and windscreen wash at two of the service stations on the A30 near Okehampton. The team raised nearly £800 and also raised awareness of what we do. People travelling from their Bank Holiday breaks were very generous and a good day was had by all!!

Derby MRT set up in Dovedale with team vehicles, display boards and equipment and collected £438. During the day, a member of the public alerted the team that her husband had tripped and injured his ankle. He was examined by team members then stretchered across the River Dove to the team Land Rover and taken to the car park. The family then drove to the nearest A&E where the casualty was found to have a spiral fracture of the ankle.



Derby team members set up shop in Dovedale

Kinder MRT collected £600 at Sainsbury's Hazel Grove on the day.

Rossendale & Pendle MRT organised a sponsored abseil from Peel Tower, Holcombe Hill.



Nope... still not doing it...

Bolton MRT displayed all four vehicles at Rivington Barn and, besides raising public awareness and dodging hailstones, raised £138.74 from public donations and sales at a secondhand book stall.



Langelale Ambleside MRT at Gaynor Sports

## The Woodhead story by Andy Simpson, Woodhead MRT

It's Bank Holiday Monday, 3 May 8:00am. Team members assemble at base. A sense of anticipation, excitement and rain in the air, but wait, that's only part of the story...

It all started with an unassuming message in the inbox. 'It's an all day event where there will be national MR press coverage, a bit like a RNLI flag day,' ran the email. 'This is an opportunity to raise our profile locally, regionally and nationally... Volunteer needed to organise.'

The National Park Ranger had already confirmed we could use Langsett. I figured all the hard work had been done, so I volunteered. Then I told my wife.

'...but we've got the whole of March and April and most of February to get it sorted,' I said. 'Better get started then,' came the reply.

As a professional project manager, used to running multinational, multimillion dollar projects, this looked like a walk in the park (pun intended). I unleashed my years of experience and took stock of my scope, budget and time frame.

Scope: Design and run an award-winning event to raise public awareness of Woodhead MRT specifically and mountain rescue in general. Do this in the full glare of local and national media. Raise as much money for the team as possible. Budget: None! Time frame: Eleven weeks!

Okay, so perhaps more like a walk up a reasonably steep hill. Against the wind, with full hill kit, and the stretcher. With someone on it!

But what followed was really quite amazing.

## Plan, re-plan and plan again

Ideas of the things we could do started coming in from the team. People took responsibility for key aspects of the day and sponsors began to come forward. John Simpson offered to run a plant stall; Greenacre School allowed us to use their orienteering course; Hade Edge Band agreed to come and give a performance; Tony Sturdy and friends agreed to come and play for us; Cubley Hall provided a bottle of wine; Simon Blyth Estate Agents provided the balloons; Penistone Co-op gave us four tins of sweets; J&R Gases provided half price helium; Community First Responders agreed to come and train people in basic first aid; Penistone FM promoted the event, ran articles about the team and attended for most of the day; Yorkshire Water made a very generous donation to cover costs and provided some more balloons; Bank Side Cafe provided team butties, tea and coffee and the prize cake and The Huntsman at Thurlstone provided a prize of a family meal for four.

I think the best advice I received was to 'keep it simple.' As a team we bounced around loads of ideas and dismissed some of the more extreme suggestions... 'But why can't we lower the public in stretchers down the quarry?' ...'What about a water rescue demo, with a real volunteer victim?... mmm...

About 100,000 texts, countless emails, hundreds of hours on the phone (and that was just from Wayne!) and several team meetings down the pub, we eventually got to a point where we



...and the band played for Woodhead

had a workable list of events, mainly with owners!

We unleashed Wayne on the media, handed out roughly three million posters and flyers, everything and everyone was in place and finally the day dawned, cold, slightly dull and overcast.

### The day arrives!

Thanks to planning and team work, the set up went very smoothly and we were up and running, as planned, by 10:00am. Now all we needed were people to appreciate all the hard work. They started to arrive and actually take an interest in what we were doing. The team was working well, talking to people and showing them what we do. The weather was being kind. One of my biggest fears, that people wouldn't know to go into the barn, was turning out to be unfounded with a steady stream of people coming through the doors.

Penistone FM were really plugging the event with live broadcasts which were sounding excellent on the radio. The Community First Responders were receiving a steady stream of people. They issued over 50 certificates on the day. The map reading and compass work inside the barn was popular – you never know, we might have fewer people to go look for in future! And then it rained. And did a bit of hail-stoning. But it didn't seem to matter, and it stopped eventually.

Dr Spencer Pitfield came to visit and offer his support. The Observation Test was showing people the skills required to spot things that 'don't belong' – an essential skill when searching. It

was made up of the sort of things you should take with you onto the hills and teamed with the search dog demos that are always well received. It's fantastic watching Dodge at work and he was looking smart in his best dress uniform.

The outside display area was working well too. 'Find the Walker' looked great in its new format. In a change from tradition, the 'lost walker' was on a photo rather than a map, along the same lines as 'spot the ball.' Loads of people had a bash at the orienteering courses. We handed out loads of balloons and painted hundreds of faces. Face painter Sandra eventually lost feeling in her hands due to the cold and switched to doing mountain rescue logos rather than full faces, but no one seemed to mind.

The Bank Side Café was buzzing with people talking about mountain rescue, so I guess that's the best sign you can get that we achieved our goal of raising awareness. The buckets were heavy with the generous donations made – second part of the objective achieved.

We kept to the budget (zero pounds!) and delivered on time! All in all I'd say the day was 'not bad.'

Thanks to all those people who helped, provided advice, support, goodies and time and especially my wife Sandra, for putting up with me, running the house and kids while I lived the Awareness Day for eleven weeks, and for blagging quite a lot of sponsorship. Planning for the next one starts NOW!

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# Shaping the mountain landscapes of Scotland: The geological framework

by John Gordon

The shaping of the mountain landscapes of Scotland has long been of interest to mountaineers, as described for example in the 'Scottish Mountaineering Club Journal' in 1896 by Archibald Geikie<sup>1</sup>, in the Scottish Mountaineering Club's 'General Guidebook' in 1921 by Ben Peach and John Horne<sup>2</sup>, and more recently in the Scottish Mountaineering Trust's publication, 'Hostile Habitats', in 2006.<sup>3</sup>

Scotland is widely acclaimed for the distinctive character and diversity of its mountain landscapes. These are remarkable for a small country, and widely celebrated. Consider, for example, the 'massive grandeur'<sup>4</sup> of the arctic-like plateaux and deeply incised corries and glens of the Cairngorms, the 'exact and serrated blue rampart'<sup>5</sup> of the Cuillin, the vast buttresses and ridges of Ben Nevis, the majestic 'mural precipices'<sup>6</sup> of the Torridon mountains and the 'billowing sea'<sup>7</sup> of long, sweeping ridges from Lochaber and Knoydart, north through Kintail and Affric to the Fannichs. The individual character of these, and other, mountain areas reflects the interactions between the geological foundations of the landscape, climate change and the processes of weathering and erosion by frost, glaciers, water and wind acting over many millions of years of geological time.

The first article in this series presents a long-term view of the evolution of the Scottish mountain landscape. It explains how the movements over time of the Earth's tectonic plates have shaped the basic geological framework. Subsequent articles will explore in more detail the effects of glacial, periglacial and slope processes; the links between geology and landscape in different mountain regions of Scotland, and the formation of some classic mountain areas and landforms.

## Plate tectonics and the geological framework

Driven by global plate tectonic processes, the locations and configurations of oceans

and continents on the surface of the Earth have changed continuously over the vast depths of geological time. Oceans have opened and closed, and continents have fragmented and collided. These processes have played a fundamental role in the geological development of Scotland. In particular, the geographical location of Scotland near active plate margins at key times during its three billion year history has resulted in episodes of mountain building, volcanism, large-scale crustal deformation and erosion.

As a glance at a geological map of Scotland will show (eg. see <http://www.bgs.ac.uk/OpenGeoscience>), these processes have left a legacy in the diversity of rock types and in the form of faults, structural grain and the juxtaposition of resistant and weaker rocks, all of which have been exploited by weathering and erosion to shape the present landscape. Plate movements have also resulted in the slow drift of the Scottish landmass across the surface of the globe and through different climatic zones, ranging from near-polar to tropical. Long-term climate change has also been an important influence, particularly the onset of the last Ice Age.

As a result of its remarkable journey through time and across the globe, Scotland comprises rock types that range from among the oldest in the world to the most recent, and with a wide variety of origins (Table 1). Very briefly, the western parts of the Northern Highlands comprise ancient metamorphic Lewisian gneisses overlain by Torridonian



STAC POLLAIDH IS AN ERODED REMNANT OF C. 1000 MILLION YEAR OLD TORRIDONIAN SANDSTONE RESTING ON AN ANCIENT LAND SURFACE OF C. 3000 MILLION YEAR OLD LEWISIAN GNEISS

sandstone; to the east of the Moine Thrust Zone, Moine metamorphic rocks (schists) predominate. South of the Great Glen, the extensive Dalradian metamorphic rocks (schists, slates and limestones) of the Grampian Highlands are punctuated by granite igneous intrusions (eg. the Cairngorms) and lavas and other volcanic rocks (in Lochaber). The Midland Valley is largely underlain by younger sedimentary rocks, with more resistant volcanic rocks forming groups of hills (eg. the Pentlands) and isolated hills (eg. North Berwick Law). The Southern Uplands are formed of sedimentary rocks with local granite intrusions in the south-west (eg. Cairnsmore of Fleet). The Inner Hebrides are distinguished by the presence of the eroded remnants of central igneous complexes (eg. the Cuillin and Rum) and extensive lava flows (eg. on Mull and Skye).

During a large part of geological time, Scotland did not exist as a single entity. The crustal fragments that now comprise the

**The mountains are... in the prodigiously protracted history of the earth's surface, merely shadows that come and go, as the subterranean energy upheaves them and as the atmospheric forces crumble them into dust.**

*Archibald Geikie, 1896*



TABLE 1. GEOLOGICAL TIMELINE AND SUMMARY OF THE GEOLOGICAL HISTORY OF SCOTLAND.

Geological period	Age (millions of years ago)	Main events and environments
Quaternary	~2.6–0	Repeated growth and decay of glaciers; formation of glacial and postglacial landforms.
Neogene	23–~2.6	Phases of uplift and erosion. Weathering continued under warm temperate conditions. Climate cooling intensified after ~3 million years ago.
Palaeogene	66–23	Opening of the northern North Atlantic Ocean; extensive volcanic activity in western Scotland; deep chemical weathering initially under humid subtropical climate. Differential uplift and erosion, with stripping of weathered rock and formation of etch plains. The Highlands were re-established as an upland area.
Cretaceous	146–66	Warm, shallow seas covered much of Scotland, apart from the Highlands and Southern Uplands.
Jurassic	202–146	The Highlands were an upland area of reduced relief, with rivers draining to deltas in the North Sea basin. Deposition in shallow seas around the margins of the uplands. Rifting and formation of the North Sea basin.
Triassic	251–202	Hot, semi-arid deserts around the margins of the Highlands.
Permian	299–251	Hot, arid deserts around the margins of the Highlands.
Carboniferous	359–299	Scotland drifted north into equatorial latitudes. Tropical forests, intermittent shallow shelf seas and deltas were present in the subsiding Midland Valley. Associated volcanic activity. Coal formed in low lying coastal swamps. Continued erosion of the Caledonian mountains.
Devonian	416–359	Erosion of the Caledonian mountains and formation of large alluvial fans in hot, semi-arid conditions. Large inland lake basins formed in north-eastern Scotland (Banffshire to Orkney). Volcanic activity in the Midland Valley and marginal areas.
Silurian	444–416	The Iapetus Ocean closed as Baltica, then Avalonia, collided with Laurentia. Uplift and erosion of the Caledonian mountains continued. Moine sediments folded and metamorphosed. The Moine Thrust formed. Volcanic activity and granite intrusions in the Highlands and volcanic activity in the Midland Valley. Main folding of Southern upland rocks.
Ordovician	488–444	The Iapetus Ocean was closing rapidly. Limestones formed on the shelf of a warm shallow sea in NW Scotland; greywackes and shales were deposited to the south (Southern Uplands). The Midland Valley Arc collided with Laurentia. Uplift of the Caledonian mountains accompanied by metamorphism and folding of the Dalradian sediments and intrusion of gabbros and granites in the Grampian Highlands.
Cambrian	542–488	Sandstones, then limestones deposited in warm shallow shelf seas in NW Scotland; the Iapetus Ocean reached its maximum extent.
	1000–542	~800–500 Ma Dalradian sediments deposited in marine basins, mainly on continental margin; glaciations; opening of the Iapetus Ocean.
		~1000–875 Ma Moine sediments deposited mainly in shallow seas.
	1600–1000	~1200–950 Ma Torridonian sandstones formed from sediments eroded from the Grenvillian mountains on the Laurentian plate and deposited in alluvial, fluvial and lacustrine environments on its continental margin.
	~3800–1600	Formation of Lewisian Gneiss Complex by metamorphism of older igneous and subsidiary sedimentary rocks; formation of igneous intrusions.
	4500	Formation of the Earth.

present landmass were assembled, like the pieces of a giant jigsaw, c. 425 Ma (millions of years ago), towards the end of a series of events known as the Caledonian Orogeny. This 'jigsaw' comprises five main units or terrains, separated by the Moine Thrust Zone, the Great Glen Fault, the Highland Boundary Fault and the Southern Upland Fault (Figure 1). The assembly of the different terrains involved processes of ocean closure, continental collision, and lateral movements of geographically separate areas along major faults (Figure 2).

The story starts earlier, however, when Scotland formed a tiny part of North America. Around 1000 Ma, the northern part of Scotland was located on the supercontinent, Rodinia, which included North America and Greenland (a supercontinent is a landmass comprising a large proportion of the continental area of the Earth). Sediments eroded from mountains on the Laurentian part (now Canada and Greenland) of Rodinia were transported by rivers and deposited in basins on the continental margins and in shallow basins offshore. These sediments now form the Torridonian and Moine rocks of the Northern Highlands, respectively. The Torridonian sediments were laid down on a much older (~3000 Ma) land surface of Lewisian gneisses. Rodinia started to break up around 750 Ma, but the main continental fragments later re-assembled to form another supercontinent, Pannotia.

During this time (750–650 Ma), the northern part of Scotland lay south of the Equator near the South Pole on the eastern edge of the continental plate of Laurentia. Later, as Pannotia broke up and Laurentia drifted

rapidly northwards, a large ocean, the Iapetus Ocean, developed between Laurentia and its sister continent, Gondwana; another continent, Baltica, containing Scandinavia, lay to the east.

The Iapetus Ocean separated Scotland from England and Wales, which at that time were part of a Gondwanan micro-continent, Avalonia. Deep and shallow water sediments were deposited in two broadly contemporaneous, sub-parallel zones along the eastern margin of Laurentia; these now form the Dalradian rocks of the Grampian Highlands and the Cambro-Ordovician rocks of the North-west Highlands, respectively.

By about 425 Ma, however, as the separate continental plates once more converged and collided, the Iapetus Ocean had closed. This was accompanied by a number of tectonic events that had a fundamental effect on the shaping of Scotland, including a series of mountain building events – the Caledonian Orogeny – between c. 480 Ma and 420 Ma. The initial collision was between a chain of volcanic islands and the Grampian Highlands terrain (part of Laurentia) at c. 480–465 Ma.

During this event, the Dalradian sediments were buried deep in the crust and metamorphosed. A later event at c. 435–420 Ma involved the collision of Baltica and that part of Laurentia containing the Northern Highlands. During this event, the Moine sediments in the Northern Highlands were buried and metamorphosed. At the western limit, a series of low-angle thrusts and folds were generated by the westward movement

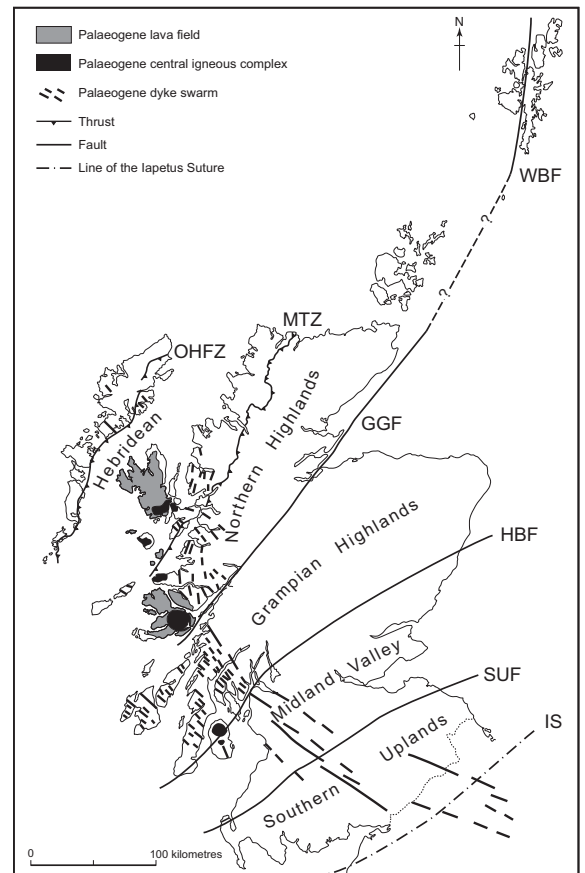


FIGURE 1: THE MAJOR GEOLOGICAL FEATURES OF SCOTLAND

OHFZ: OUTER HEBRIDES FAULT ZONE  
 MTZ: MOINE THRUST ZONE  
 WBF: WALLS BOUNDARY FAULT  
 GGF: GREAT GLEN FAULT  
 HBF: HIGHLAND BOUNDARY FAULT  
 SUF: SOUTHERN UPLAND FAULT  
 IS: IAPETUS SUTURE

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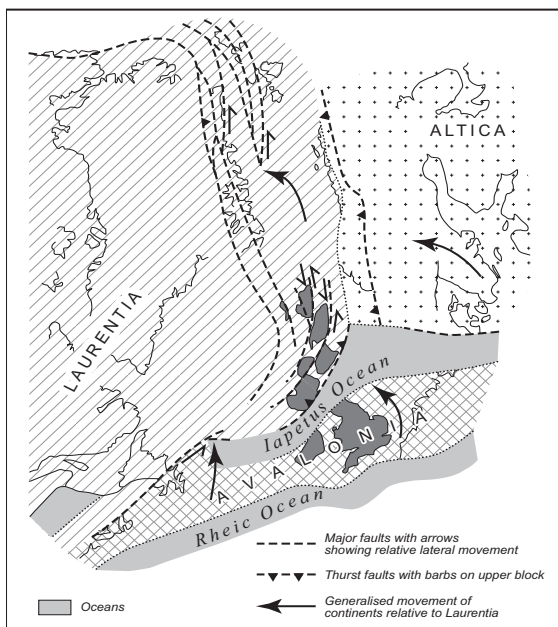


FIGURE 2: A LATE STAGE IN THE CLOSURE OF THE IAPETUS OCEAN, SHOWING THE DISTRIBUTION OF THE CONTINENTS AND THE ASSEMBLY OF THE MAJOR GEOLOGICAL TERRAINS. THE LARGE ARROWS INDICATE COMPRESSIONAL FORCES; THE SMALL ARROWS, LATERAL MOVEMENTS ALONG MAJOR FAULTS FROM D STEPHENSON ET AL, 1999. CALEDONIAN ROCKS OF GREAT BRITAIN. JNCC, PETERBOROUGH

of older rocks over the top of younger ones by at least 70 km, so that Moine rocks now rest on younger Cambro-Ordovician rocks. The Moine Thrust is the largest and best known of these crustal dislocations and is clearly displayed at Knockan Crag in Assynt; other thrusts can be seen on the hills on the north side of Loch Glencoul. Farther south, Avalonia collided with Laurentia around 425 Ma, joining Scotland with England along the line of the Iapetus Suture (Figure 1). The 'docking' of the continents involved lateral movements of the different terrains over hundreds of kilometres along north-east trending faults as the pieces of the geological 'jig-saw' that is now Scotland slotted into place.

The uplift that followed the orogenic events formed an extensive range of alpine mountains, the Caledonian Mountain Belt, the long-eroded roots of which now occur in the Scottish Highlands, the Appalachians, Newfoundland, Greenland, Scandinavia and Svalbard. Further south, as the Iapetus Ocean closed through the process of subduction beneath the Laurentian continental margin, the sediments that had accumulated on its



THE CAIRNGORMS COMPRISE A LARGE MASS OF GRANITE INTRUDED INTO THE DALRADIAN COUNTRY ROCKS C. 405 MILLION YEARS AGO.

floor were stacked up in thick wedges to form the rocks that now comprise the Southern Uplands. Igneous activity accompanied the subduction of the Iapetus Ocean floor, and masses of magma (molten rock) rose up into the overlying crust to crystallise as numerous granite intrusions in the Grampian Highlands, Northern Highlands and Southern Uplands.

Following these great upheavals, Scotland continued its northward drift towards and through the equatorial regions, later as part of the supercontinent, Pangaea. Erosion progressively lowered the Caledonian mountains and 'unroofed' the granite intrusions, such as those of the Cruachan-Etive mountains and the Cairngorms. Sediments were deposited in a number of subsiding basins under a range of environmental conditions. These now form the Devonian sandstones and conglomerates of the Midland Valley, Caithness and Orkney, the Carboniferous sequences of the Midland Valley, the Permo-Triassic sandstones of Skye and eastern Sutherland. Igneous activity included the eruption of the Devonian lava flows of the Sidlaw and Ochil hills and the emplacement of the Carboniferous sills and lavas of the Midland Valley.

Around 65 Ma, as Pangaea split apart, the northern part of the Atlantic Ocean began to open, leading to the separation of Scotland from North America and Greenland at c.55 Ma. This was accompanied by extensive volcanic activity in the Hebrides, including the formation of central igneous complexes on Skye, Rum, Mull and Arran, and vast lava flows from fissure eruptions like those in Iceland today. Tectonic uplift associated with the



THE HIGHLAND BOUNDARY FAULT RUNS THROUGH THE ISLANDS IN THE SOUTHERN PART OF LOCH LOMOND AND PAST CONIC HILL ON THE RIGHT. IT SEPARATES THE DEVONIAN SEDIMENTARY ROCKS OF THE MIDLAND VALLEY IN THE FOREGROUND FROM THE GENERALLY MORE RESISTANT DALRADIAN METAMORPHIC ROCKS OF THE HIGHLANDS TO THE NORTH



THE SOUTHERN UPLANDS, SEEN HERE FROM THE BROUGHTON HEIGHTS, LARGELY COMPRISE ORDOVICIAN AND SILURIAN GREYWACKE SANDSTONES, MUDSTONES AND SHALES DERIVED FROM SEDIMENTS SCRAPED OFF ON THE FLOOR OF THE IAPETUS OCEAN

continental break-up also elevated parts of the Scottish landmass. These were the last major events that shaped the broad geological template of Scotland. As described in the next article, this template has been moulded by a range of geomorphological processes over the last 50 Ma or so, culminating in the landscape changes produced during the Ice Age glaciations.

<sup>1</sup>A. Geikie, 1896. *Scottish mountains*. Scottish Mountaineering Club Journal, 4, 113-125.

<sup>2</sup>A.E. Robertson (ed.) 1921. *General Guide-Book*. Scottish Mountaineering Club, Edinburgh.

<sup>3</sup>N. Kempe & M. Wrightham (eds), *Hostile Habitats*. Scotland's Mountain Environment. Scottish Mountaineering Trust, Nairn.

<sup>4</sup>H. Alexander, 1928. *The Cairngorms*. The Scottish Mountaineering Club, Edinburgh.

<sup>5</sup>Somhairle MacGill-Eain, 1943. *Am Mùr Gorm*. Published in *Spring Tide and Neap Tide*. Selected Poems 1932-72. Canongate, Edinburgh.

<sup>6</sup>J.H.B. Bell, 1950. *A Progress in Mountaineering*. Oliver & Boyd, Edinburgh.

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Goodenough, K.M. 2006. *Geological foundations*. In: Kempe, N. & Wrightham, M. (eds), *Hostile Habitats*. Scotland's Mountain Environment. Scottish Mountaineering Trust, Nairn, 22-51. (Describes the main types of rock and the processes that formed them).

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McKirly, A.P., Gordon, J.E. and Crofts, R. 2007. *Land of Mountain and Flood*. The Geology and Landforms of Scotland. Birlinn, Edinburgh. (A well illustrated account of Scotland's geological journey through time and across the globe).

Scottish Natural Heritage's *Landscape* Fashioned by Geology series includes publications on the Cairngorms, Ben Nevis & Glencoe, the Northwest Highlands, Skye, Rum and Arran [www.snh.gov.uk](http://www.snh.gov.uk).

The British Geological Survey's *OpenGeoscience* website offers free online access to geological maps, photos and other information [www.bgs.ac.uk/OpenGeoscience/?src=sfb](http://www.bgs.ac.uk/OpenGeoscience/?src=sfb).

## What Katie did... Everest IN AID OF MOUNTAIN RESCUE at Redpoint Climbing Centre

**Katie Jeanes ex-Social Secretary of UBMC and keen fundraiser**

The last 10m whizzed past in a blur... one more climb on top of the 154 I'd already done suddenly didn't matter – I was completely numb. And there it was – more than the height of Ben Nevis (1,344m) and about one sixth of the height of Everest in the form of grade 3+ vertical climbing.

It was 17 March, and myself and a hoard of keen University of Birmingham Mountaineering Club fundraisers gathered at Redpoint Climbing Centre, Birmingham, to scale the height of Mount Everest in teams of roughly six, to raise money for Mountain Rescue. Despite the good cause, it was a crazy idea and a massive feat to undertake. Many of us trained beforehand, by doing repetitions during our usual twice-weekly club meet climbing sessions, but a lot had left it to fate, perhaps not

each team member so each team would safely reach the summit of Mount Everest. My target, as part of Team One, was 155 climbs.

It was perhaps one of the most tiring experiences of my life, not just due to the physical exhaustion but also because working in a team, on one route, meant there were large gaps between 'performances', which many filled with catching up with the university work that was being sacrificed for the event! There was a strange mix of highs and lows; between heart-pumping, sweaty reps of 10s, 20s or (my personal best of the day) 35s, and sneaky shut-eye recoveries to sleep off the exhaustion, only to find yourself chilly and not ready for the next set. Truly tiring! For all the effort, not to mention the sore blistered hands, it felt ever so like we had taken part in (some sort of) a real expedition and it was somewhat dispiriting that our surroundings were still the ever-bright red and yellow walls of Redpoint!

The first team to finish, Team Two, managed their ascent to Everest summit in a whopping nine hours and collected their prize shortly after for being the fastest team. They were undoubtedly the most testosterone-fuelled team: the strongest boys in the club dominating it and giving a fantastic show of fitness. One of this team, Jack Brougham, also collected the Fastest Climber Award. My team and Team Three raced it out an hour or so after, for second place. Team Three claimed it, but we weren't far behind! Bringing up the rear was Team Four. There was some tired grumbling coming from them as their last climber was still on the wall 5 minutes before Redpoint was due to close at 10.00pm – thirteen hours from the start of the expedition! This team contained some very new climbers, who did exceptionally well to accept the challenge, let alone complete it! The final prize was for Outstanding Achievement, and went to Rachel Takacs. Not more than three months earlier she

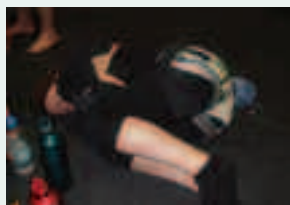


**SARAH ATKINS FOR TEAM 3 NEARS THE TOP, AHLAM QATTEN FOR TEAM 4 BELOW – THIS WALL WAS THE LARGER OF THE TWO, BEING NEARER 12 METRES**

suffered a clean snap of the lower part of her shin bone while bouldering at Cratcliffe. Despite the most careful of spotting, her mere one metre fall resulted in a trip in an air ambulance to Sheffield Hospital and reminded us all of the dangers of our sport, no matter where we are. The drama prompted us into action for this event.

Throughout the day, we complained and whinged about being exhausted, and even about being bored with the same old route, but when put into perspective with what mountain rescuers go out and do for us, to feed our extreme sport thirst, every participant would gladly do it again. Thanks to some committed, if a bit competitive, fundraising we raised roughly £1,700 and hope this is at least some of what we owe mountain rescue for past and future mishaps on the hills – hopefully not too many of the latter!

Thanks to Michael Gadd, the then vice-president of UBMC, for being the turning cog for the event, and of course, the Redpoint staff for putting up with us for the whole day.



**KATIE HAS A KIP!!**

Each team safely, and without a single case of altitude sickness, reached the summit of Mount Everest. Despite the beautiful view from the top, there is the small question of getting down again... Watch this space for 'What Katie Did Next – the Everest Downclimb'!

## Facebook update... 1000+ 'fans' and counting...

...or should we call them 'people who like us', as Facebook now terms them, which seems to be somewhat damning with faint praise by comparison?

That aside, the interesting – if not slightly unnerving – thing about running a 'page' on Facebook is the constantly updating 'insights' into how your fans are interacting with you and, touchy one this, your 'post quality'. Not enough that your fans like you: Facebook has to rate you too. On and on it niggles, a never ending assessment of your worth, delivered on a daily basis... Judy really must try harder... concentrate more in class... stop looking out the window... start remembering her gym kit... eat more greens...

Post quality, according to a helpful pop-up box, is determined 'by the percentage of your fans that engage when you post content to your page.' The number of stars – from nil (see me after assembly) to five (permission to bunk off school early) – depends on how your post quality compares to similar pages.

Well so they say. I'm not convinced – the figures and stars never seem to relate to fan interaction from where I'm sitting. Out came the party hats when I made 29.5 with five stars for the first time last week. But not for long. Less than 24 hours and I was back where I belong – a pathetic 2.5 with a meagre three stars. (Come to think of it, how bad do I have to be to get NO stars?) And I still have absolutely no idea what prompted my sudden, meteoric rise or my spluttering fall from grace.

The insights, however, do reveal some interesting facts. Of our 1016 fans (woo hoo!!) at the time of writing, only 919 of those reside in the UK. Amazingly we have attracted 24 in Indonesia, 13 in the US, seven in Spain and four in Australia, as well as fans in Costa Rica, Canada and Bermuda and across Europe.

The greatest concentration of fans is in Manchester with 158 and London with 112. When the page first started out, it was a predominantly male fanbase and teenage (probably in no small part to my fellow team members getting their kids to sign up!) but that seems to be levelling out now and getting (much) older. Intriguingly, it appears 73% are male and 25% female. Now, when I was at school (recurring theme here) that added up to 98% so I'm not sure what gender the other 2% might be... suggestions on a postcard please... Needless to say, it's the blokes who are more active in their commenting. Oh and, apparently, me hearties, we have seven fans who use Pirate English. Arrr. Now, if we can work out a way to get as many actual (as opposed to virtual) Basecamp members, right here in Blighty, and paying us the £24 subscription fee, we might just have cracked it...

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Thanks to the sponsors, suppliers and manufacturers who support us.

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SRP is **£12.49**. See [www.bridgedale.com](http://www.bridgedale.com) for your nearest stockist or call Burton McCall on 0116 234 4644.



### New since last issue!

Helly Hansen support those who help and support others and would love to reward team members with the benefit of any of their clothing, whether it be Workwear or Sports & Leisure, at a generous discount. To find what you are looking for you can view all HH clothing on the following websites...

Sports & Leisure at [www.hellyhansen.com](http://www.hellyhansen.com) and Workwear at [www.hhworkwear.com/www](http://www.hhworkwear.com/www)

#### Special prices for team members

Sports & Leisure – trade prices offered.  
Workwear – see price list and deduct 32.5% off the net prices shown. N.B. All prices are +VAT.

Go to the members area of [mountain.rescue.org.uk](http://mountain.rescue.org.uk) to download the relevant price lists.



### Victorinox competition winners

Star prize of a Swiss Tool Spirit goes to John Penn. Runners up prizes of the Climber's Knife go to four lucky winners – Elaine Blackman, Martyn Benton, Andrew Briton and Tim Jayes. All of you should have received your prizes in the post thanks to Burton McCall.

Go to the members area of [mountain.rescue.org.uk](http://mountain.rescue.org.uk) for details of all the deals and discounts on offer...



### Goodyear tyres: discounts for teams and team members

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How? Teams should first notify Penny Brockman with the team name and address, the name and contact details of the person responsible, details of the vehicles officially used by the team

(make and reg no, tyre size (including speed rating) and the terrain on which each vehicle is likely to be used.

#### Additional Tyres

Any additional tyres needed by teams may (subject to availability) be bought online from [www.hiqonline.co.uk](http://www.hiqonline.co.uk) at 5% off the price specified from time to time.

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Team members can also purchase tyres for their own vehicles (subject to availability) online from

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Any queries in relation to the above, please contact the Treasurer Penny Brockman via email – [treasurer@mountain.rescue.org.uk](mailto:treasurer@mountain.rescue.org.uk) or telephone 01633 254244 or mobile 07775 851737.

Or the Publicity Officer Andy Simpson via email – [press@mountain.rescue.org.uk](mailto:press@mountain.rescue.org.uk) or telephone 0161 764 0999 or mobile 07836 717021.

  
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## Mobile phone app helps search and rescue teams co-ordinate and log emergency shouts

A growing number of search and rescue teams are switching to ViewRanger, a mobile phone application, to navigate the wildest terrains, in preference to dedicated GPS systems. The 'off road satnav' allows display of fully featured Ordnance Survey maps with GPS positioning and route logging. ViewRanger's ease of use and speed of loading have contributed to its popularity with search services. Alec Colley, equipment officer for Dartmoor Rescue Group, has been using ViewRanger since late 2009.

'All team members have confident and accurate navigation and map-reading skills. You need to rely on your own skills but technology can be a big help when you are under pressure.'

'I have tried other software on a PDA but it was a nightmare, it just kept freezing and using up the battery. ViewRanger is stable and the new Nokia phones are very resilient – you can even use them with your gloves on.'

'Initially people were slow to adopt the technology, but they could see the benefits once they had seen it in action and now they all want one!'

ViewRanger offers high resolution 1:25k scale Ordnance Survey mapping for the whole of Great Britain, enabling combination of on-road and off-road navigation on one device. All the national parks are available as packages and it is possible to add individual map tiles 'over the air' for specific areas. The sharp and



clear map display makes it easy to locate and navigate in all weather conditions and continuous GPS tracklog recording helps with the reporting process.

Mapping, GPS navigation, and track

recording are all performed local to the handset – and don't require the mobile network – so ViewRanger can work in the remotest of locations.

The Dartmoor team has used ViewRanger in training – even at night when the screen brightness allows maps to be read without the need for a torch – and for real rescues. During an incident in the Dart Gorge, when three canoeists had got into difficulties, the team found ViewRanger's functionality unaffected by the very sporadic phone coverage and dense trees.

ViewRanger automatically creates a log of the user's trail, which teams can use to ensure an area is thoroughly searched. Rob Dixon of Dartmoor SRT has also used this facility for training.

'When I'm planning a navigation exercise, I use ViewRanger to mark and describe features not shown on maps, which are then turned into checkpoints. The 'record track' shows a trainee the actual route taken and the line on the map is extremely useful in showing what they did right or wrong and how.'

'On a recent callout, I feared the navigator in my team had overshot the route to the cas site which, as it was in very difficult ground, was important to get right. ViewRanger quickly confirmed my fears, we backtracked to the correct place to descend into this dangerous area. And we were able to confirm to control and others in the team where we were at all times.'

Where phone coverage is available, ViewRanger's BuddyBeacon feature enables a number of users to see each other's positions – invaluable to team leaders. As Peter Jozefczyk, vehicle officer for Glossop MRT, explains.

'In February the team was called to a 65 year old man who became ill whilst walking on Bleaklow Moor,' he says. 'Weather conditions were very poor with visibility down to 50 metres in heavy snow.'

'ViewRanger guided the stretcher party to and from the cas site. The casualty



had to be carried to Snake Summit for evacuation which took three attempts by two air ambulances and a police helicopter – an operation which took around five hours and 45 team members from Glossop, Edale and Kinder teams.'

For dogs, ViewRanger's unique integration with Retrieva Tracking's GPS dog collar can help handlers track and follow their dogs.

Augmentra, the company behind ViewRanger, has been running a Volunteer Search and Rescue programme since October 2009 and now has a number of teams signed up for free software and support. The first to join were DRG and Sussex SAR. Feedback from the teams is used to continuously develop the functionality of ViewRanger. ViewRanger can be widely deployed across a team – meaning virtually every team member can have access to this navigation, logging and team-working aid. With traditional dedicated units costing around £300, the cost saving can be enormous.

Craig Wareham, co-founder of Augmentra, explains that testing under rescue conditions has highlighted for him the safety features of ViewRanger.

'Areas such as Dartmoor or the Yorkshire Moors have few landmarks and even familiar areas can be confusing in fog or failing light. The teams have proved that ViewRanger can be used at night without difficulty. BuddyBeacons help the team co-ordinate the shout, giving instant visual updates of all team members' locations in the field, which is invaluable for the search coordinator who is back in the vehicle or back at base.'

For more information check out [www.viewranger.com/SAR](http://www.viewranger.com/SAR)

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The EUV can also be fitted with a winch which can easily be interchanged from the front to the rear of the vehicle. Overall the EUV can be fitted with various additional equipment to suit individual requirements.

In addition to the Morton EUV a purpose built trailer is also available – as well as being used for transporting the vehicle, the fact that it is a fully enclosed trailer allows it to be utilised as a mobile incident unit providing protection from the elements.

A side personnel door is fitted to allow access in and out of the vehicle. As with the EUV, trailers can be supplied to suit individual requirements.

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[www.mortonatv.co.uk](http://www.mortonatv.co.uk)**



## Swiftwater rescue training in the Lakes or on your own patch

As we've seen from recent flooding events, teams are increasingly being called to give assistance in flood and swiftwater rescue situations. Training is essential to ensure teams operate in a safe manner alongside other agencies. The Gold Standard in this area remains the Technicians programme, training teams to operate alongside other agencies to established protocols, enhancing safety and providing team members with a recognised qualification. Other programmes to consider are the Awareness and Bankside levels. These programmes match the fire services' team types



and give provide an excellent starting point for team water safety. If you'd like any advice regarding water training you can contact Howard Crook who is actively training with the police, fire service, paramedics and extensively across mountain rescue. Howard is happy to advise on cost effective options in terms of equipment and training and can provide all levels of mountain rescue programmes including train the trainer programmes for the new MR bankside syllabus.

Howard offers an accelerated technician 3-day programme tailored to your team, run either in the Lake District or on your home patch, full PPE provided. For further information contact Howard on 01539 739050 or email [howardcrook@rethinktraining.co.uk](mailto:howardcrook@rethinktraining.co.uk)

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## Merseyside Fire & Rescue Service training team is making a splash



Merseyside Fire and Rescue Service (MF&RS) is making a splash with its unique water skills training.

In the last year, the innovative water skills training team have not only developed their wide range of courses but their facilities too, branching out to a Water Training Centre of Excellence in Anglesey.

As well as delivering training

from the International Water Skills Centre in Liverpool, the team can now offer courses in the swift waters of the Menai Straits.

Rescuing people from waterborne cars, managing search operations in and around water, carrying out casualty care and operating powered rescue boats are just some of the skills that are developed during the training courses.

Developing the skills of Merseyside's own operational crews is a priority for the team but they are also helping other fire and rescue services across the UK.

Firefighters from across the country recently took part in a special four-day training event at the centre in North Wales, delivered by the MF&RS team. Along with practising

skills on personal watercrafts and powerboats, they carried out technical rope training in a water environment and courses in kayak safety.

Swiftwater, still water and rescue boat operator training courses have also been provided to West Yorkshire, West Midlands, Heathrow Airport and Cheshire Fire and Rescue Services.

MF&RS became the country's first independent rescue boat operator to comply with the Maritime and Coastguard Agency's Rescue Boat Code of Practice after developing training for users of its ten metre marine rescue boat, which is based on the River Mersey.

The courses cater to a wide range of abilities, from basic safety measures to advanced boat handling. To find out more, contact Jerry Akehurst at [jerryakehurst@merseyfire.gov.uk](mailto:jerryakehurst@merseyfire.gov.uk) or visit the MF&RS Water Skills Training Team at The Emergency Services Show at Stoneleigh Park in November.



# SARCALL - a new call out platform

by John Hulse

Things were not good: the quality of the initial callout of SAR/MRT assets by North Wales Police seemed to be getting worse. Something had to change and change quickly. After numerous very positive meetings, hundreds of miles of travel and more than 500 hours of software design, coding with testing, we now have a highly robust, trusted and reliable national level callout platform fully operational on the secure Mountain Rescue England and Wales server.

The North Wales Police Joint Communications Centre (JCC) handles some 250,000 incidents each year with less than 0.2% of the calls being linked to SAR. Following centralisation of the Communications Centre, the teams began to experience callouts to the wrong teams, delayed calls, poor initial information etc.

This degradation of SAR callout performance was spotted by the JCC supervisor, Dave Roberts-Simcock and, with Dave's support, we started a root-cause analysis of some of these problems. To my initial surprise it transpired that many of the problems were caused by the highly variable quality of the team callout information, including very different callout processes for the eight teams, together with anachronistic callout mechanisms and some ambiguous boundaries.

For example, some teams were called by pager bureau, others by individual phone calls working down a list and some by direct SMS. Analysis of the data supplied by some teams to the police showed that a significant amount of the data was out-of-date, vague or wrong; it became clear that the MR community were part of the problem by unintentionally making the job of the communications centre staff more difficult.

Dave patiently demonstrated exactly how the JCC staff process incidents and it was

obvious that for the benefit of the casualty, a more harmonised system of SAR callout made total sense. Spending some time in the Communications Centre learning how the staff work under continual pressure on vastly different problems was fascinating and totally changed my outlook on the SAR problem; there is no substitute for 'walking a mile in someone else's shoes.'

## Moving to the new system

It became clear that having multiple fragmented callout systems was untenable and was actually making things worse for the SAR teams. The solution needed a simple, accessible 'front-end' for the Police Communications Centre listing the teams in the region with an easy way to send a callout or other message to the selected team(s).

Having some experience in web-based technologies and the Worldtext SMS platform successfully used by several very busy MRTs, I innocently volunteered to deliver the application. With a key project objective to make the work of the Communications Centre staff easier, some critical steps were to get all teams in the region to agree to align their callout processes, to use SMS for all initial callout messaging and, where appropriate, to shift team boundaries from ridgelines down to roads.

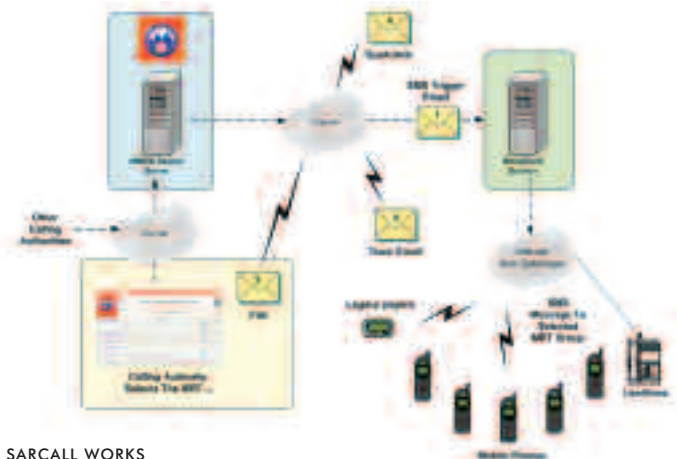
Following initial trials with Ogwen Valley MRT, the region went live with SARCALL in August 2009 and the system has been activated almost 400 times by North Wales Police with few, if any problems. Most importantly, the overall quality of the initial stages of SAR callouts has dramatically improved and the police report that they are getting far faster responses from team leaders to the callout. In some cases, the elapsed time between the police operator logging into SARCALL, selecting the team, writing and sending the SMS message and the team leader(s) responding to the Communications Centre is less than three minutes. This response level is remarkable and can only benefit the casualty.

Following presentations of SARCALL at the Technology Day and the Team Leader Day, the system is now being implemented by Lancashire Constabulary for the five teams in the Mid-Pennine region. In March, the Lake District region (LDSAMRA) agreed to fully adopt the system and will be discussing the implementation with Cumbria Police. Several other mountain rescue areas and police forces, including some government/military agencies are expressing interest in using SARCALL as a means to rapidly and reliably dispatching and communicating with their own assets. This wider interest is very encouraging and will only help make the SARCALL system stronger.

## Making life easier for the communications centre staff

With its simple, secure web interface, SARCALL greatly simplifies the role of the busy Communications Centre Operator or Force Incident Manager (FIM) in selecting and calling the right search and rescue team(s) in their region. SARCALL provides various tools to easily select the right team including a medium scale region map marked with the team boundaries with a hover-click to call the team, geographic descriptions, a comprehensive gazetteer with names of climbs and local features as well as the more common names or keywords.

Once the team has been selected, the operator uses just one simple screen to create



HOW SARCALL WORKS  
ILLUSTRATION: JOHN HULSE

the message and send that callout SMS message to the team. SARCALL is now the sole system for North Wales Police to call any of the rescue teams in the region.

Dave Roberts-Simcock, supervisor in the Joint Communications Centre said, 'Since its inception with North Wales Police, the SARCALL system has become an invaluable

longer need to rely on the pager system, and we will shortly be reducing the number of pagers the team holds, making a significant cost saving.'

Iain Ashcroft, team leader of the North East Wales Search and Rescue Team said, 'We have found SARCALL considerably more reliable and informative than the pager system we used before.'

With more team leaders using smart phones, SARCALL also enables the Communications Centre staff to send additional information in parallel using secure email to the appropriate team leaders as part of the callout message. This additional information can include elements of the 999 call such as



SARCALL IN USE AT THE JOINT COMMUNICATIONS CENTRE

contact details, locations, brief story etc, which help the team leader respond to the callout more effectively. Phil Benbow says that 'this facility is a really useful addition and has proved invaluable already on a recent overnight search for an overdue walker.'

To ensure that the Communications Centre staff always have the latest contacts, availability, capabilities, call signs etc, the team is put firmly in control of exactly what the Communications Centre sees. This ensures that valid data is always provided, which eliminates the need for teams to send various contact lists and callout procedures, to the police. SARCALL also provides the ability for teams to share their key contact and related details with other teams on a strictly controlled 'opt-in' basis.

If the team has an SMS account with WorldText, SARCALL can also be used by the team to send messages (mobile SMS, pager, landline and email) to team groups such as Full Team, Crag Group, Search Group etc. This facility is especially useful for rapidly activating and briefing team resources but is also useful for routine messaging such as training events etc. To assist in debriefs and quality analysis, SARCALL provides a detailed time-stamped list of all communications centre callout and team initiated SMS messages from start to finish of the operation. In addition, we can also obtain a detailed delivery report listing which mobiles and landlines were activated, together with the time stamps. This data has proven exceptionally useful in some cases.

Without even leaving their screen, operators can now click on a hyperlink taking them straight into SARCALL, and call out the team they require. Also, the additional features incorporated in the system itself have proved to be extremely helpful in identifying which team covers which area, and in establishing the services each team can provide for us. As a room supervisor I can honestly say that this is one of the most user friendly and efficient systems we have at our disposal and has made a big difference to the way in which we interact with our search and rescue colleagues.'

## Benefits for the teams

The key benefit for the team is getting the callout message quickly and reliably via simultaneous SMS, pager, landline and email routes. The use of multiple delivery routes ensures the highest possible probability of delivery together with future-proofing the system as messaging technology evolves. In addition, this flexibility also accommodates teams who wish to remain with some pagers rather than migrate to SMS.

Analysis of several thousand SMS deliveries via SARCALL shows that the vast majority of the messages are delivered within 8-15 seconds, assuming that the mobile is switched on and 'in-coverage.' Phil Benbow, a coordinator of Llanberis MRT, one of the busiest search and rescue teams in the UK said, 'We have found that SARCALL is efficient and reliable. The fact that the SMS message gets to the whole team usually before the pager message has resulted in a significant number of members finding that they no

Multi-team functional groups are easily supported by SARCALL and we now have a regional Search Managers group on the system. Further multi-team groups such as Water Response or Major Incident groups are envisaged. This flexibility of approach is important, as the Police Communications Centre want to quickly solve problems, not worry about specific team scope or capabilities.

## Summary

Apart from the obvious benefit of having a callout system with far fewer problems, an unexpected benefit of implementing SARCALL in the region has been a noticeably improved relationship between teams and the police as we all worked together to harmonise and improve aspects of the callout system.

The police very strongly support the system which simplifies the work of their Communications Centre staff and, most importantly, helps deliver a fast, auditable and appropriate operational response to the casualty. The success of SARCALL has positive visibility at ACPO level and this can only strengthen the cause of mountain rescue.

Now available to all MREW and MRCofS regions, SARCALL is simple, fast, field-proven and reliable, having been successfully used in almost 400 search and rescue operations benefiting the police, the teams and, most importantly, the casualty.

If you would like to learn more about how SARCALL may improve the callout process for your teams or regions, please contact John Hulse.



TOP: TEAM HOME PAGE  
MIDDLE: NORTH WALES POLICE HOME PAGE  
BOTTOM: THE SARCALL SYSTEM USED TO CALLOUT A TEAM

# Where are we up to with digital mapping?

by Mark Lewis, Communications Officer

**S**ARMAN® is a Search and Rescue Management Solution designed by Mapyx Limited, a Geographical Information Solutions (GIS) company in conjunction with Mountain Rescue England and Wales to provide a search management and mapping tool that encapsulated the way in which search management is undertaken within the organisation. We provided the search theory and statistics, Mapyx provided the technical GIS skill and the finance to develop the system. Most notably, the company has provided the development and software free of charge to MREW, in recognition of the important work we undertake and our input into the system's development.

The system firmly places Mountain Rescue England and Wales in a unique and world-leading position having its own specially designed full GIS solution. Needless to say, there are many organisations keeping a close eye on developments since it can be used in many differing environments. The system is equally applicable to anyone involved in different forms of search management and has multiple uses to other agencies and, potentially, could be the catalyst in inter-agency co-operation based on a single platform of coordinated search procedures and information. Only time will tell, but we are leading the way.

Currently, SARMAN® is in use with every mountain rescue team in England and Wales, and being used to 'save lives in wild and remote places'.

## The origins

So where did this all start? Well, in the infamous and partly misquoted words of Michael Caine 'not a lot of people know that!' So we asked the man that does know, Steven Wood, Chairman of Mapyx. In March 2009 at the Outdoors Show, Alan George spoke with a salesman from Mapyx. Discussions ensued and, in August 2009, Rob Brookes found a copy of the software on the front of a magazine and decided he'd like to test it.

*Thanks for a brilliant day. I thought the whole day very comprehensive and extremely professional yet not over my head or insultingly basic.*

*Ray Griffiths, Patterdale MRT*

A few email bounces later and Rob decided he'd hand it over to me to investigate further. I made contact with Steven Wood and a number of licences were supplied for members to evaluate Quo. After some positive feedback, a meeting was called in Cardiff. I asked Ewan Thomas to join the meeting as he felt this could be an opportunity to discuss

software development and Ewan is an experienced search manager.

Then the 'fateful' meeting took place at which Ewan Thomas and I met with Steven Wood and Uros Pecek of Mapyx. I recall that we knew we were onto something when Steve had his own GPS 60CSX in his bag! As an outdoor enthusiast himself, he appreciated the voluntary work of mountain rescue, also recognising we need support in all aspects of our work from external sources.

Steve introduced us to the history of Mapyx and gave an outline of some rather impressive projects they had worked on commercially, and for government bodies (think military, nuclear, security, international, etc).

Ewan and I ran through how teams operate in training and incidents, from the initial call to the running of the incident, explaining how we mainly use pen and paper for record keeping. Mapyx was very surprised how much we actually do during an incident – it's not just teams looking for a casualty or missing person, the whole search management process is extensive.

Ewan explained the concept of search management and how the Quo system could be utilised but, to be of most benefit to us, it would need certain enhanced functionality ('pushing one's luck' comes to mind!). Ewan then explained the statistical nature of search management and how spreadsheets were the 'norm' for calculating PODs, etc.

Mapyx, quite unbelievably said that, not only could they design a specific system for MREW, but would do it free of charge. At this time there was a distinct air of disbelief, which was directly met with Steve saying, 'You are looking at the people who own the company and what we say we'll do, we do!' So, the challenge was set.



*Hark! The gentle whirr of cogs turning...*

Asked how else they could help, I thought I'd rather cheekily bite the bullet and asked how many copies of Quo could be issued to MREW. Steve's reply was simple: 'How many do you want?' I explained that there are about 58 teams with 3500 members, but for every team member to have a copy would be highly beneficial (my turn to push my luck!) Mapyx immediately agreed to provide all 3500 team members with Mapyx Quo and converted OS maps free of charge. There was silence as it was immediately clear Mapyx was very serious in providing support to us!

So for the first time in its history, mountain rescue could have access to a digital mapping platform for every team member and, with the kind permission of Ordnance Survey, have access to digital maps. The meeting ended with smiles all around.

Ewan and I knew we had an excellent offer on the table, but could any other company offer the same or better? We drew up a list of products to investigate whether other manufacturers could help with a bespoke package but decided we needed to give Mapyx a chance – it wasn't going to cost us money and Ewan and I were committed to taking the project onboard.

An agreement followed, the next stage to educate Mapyx in search management. This was achieved in a day's training in Brecon in September, joined by me, Ewan and Andy Ellis. Fully 'unqualified', they set to work on software development and on 16 November

2010, Mapyx presented the Alpha version at the Technology and Innovation Day in Preston. At this stage it was more smoke and mirrors than a fully operational system, but you don't deliver complex GIS technology in that short a timescale. In fact, Mapyx readily admits that, without its existing GIS modular system as the foundation for development, it would have taken two years to develop the SARMAN system and, of course, it did help that the Mapyx Technical Director Dusan Pecek, is one of the world's leading experts in GIS technology! More communication occurred between the parties and a full-blown system started to take shape.

On 1 March 2010 we announced that Mapyx had been appointed as GIS and Digital Mapping partner to Mountain Rescue. Immediate email requests for copies of the Quo software began to pile in! Teams were so impressed, they started asking for extra activation codes – they clearly knew the correct product had been chosen.

An early Beta version of SARMAN was released to Ewan and me in January, so testing and feedback could be supplied, and also to ensure Mapyx was following the design brief required. On 20/21 March, a first field test was successfully completed with members from South Wales, an RAF MRT and a few Polsa members. Then, operational testing in April with a later release after feedback from the test weekend by Ewan, Nigel Dawson, Ceri Richards, Mike Lake, Andy Ellis, Simon Harris, Iain Nicholson and me.

Saturday 15 May was one of the biggest task days, loading the 65 new laptops available to us via kind sponsorship of Goodyear. Simon and Iain had already prepared 65 laptops with the Quo operating system and a few other programs, Mapyx needed to install the latest software and MREW needed to set out the room! A team of four Mapyx staff (Steve, Uros, Dusan and Chris James) and MR members Simon Harris, Mike Lake, Ben Carter and Iain Nicholson set to work.

The software installation by Mapyx was started, tables set out with laptops and bang! a fuse went in the distribution board. Ben immediately noticed that, as the building was so old, the distribution box couldn't run all the laptops! I sent Simon down to the local DIY store for extension leads; Ben had found some sockets connected to other supply rings

*A milestone for mountain and cave rescue teams, both in national issue and partnership working.*

*Jon Whiteley, Devon CRO*

so problem solved! And then it was time to sticker all the laptops up. It was 20:00hrs and we needed to get to the hotel for food (and of course a little drink).

Ewan arrived and Uros updated him, 'We've made some changes as per your requests since our meeting last Thursday and we'd better show you all the changes so you can teach it tomorrow!' This was no joke and Ewan now had to make sure the training session was adjusted to suit, but the changes were for the best!

Final amendments made and then the 'big day' – a full training day in Preston with representation from all teams, Lancashire Resilience members, the RAF, ARCC and the police. Ewan led the training in SARMAN with around 130 people learning the basic use of the system on the new laptops. No crashes, no bugs, only the silence of mountain rescue personnel concentrating (later called an 'epic' experience by Peter Smith). I was walking around advising members when needed and watching body language to gauge feedback.

We were very pleased with the way the day progressed and the feedback received. A massive event like this could have turned horribly wrong, but with everyone's help, including all the teams in attendance, it was an historic success.

On the 17 May, SARMAN first went 'on duty' in the early hours, on a real incident! That's confidence for you!

### Where do we go now?

We have set up a website to collate the views and experiences of users, where they can share their experiences and learn from each other. The intention is to collate all the differing comments into new functionality requirements that mountain rescuers need, or would like. These will then be passed to Mapyx, who will work out how best to respond to these additional requirements and then develop the program further. Success will depend on this feedback, so it is actively encouraged. Advice, feedback and wish lists can also be emailed directly to Ewan and me via [mapyx@mountain.rescue.org.uk](mailto:mapyx@mountain.rescue.org.uk)

### The longer term future

Mapyx is already developing new tools to expand the system functionality. The next stage will be to refine it so the latest views are incorporated. SARMAN Mobile software is on the way, so that concentric circles and defined search areas can be seen on a GPS in the field and sweep widths input at location to provide an accurate calculation and graphical representation of coverage. Satellite tracking will be running in July. Then, there is a river tool which will provide a 'catchment area' based upon a number of variables. After

*The SARMAN system neatly combines a number of SAR management tools into one place. It will help us monitor our assets and keep clear and consistent records – particularly welcome in the often complex multi-team searches of the North Pennines.*

*Ian Clemmett, Penrith MRT*

that, there are potentially more modules such as flood, air and sea rescue modules... and who knows thereafter!

### How does it work?

Firstly, the user needs to understand that the system is not prescriptive, but permits complete flexibility in using the system to various levels from 'simple' drawing of concentric rings of probability, to fairly complex search management plans with full communications interface.

The statistics it uses are also subject to user requirements, so again, the user has control. The base system initially used the statistics adopted by MREW, but a simple accessible input sheet permits the user to change the statistics, depending upon personal (or rather local) statistics.

### So what are the main features?

The system is designed to permit search management as a process, including:

- Create an 'incident', whether a missing person or a casualty location
- Draw routes and points to define specific tasks or information points
- Draw areas for searching
- Assets manager for the allocation of personnel and equipment
- Consensus calculations using three different code structures
- Probability tracker
- Search time calculator
- Produce reports, both standardised and bespoke
- Plus other GIS functionality
- Communications modules to permit live tracking of assets, including GPRS/GSM, satellite, and GPS radio/mic (Tetra and APRS by request).

In fact, the list of features is too great to cover here, but there is an overview on [www.mapyx.com/mediarelations/sarman.pdf](http://www.mapyx.com/mediarelations/sarman.pdf)

### And finally...

Who are Mapyx? Quite simply, they are the Mountain Rescue England and Wales 'Official GIS and Digital Mapping Partner'! A major and very supportive sponsor of our work, who has committed to be with us in the long term.

Whilst MREW was the first to officially recognise Mapyx, others have not been slow off the mark, with SARDA England, Wales, South Wales and the Lakes, BCRC, plus ALSAR following along. Mapyx discreetly

admits that the system has potentials on a worldwide basis for both military and civilian use, with many ongoing discussions. And it all started from a chance meeting with us!

## What's come from where?

How big is the Mapyx investment? (Steve says it's as expensive as getting married and divorced all over, so don't ask!) It includes:

- Quo and Quo Professional for every team member.
- SARMAN® for every member
- SARMAN® Mobile for every member
- OS Base Maps and Converted Maps for Quo
- Discounted prices on Endura GPSs and all other hardware
- Teams can also earn money by advertising Mapyx on their website – if you haven't taken up the offer yet, look at <http://affiliate.mapyx.com/idevaffiliate/signup.php>
- Mapyx ran an offer to donate 10% of internet map sales for two months.

Goodyear have also donated £30,000, which we have used to purchase laptops. Without this donation, not all teams would have access to use the software on incidents and it would have been an impossible task to train teams without this commitment.

## And finally...

My personal thanks go to all (alphabetically) who helped in some way along this path:

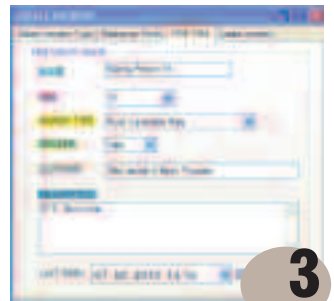
Alan George (Avon & Somerset CRT); Andy Ellis (Rossendale & Pendle MRT); Ben Carter (Calder Valley SRT); Ceri Richardson (Western Beacons MSART); Ewan Thomas (MREW); Iain Nicholson (Bowland Pennine MRT); Mike Lake (Western Beacons MSART); Nigel Dawson (Brecon MRT); Peter Bell (President MREW); Peter Smith (Secretary MREW); Rob Brookes (Langdale Ambleside MRT); Simon Harris (Bowland Pennine MRT).



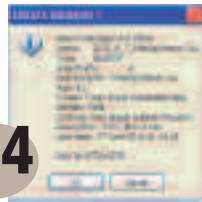
**1**  
INCIDENT CREATION:  
SEARCH OR CASUALTY EVACUATION



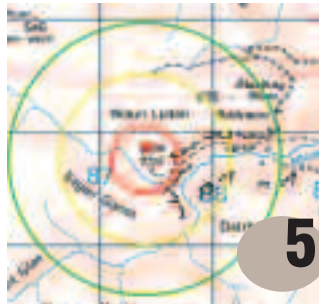
**2**  
GEOGRAPHIC REFERENCE  
POINTS:  
SELECT POINT TO DRAW PROBABILITY  
CIRCLES – SELECTION BY POINT ON  
MAP OR CO-ORDINATE



**3**  
MISSING PERSON DATA:  
ENTER KEY INFORMATION TO  
POPULATE INCIDENT  
PROBABILITIES BASED ON TYPE OF  
MISSING PERSON  
AREA PREFIXES, AUTOMATED  
INCIDENT NAMING OR SELF-INPUT



**4**  
KEY INFORMATION:  
ALL KEY INFORMATION  
DISPLAYED BEFORE  
ACCEPTANCE



**5**  
CONCENTRIC PROBABILITY CIRCLES:  
CREATE CONCENTRIC AREAS OF  
PROBABILITY OF 20%, 40% ETC, OR  
SELECT YOUR OWN PREFERENCES



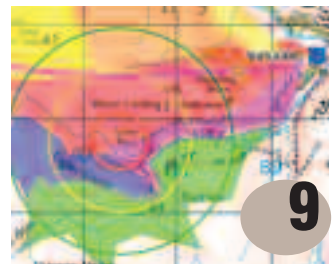
**6**  
INFORMATION POINTS:  
CREATE MULTIPLE INFORMATION  
POINTS, TASKABLE OR NON-TASKABLE



**7**  
PATH AND PROFILES:  
CREATE PATHS TASKABLE OR  
NON-TASKABLE  
REVIEW SEARCH PROFILES WITH  
SUMMARY DATA



**8**  
ZOOMING AND MULTIPLE MAPS:  
FULL ZOOM IN, ZOOM OUT  
FUNCTIONALITY WITH MULTIPLE  
MAPS AND AERIAL PHOTOGRAPHS



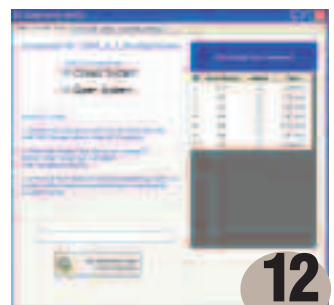
**9**  
SEARCH AREAS:  
CREATE MULTIPLE SEARCH AREAS



**10**  
ASSETS MANAGER:  
ASSIGN TEAMS AND KIT, OR ANY  
RESOURCE  
EASILY IMPORT 'CSV' FILES FOR NEW  
TEAMS  
FULL EDIT, ADD, AND DELETE  
FUNCTIONALITY



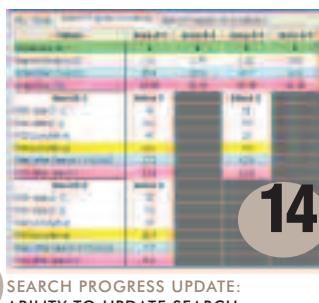
**11**  
TEAM AND KIT ALLOCATION:  
SET UP TEAMS, LEADERS, CALL SIGNS  
ETC  
ASSIGN ASSETS TO AREAS, PATHS,  
POINT ETC  
TASK, RE-TASK, MAKE AVAILABLE AND  
DISBAND  
ASSIGN RADIO CHANNELS



**12**  
CONSENSUS:  
UNDERTAKE CONSENSUS, 'OPEN' OR  
'CLOSED' SYSTEM  
SELECT ALL AREAS OR SELECTIVE  
AREAS



**13**  
CONSENSUS RESULTS:  
UNDERTAKE CONSENSUS BY  
PERCENTAGE, LETTERS OR NUMBERS  
PROBABILITY OF AREAS AND  
PROBABILITY DENSITY CALCULATED



**14**  
SEARCH PROGRESS UPDATE:  
ABILITY TO UPDATE SEARCH  
PROGRESS



**15**  
PROBABILITY TRACKER:  
ABILITY TO SEARCH AND  
DISPLAY RESULTS FOR  
NON-CONSENSUS AREAS

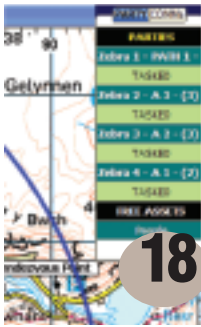


**16**  
SEARCH TIME ESTIMATOR:  
PROVIDES SEARCH TIME  
BASED ON RESOURCES  
AND KNOWN TERRAIN TYPES



17

**PARTY PANEL AND TASK PANEL:**  
**PARTY PANEL AND COMMS PANEL SHOW PARTIES AND ALLOCATED AREAS**  
 FREE ASSETS ALSO INDICATED AND UPDATED AS ASSETS BECOME AVAILABLE  
**TASK PANEL PROVIDES OVERVIEW OF SEARCH AREAS, PROGRESS AND KEY DATA**  
 AVAILABLE FOR AREAS, ROUTES, POINTS AND ACTIVITIES



18

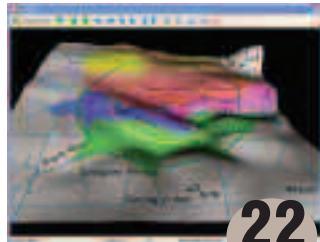
**TOOLS MENU:**  
**TOOLS FOR DISPLAYING DIFFERENT MAPS, CUSTOM AREAS, PRINTING OPTIONS ETC**

19



20

**DATA LOG AND 'BLACK BOX':**  
**SUMMARY DATA LOG CAPABLE OF ADDING FURTHER INFORMATION**  
**'BLACK BOX' RECORDING ALL DETAILS (NOT CHANGEABLE)**



22

**3D GRAPHICS:**  
**3D GRAPHICS VIEWER TO ASSIST IN TERRAIN UNDERSTANDING**



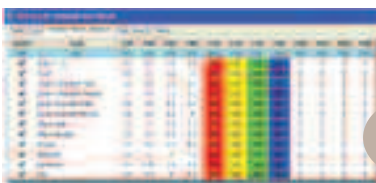
21

**GIS FUNCTIONALITY:**  
**FULLY FUNCTIONAL SYSTEM TO SHOW AND CHANGE DISPLAY**  
**FULL TRACKING CAPABILITY OF ASSETS**  
**TRACKING VIA, GPS RADIO/MIC, GPRS/GSM, SATELLITE (TETRA AND APRS ON DEMAND)**  
**ABILITY TO IMPORT GPS TRACKS INTO SYSTEM**



23

**DATABASE ADMINISTRATOR:**  
**FULL DATABASE ADMINISTRATION**  
**PREVENTS DATA DELETION**  
**PERMITS SHARING OF DATA**  
**PERMITS DATA TO BE IMPORTED**



24

**STATISTICS DATABASE:**  
**FULL DATABASE FUNCTIONALITY TO CHANGE DATA, ADD DATA, DELETE DATA**  
**NOT LIMITED TO ONE DATASET ABILITY TO USE STANDARDISED DATABASES OR SELF-PRODUCED DATABASES**



25

**CHANGEABLE DATA INPUT:**  
**TYPICAL TYPES OF TERRAIN**  
**ABILITY TO ADD NEW TYPES AND AMEND ALL DATA**

## If you're looking for a specialist vehicle converter...

...look no further than Coleman Milne. Over the past few years, we have extended our capability to cover specialist and emergency vehicle conversions, working with many local police authorities and other government agencies to produce a range of high quality individual projects. Bowland Pennine MRT came to Coleman Milne on the recommendation of Lancashire Constabulary. Together with our engineering department, they



were able to design and produce a vehicle tailor-made to their specific requirements. It was necessary for the vehicle to be a fully operational stand alone command centre that was mobile and could easily cover the team's territory.

The main saloon contains three work stations, with one specialist area for map plotting. Also included were mobile data terminals and desk space that has 12v and 240v power which is used for lap top computers and mobile phone and radio power ups. The area is illuminated with low power LED lighting and is heated by a diesel powered Eberspacher unit.

To the rear of the vehicle is a full height bulk head. On the nearside is a storage tower with power distribution, batteries, printer, PC access and radio comms



equipment, all of which can be accessed through the centre saloon or the rear storage area. The rear storage area is also required to carry awning, portable external lighting, generator, tool box and kit bags.

Externally the vehicle is fitted with Blue LED flashing lights to the grille, LED scene lights, twin blue light bars on the roof and rear flashing red warning lights. orange and white 'Battenberg' livery was also added. We welcome specifications of any type and can offer bespoke solutions for all your requirements.

For more information call 01942 815600, visit our website at [www.coleman-milne.co.uk](http://www.coleman-milne.co.uk) or email [graham.clow@woodall-nicholson.co.uk](mailto:graham.clow@woodall-nicholson.co.uk)



*The SARMAN training proved to be a valuable and educational day and will hopefully become a useful tool in the planning and control of future callouts.*

*Josh Dunn, Northumberland National Park MRT*

*...provides controllers, search managers and mountain rescue in general, with information promptly, accurately and at a standard that is easily used by all.*

*Ann Ogden, Calder Valley SRT*

# Floods and other civil contingencies

by Mike Graham

During my nearly thirty years with Penrith MRT we've been involved with several major incidents: Lockerbie, Grayrigg, the recent OMM, two floods and more recently the extended period of winter weather in January. The 2005 'Carlisle' flood and 2009 'Cockermouth' flood were actually countywide events and, on both occasions, a 'Major Incident' was declared and Strategic Coordination Groups (aka Gold Command) convened which lasted for four days and six days respectively.

Cumbria Police HQ is in Penrith and for this reason Penrith MRT personnel were first used as MRT liaison during the 2005 floods. I live about ten minutes from HQ and one reason I became involved was that there were no roads blocked on my route in! On this occasion three Penrith team members worked shifts over a period of four days and we all learned a lot about the world of resilience in a very short period of time. Some of the problems we faced had little to do with mountains. As an example, at one stage during the incident Penrith MRT was providing 999 call cover for swamped telephone boxes in the north of Carlisle.

In our contribution to the 2005 incident debrief we highlighted, amongst other things, the problem MR personnel in the SCG had contacting several teams simultaneously and the need for training in the role of MRT liaison. These issues are only now being resolved.

Following the Carlisle floods I was asked to represent LDSAMRA on the Cumbria Voluntary Agencies Committee (CVAC) – a subgroup of Cumbria Local Resilience Forum and the interface between voluntary groups and the blue light agencies. Through this role I was invited to attend training exercises and able to share this experience with colleagues, for example by asking Lindsay Cowan (Cumbria Emergency Planning Officer) to give a presentation on attending at Gold or Silver Command to a MREW Team Leaders' meeting. In other fall out from the floods, I worked with the Environment Agency on a direct system of alerting team leaders to incidents on their patch and with contacts in the Met Office on accessing their Emergency Response Service – now called 'Hazard Manager.'

CVAC collated a Capability Matrix – essentially a grid showing which agencies could provide help in, for example, support the ambulance service, attend first aid and medical posts, provide radios and trained operators. It was felt important to do this

because of concerns that MR personnel may 'end up filling sandbags' when their skills could be put to better use.

On the first day of the 2009 floods I was due to meet a police colleague to plan a search management conference. Instead, I got a call asking me to attend an SCG as MR Liaison. The group have to gel quickly and the fact I was able to say 'Good morning Kev' to the chairman (Gold Commander) and nod 'Morning' to other colleagues who I recognised, settled me in from the start. The SCG operates by sitting (or, to encourage brevity – standing) around a table with designated places for all the agencies involved. The chairman invites everyone, by rotation, to give a succinct input. My first contribution was to suggest that all LDSAMRA teams be alerted to their probable involvement. This was agreed and I phoned every team to ask that, preferably, bases be manned or, for teams that 'don't do standby' they assume a 'heightened state of readiness.' In fact Kendal and Langdale Ambleside teams were already in action and I was able to report this back to the next hourly meeting. Between meetings, written summaries of actions are produced so everyone can see what tasks have and have not been completed.

The MR Liaison role involves seeing a situation from a very wide perspective. There may be issues concerning roads, communications or patient transfer which at first sight would appear to have little to do with mountain rescue under normal circumstances. But if roads are blocked, MR may be the only asset with appropriate kit and skills to, for example, accompany a county engineer to inspect a bridge.

The role involves harmonising the work of several teams and forming an overview of MR commitment. Under normal circumstances, faced with an incident where more resources are needed, Lakes teams are used to calling in their neighbours to assist. In the 2009 floods, although the rainfall pattern indicated that western and central areas were worst affected, there was the possibility that rivers in the east of the county would come into play at a later stage as they have less of a spate effect. It was important to ensure that teams were not deployed only to find they were then needed on their own patch. A good example of this was Keswick, which flooded first. They may have called on Cockermouth to help them at a time when the flooding was moving towards the latter's patch. By consulting all concerned, I drew

up a scheme whereby teams in lesser affected areas, such as Coniston and Kirkby Stephen, would assist at Workington – supplemented by out of county teams from Teesdale & Weardale and Swaledale. It was also agreed that teams would only be tasked by the police and keep me informed of their level of commitment. (It is only since the 2009 floods that we have found a way for MR Liaison to access this information from the police logs.) So one major function was to give a synopsis of MRT activity to the SCG. All this was done ringing round between SCG meetings to get feedback from those on the ground and check they had sufficient resources. In future, it is hoped we will be able to use email.

There were other issues. The question of our own resilience was obviously a concern, MR personnel are not superhuman and we are not used to working over the extended time periods involved. I had assembled reserves from outside Cumbria and we were inundated by offers of help. To support the liaison role Penrith MRT's team leader joined me for part of the second day, and we had other team members standing by if required.

I also became aware that MRT personnel in the county had to rely on the media for information and so, with the help of the LDSAMRA secretary and webmaster we used the private page of the regional website to give members an overview of the situation.

There is no doubt it would be beneficial if MR personnel were trained before they undertake the MR Liaison role in a regionwide emergency. In my opinion, team leaderships will be fully occupied, or cautious, about leaving their patch and will probably be needed at Tactical (Silver) or Operational (Bronze) levels. Moreover, as the role is not concerned with command and control, we ought to be seeking experienced team members with good contacts within their region and the blue light agencies, plus an ability to fit into a team quickly.

Finally, this is my opportunity to say thank you to colleagues around and outside Cumbria who made my task easier, and to the staff of Cumbria Police, especially the Civil Contingencies Unit for their help and support (and to the police canteen for the bacon butties – served to your desk!)

**Postscript:** Since writing this piece, I have been involved once again in the role of MR Liaison with the SCG, for the West Cumbria shootings in June.

## Introducing the Alpha range

With the Summer Shows looming we are busy finalising the new products to be revealed in July/August. As usual there is a great offering of new and exciting gear. We have a new range of biners named the Alpha range, with two wiregates and one sports specific draw. Also we have a new belay device which solves the problem of needing two devices to cope with the wide range of diameter ropes available. The Chicane is aptly named so when you see it you'll understand why we called it this. Possibly one of the most interesting new developments in this field is the range of Dynamic and Static ropes which we are developing using the knowledge and expertise of the French Company Beal. We will have a full range available in the New Year, after which date we will no longer be distributing Mammut ropes. All in all a mammoth task for our development team, but we're confident we will deliver this fantastic package on time. Keep an eye on our website for updates on the development of new products – [www.dmmclimbing.com](http://www.dmmclimbing.com)



BLUE DRAGON CAM





# QUARTERLY INCIDENT REPORT FOR ENGLAND AND WALES JANUARY-MARCH 2010

The following is a listing of the number of incidents attended by MR teams in England and Wales during the period from 01/01/2010 to 31/03/2010. It is grouped by region and shows the date (day/month) the incident began. It is not comprehensive as many incidents have yet to be reported.

## Lake District

Cockermouth	14/01, 15/01, 18/01, 20/01, 28/01, 30/01, 13/02, 13/02 20/02, 03/03, 03/03, 07/03, 21/03, 29/03 18/01, 20/01, 28/01, 30/01, 13/02, 13/02, 20/02, 03/03 03/03, 07/03, 21/03, 29/03
Coniston	04/01, 30/01, 03/02, 06/02
Duddon & Furness	02/01, 05/01, 05/01, 05/01, 24/01, 27/02, 20/03, 31/03
Kendal	05/01, 06/01, 08/01, 24/01, 20/02, 19/03, 21/03, 29/03 30/03
Keswick	01/01, 02/01, 03/01, 03/01, 04/01, 04/01, 06/01, 09/01 15/01, 24/01, 29/01, 31/01, 01/02, 01/02, 03/02, 04/02 06/02, 08/02, 09/02, 09/02, 13/02, 13/02, 03/03, 06/03 07/03, 09/03, 12/03, 14/03, 14/03, 17/03, 21/03, 22/03
Kirkby Stephen	01/01, 03/01, 05/01, 06/01, 10/01, 11/01, 12/01, 26/02 27/02, 26/03, 29/03, 30/03
Langdale Ambleside	01/01, 03/01, 03/01, 03/01, 04/01, 06/01, 09/01, 09/01 10/01, 23/01, 24/01, 25/01, 25/01, 30/01, 30/01, 03/02 04/02, 05/02, 06/02, 06/02, 06/02, 16/02, 16/02, 20/02 21/02, 22/02, 27/02, 06/03, 06/03, 07/03, 22/03, 28/03
Patterdale	05/01, 11/01, 13/01, 31/01, 31/01, 06/02, 07/02, 11/02 16/02, 20/02, 20/02, 21/02, 22/02, 22/02, 27/02, 13/03
Penrith	01/01, 02/01, 03/01, 22/01, 28/01, 22/02, 26/02, 01/03 26/03, 28/03
Wasdale	06/01, 20/01, 31/01, 04/02, 03/03

## Mid-Pennine

Bolton	01/01, 01/01, 03/01, 03/01, 05/01, 06/01, 08/01, 09/01 09/01, 09/01, 10/01, 11/01, 12/01, 13/01, 15/01, 28/01 14/02, 14/02
Bowland Pennine	01/01, 01/01, 02/01, 05/01, 06/01, 07/01, 11/01, 15/01 03/02, 24/02, 28/02, 02/03, 04/03
Calder Valley	02/01, 04/01, 05/01, 06/01, 08/01, 09/01, 12/01, 13/01 14/01, 15/01, 16/01
Holme Valley	05/01, 06/01, 13/01, 05/01
Rossendale & Pendle	02/01, 02/01, 03/01, 04/01, 05/01, 05/01, 06/01, 07/01 09/01, 10/01, 11/01, 12/01, 13/01, 13/01, 21/01, 30/01 03/02, 09/02, 14/02, 19/02, 21/02, 21/02, 06/03

## NE England

Cleveland	02/01, 08/01, 26/01, 06/03, 08/03, 08/03
North of Tyne	06/01, 06/01, 07/01, 07/01, 08/01, 08/01, 09/01, 10/01 10/01, 11/01, 16/01, 06/02
Northumberland NP	06/01, 07/01, 08/01, 09/01, 10/01, 16/01, 06/02
Swaledale	03/01, 11/01, 12/01, 21/02, 25/02, 02/03, 12/03, 29/03 30/03
Teesdale & Weardale	09/01, 09/01, 09/01, 10/01, 12/01, 13/01, 28/01, 01/02 07/02, 14/02, 24/02, , 26/03

## North Wales

Aberglaslyn	01/01, 09/01, 18/01, 05/02
Llanberis	01/01, 01/01, 10/01, 23/01, 05/02, 06/02, 07/02, 18/02 19/02, 04/03, 07/03, 07/03, 08/03, 08/03, 14/03, 31/03
North East Wales	30/01, 05/02, 20/03, 21/03
Ogwen Valley	02/01, 05/01, 07/01, 09/01, 13/01, 20/01, 30/01, 03/02 05/02, 13/02, 13/02, 27/02, 05/03, 07/03, 12/03, 15/03 19/03, 20/03, 27/03
South Snowdonia	05/02

## Peak District

Buxton	03/01, 05/01, 07/01, 08/01, 08/01, 09/01, 10/01, 10/01 10/01, 10/01, 11/01, 19/01, 30/01, 07/02, 07/02, 17/02 02/03, 04/03, 11/03, 11/03, 27/03, 27/03, 29/03, 30/03
Derby	01/01, 05/01, 20/02, 05/03, 07/03, 22/03, 29/03
Edale	02/01, 03/01, 04/01, 05/01, 09/01, 09/01, 09/01, 10/01 10/01, 10/01, 17/01, 30/01, 31/01, 31/01, 07/02, 07/02 17/02, 18/02, 23/02, 27/02, 02/03, 04/03, 11/03, 11/03 21/03, 21/03, 27/03, 30/03
Glossop	02/01, 05/01, 06/01, 06/01, 07/01, 15/01, 31/01, 04/02 07/02, 07/02, 13/02, 14/02, 17/02, 19/02, 23/02, 27/02 11/03, 13/03, 16/03, 27/03, 27/03, 31/03
Kinder	05/01, 05/01, 06/01, 06/01, 06/01, 06/01, 07/01, 08/01 08/01, 09/01, 10/01, 10/01, 31/01, 07/02, 07/02, 23/02 27/02, 11/03, 13/03, 20/03, 27/03, 27/03, 31/03, 31/03
Oldham	02/01, 03/01, 03/01, 03/01, 05/01, 06/01, 06/01, 07/01 08/01, 09/01, 09/01, 09/01, 10/01, 12/01, 12/01, 19/01 11/02, 16/02, 21/02, 21/02, 23/02, 24/02, 28/02, 13/03
Woodhead	02/01, 18/02, 13/03, 27/03, 27/03

## South Wales

Brecon	01/01, 02/01, 02/01, 02/01, 04/01, 05/01, 06/01, 11/01 11/01, 13/01, 13/01, 16/01, 17/01, 17/01, 18/01, 25/01 28/01, 30/01, 13/02, 14/02, 16/02, 17/02, 17/02, 18/02 24/02, 24/02, 28/02, 02/03, 06/03, 21/03, 22/03, 27/03
Western Beacons	02/01, 06/01, 13/01, 16/01, 17/01, 21/03
Central Beacons	01/01, 02/01, 02/01, 02/01, 04/01, 05/01, 06/01, 06/01 08/01, 11/01, 11/01, 12/01, 13/01, 15/01, 16/01, 17/01 17/01, 17/01, 30/01, 13/02, 14/02, 17/02, 18/02, 18/02 24/02, 02/03, 21/03, 22/03, 27/03
Longtown	02/01, 04/01, 28/01, 17/02, 24/02, 22/03

## South West England

Exmoor	04/02, 20/02
<b>Yorkshire Dales</b>	
CRO	01/01, 10/01, 17/01, 28/01, 06/02, 20/02, 27/02, 06/03 22/03, 27/03, 29/03, 30/03
Upper Wharfedale	02/01, 10/01, 17/02, 09/03, 28/03, 30/03

## SARDA

England	03/01, 10/01, 10/01, 07/02, 07/02, 05/02, 18/02, 09/02 23/02, 13/03, 27/03, 29/03 30/03
Lakes	02/01, 15/01, 22/01, 28/01, 26/02, 13/03, 26/03
Wales	13/01, 30/01, 05/02, 18/02, 19/02, 08/03, 12/03, 12/03 21/03
South Wales	04/01, 11/01, 13/01, 13/01, 15/01, 17/01, 17/01, 28/01 17/02, 18/02, 24/02, 02/03, 22/03, 27/03

## RAF

Leeming	03/01, 31/01, 21/03
<b>Non-specialists</b>	02/01, 21/03

## March 2007: Oops! When it all goes wrong, the rescuer becomes the rescued

by Wayne Thackray  
Woodhead MRT

### In the beginning.....

I've always been an adventurous sort of fellow, so it was no surprise to my wife when I announced I'd joined our local mountain rescue team. Well, apart from finding out we had one, that is.

She was truly surprised, however, when I later expressed an interest in training a 'non-discriminating air-scenting search dog'. Apart from the mouthful in its description she'd no idea what it was. A little explanation though made it clear. 'It's a dog that searches for missing people in the hills love,' I said.

In March 2006, I told her I was going to Glasgow for the day and would be home around 8.00pm. I wouldn't tell her why, but all was revealed when I walked through the door with Dodge, the little black and white ball of fluff I had travelled over 600 miles to collect. Talk about careful selection. Dodge is a Border Collie from working parents in Glencoe – a true mountain dog!

A lot of water ran under the bridge between 2006 and 2007: Dodge got meningitis and we nearly lost him. We passed the registration and stock tests which are compulsory before training with the Search and Rescue Dogs Association (SARDA), obedience training, search training, weekends away, endless phone calls, book hunting... I immersed myself in SARDA.

### Moving swiftly on.....

Fast forward to March 2007 and the Trough of Bowland. It was the SARDA National Training Course, and all was going well. The day before, Dodge had put on a wonderful performance and passed the indication test, and now here we were in Stage 2 training.

The jump from Stage 1 to Stage 2 was huge; we had gone from 100 metre runaways and pop ups, to an area 300m by 300m with three bodies in it!



Casualty suitably packaged and on the way home

Thoughts running through my head... This is big... What if this happens? What if Dodge doesn't find? What if he false indicates? The only thought not in my head was what happens if Dodge or I should get injured? And that's exactly what happened!

It was on body three. We'd done two brilliant runs on the other two bodies and were searching down-slope back to the start point, I was trying to watch and work Dodge and, at the same time, cover the terrain at an acceptable pace, a skill I had yet to master! All of a sudden I saw Dodge's body language change. The strike on the body was obvious as he changed direction abruptly and into the body. 'GOOD BOY!' I shouted. 'What you got? Show me then.'

As Dodge came charging back to indicate with a few barks, I set off at a run to close the distance between us. Not watching my footing and concentrating only on Dodge I put my right boot onto a stone which turned my foot inwards into an unnatural and excruciating angle.

### Oh, the pain!....

I felt the pain! I heard the crunch! And down I went! Like a fool I tried to walk on it again and immediately fell back down. 'Oh no!' I thought, 'I can't weight bear, how am I going to back up this find? How will I consolidate Dodge's sequence?'

'Hang on... how am I going to get off this hill? As a member of mountain rescue I am more familiar with dealing with the injured and formulating their evacuation plans rather than my own. I needn't have worried, of course – after all, we were on a national search dog training course with fellow mountain rescuers from around the country.

I radioed in to my mentor to let him know the extent of my injuries and the well-oiled machine that is MR sprang into life. First on scene was Jefferson from Calder Valley SRT who checked me over as per Casualty Care protocol and splinted my ankle with a SAM splint. Jefferson and I discussed ways off the hill and, in true bloody-minded fashion I opted to try to walk off the hill using a trekking pole and with Jefferson and dogsbody Andy for support. Every step was very painful, but I was determined to get off that hill on my own two feet. I couldn't be carried off – imagine the embarrassment!

### I surrender...

I got 300 metres off that windswept hillside, until I had to finally give in at a boggy area I couldn't traverse. I sat down and surrendered and waited for transport. It arrived in the shape of the ubiquitous Bell stretcher.



Not me... honest...

Members from over six different teams and four different regions seamlessly meshed to put together the stretcher and sledge me off the hill. I remember a helicopter was offered which, of course, I vehemently declined. Being carried off was one thing, being helicopter evacuated is another!!!

What amazed me about the whole incident, when the leg-pulling had finished, was the way in which people there conducted themselves with the selfless professionalism which embodies the ethos of mountain rescue. Volunteers saving lives in wild and remote places, people whose only concern is to save the missing, ill, or injured anytime night or day, in weather that only the brave or foolhardy would venture out in. And the way in which these people from the length and breadth of the UK came together, without ever training together to achieve their one common goal – to get the casualty off the



hill, something that our vastly paid sporting 'heroes' cannot achieve in their paid employ, never mind voluntarily! It makes me really proud to be part of that, to be one of the many unpaid volunteers of mountain rescue.

So here we are in May 2010. I am over my ankle injury and Dodge and I went on to grade in October 2008, eighteen months after the injury. As a search team we have attended nearly 100 callouts and made three finds. I owe a big thank you to the crew who got me of the hill that day, otherwise things could have been very different. I realise if the same had happened when alone, or in the dark, or in even worse weather conditions I might never have got off at all, 500 metres may as well have been 500 miles!

It really does put a whole different perspective on it when you become the casualty!

# A miscellany of misadventure – I remember it well

by Andy Cloquet

MIC and current Training Officer for Ochils MRT, Central Scotland

I've made more mistakes in my mountaineering than you've probably had hot dinners: but this takes the biscuit!

One summer, many long years ago, Kevin McKenzie and I had been climbing together for a couple of months after following our individual versions of the sport for some ten years each. So perhaps we should have known better.

Anyhow, together, we'd played on the single pitch wonders of The Limekilns, waltzed up the mild extremes at Auchinstarry and breezed the middle-graders on Polney. My itchy fingers longed for more of the bigger high crag routes that really make up my climbing dreams.

Centurion is a Whillans & Downe route that was nicked from the Scots. It's got more than six pitches of over 30m length each, marches through a soaring corner then over a delightful traverse before weaving through overlapping slabs. It has two 5a cruxes and, of course, gives you a walk off The Ben afterwards. After a sleep and watching a pair of flounders ooze their way up the first pitch with the speed of a striking slug, my boredom, as opposed to any prudence or maturity, got the better and I backed off before even trying the route.

What was even less sensible, to put it mildly, was then to opt for Long Climb on the Orion Face. It was and still is over 20 minutes away from Centurion; it is the longest continuous

*Comfort me with cold. I do not ask you much:*

*I beg cold comfort.*

*Shakespeare: King Lear. Viii.36*

route in mainland UK but back then it was an alluring synch in its original grade of Severe. Also, to cap my inexperienced decision-making, I hadn't realised why the sun-drenched spot beneath the crag was starting to feel sharply cold. I just put this down to being on a big hill: but then I hadn't given the young Michael Fish much attention the night before!

Now, I'm sure you're more interested in how I was stuffed 'n suffered so I'll compress the climbing bits and head for the trouble.

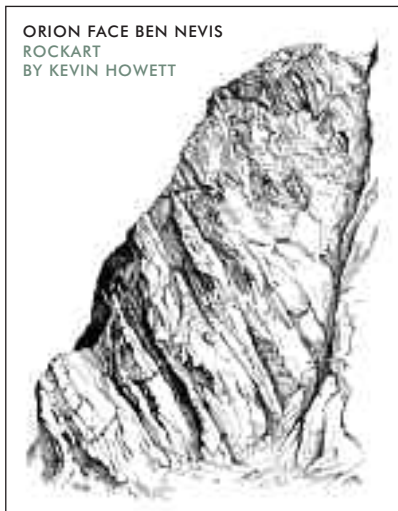
Six pitches up, across The Basin and at the top of the Second Slab Rib, I looked North. Adrenalin jolt, number one: I couldn't see much of the North! All I could see was a blanket of black and I was now aware of wee gusts of wind and wispy mists seeping over the face. Was I or my face bovvered?

Well... yes, I was. In fact, I was more than bothered. I ran out the next pitch at a furious pace and, with sweat dripping from me, I belayed Kevin to my stance from which he surprisingly asked me to lead on.

I found the Third Slab Rib quite demanding and fairly balancy yet I still wasn't paying any real attention to what the weather was serving up.

Angry gusts whipped at the face, blasting rain then firing tiny, stingy exploding hail. The service continued, with pelting rain, another dose of sleet and wind before repeating the

ORION FACE BEN NEVIS  
ROCKART  
BY KEVIN HOWETT



'take-all-you-can' buffet over the next 45 minutes!

Apart from leaning back off a runner and changing my PAs to boots, I was okay. Well, that is apart from feeling very scared, wet 'n' cold and shivering as if I'd had a kick of ECT!

My next belay was above the famous '40 Foot Corner' of the NE Buttress; so, I knew where I was. One more moderate pitch and I was on the wee ridge that leads toward the summit yet all Kevin and I could do was sit down behind a boulder where I started to feel cosy and sleepy!

I had the strength to get some fluids out of my bag but I don't remember walking off The Ben until hitting the descent route towards the hostel. What's more frightening is that I don't remember the drive home... and I was the driver!

Waking up the following morning was very odd: it was as if I had a hangover. I was dehydrated, aching all over, still shivering and I had blank spots in my memory as to what had happened between getting to the top of the penultimate pitch and being well down the path towards the hostel.

What's more weird, is that anything I now remember comes as wee short bursts of watching myself sheltering at the top. In this quasi, para-normal state I can relive the feelings of exhaustion and the rather enticingly warm glow that washed over me once I knew I was close to the summit.

As the years have rolled by, I have grown in my understanding of what my body was going through. Not only was it weakening with the creeping growth of wet-cold exhaustion but continued movement was being fuelled by the high level of adrenalin coursing around me that was ultimately adding to my super-tired state.

Hypothermia is insidious and in my experience it lingered beneath the surface of my consciousness just gnawing away at my metabolism; held only in check by adrenalin and perhaps determination but it was ready to pounce when my defences were at their ebb.

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# A brief dip into eponymous medical terms: 8

David Allan continues his examination of what's in a name

## Thomas Splint

There is no doubt that the introduction of the Thomas splint was one of the great advances in casualty management. A century later the splint is still in use with only minor modifications, a sure testament to its effectiveness.

Figure 3

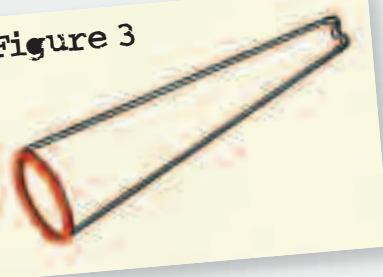
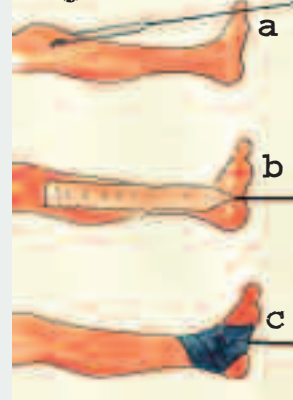


Figure 4



Figure 5



Thomas recognised the need to stabilise this injury by applying traction to the limb. His splint (Figure 3) utilises a ring pressing against the pelvic bones against which a pull can be exerted on the distal limb. It also allows for posterior support to the fracture site and prevents rotation (Figure 4).

The major challenge in use of the Thomas splint in a pre-hospital setting is to obtain effective attachment of the lower limb to the splint. If the splint is used for longer periods in hospital, a pin is inserted through the upper tibia and this frees the lower leg (Figure 5a). For immediate and short term use, most hospital departments rely on strapping applied to the lower leg but this requires the leg to be dry (and preferably shaved) and is not practical for outdoor use (Figure 5b). Some form of attachment around the ankle is the only practical solution but this means the pull is exerted through both the ankle and the knee and must only be used for relatively short periods.

Traction is obtained either by pulling the limb down to the end of the splint, as in the basic Thomas design, or by securing the foot to the splint and then extending the bars of the splint itself as in, for example, the Donway modification. Only a twin bar system as designed by Thomas will allow control of rotation and of posterior displacement at the fracture site.

Hugh Owen Thomas lived from 1834 until 1891 and is regarded by many as the father of British orthopaedics. He came from a family of bone setters who were descended from a survivor of a shipwreck on Anglesey in 1765. Hugh studied under the direction of Dr Owen Roberts in St Asaph and then at Edinburgh University and University College London.

He finally set up practice in Nelson Street,

Figure 1

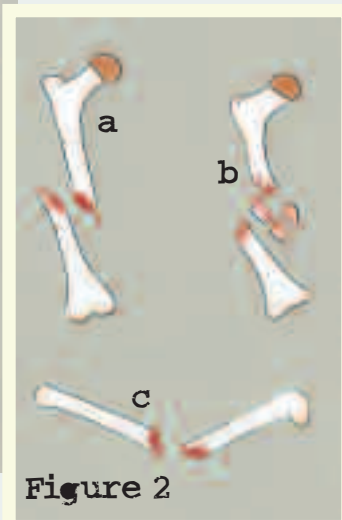


Figure 2

The first widespread use of the splint came during WW1, and during the construction of the Manchester Ship Canal. The mortality from femoral shaft fractures fell from 80% to 20% in both these situations.

The femur is the largest bone in the human body and is a very strong structure. The arterial supply to the leg runs very close to the bone and normally this is a secure arrangement (Figure 1).

Considerable force is required to fracture the femur and consequently major displacement of the bone ends occurs (Figure 2a). It is also very common for the fracture to be comminuted (Figure 2b). When the casualty is supine there is a marked tendency for posterior displacement of the bone ends (Figure 2c). The powerful thigh muscles also pull on the fractured bone causing shortening and moving the sharp fragments into surrounding tissues. It is easy to envisage how the blood vessels are at risk and how life-threatening haemorrhage can develop.

Figure 6



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Liverpool and devoted special study to fractures and tuberculosis of bones. He was quite a striking character, always wearing a black frock coat, smoking an endless supply of cigarettes and wearing a black peaked cap at a rakish angle to cover an eye injury he had sustained at school.

He passed his work on to his nephew, Sir Robert Jones, who was responsible for ensuring the splint was utilised during WW1. Robert Jones himself was an eminent figure in orthopaedic surgery and was responsible for establishing the Robert Jones and Agnes Hunt Orthopaedic Hospital in Oswestry.

## Trendelenberg Position

This eponym was given to the position of a patient when lying supine with a head down tilt (Figure 6).

It was originally advocated by Trendelenberg for use in abdominal and gynaecological surgery to allow better access to the pelvic organs.

Gradually the same position began to be used in instances of hypovolaemic shock in the belief that this position would protect circulation to the brain and the heart. It is difficult to pinpoint the time when this became established procedure but, having done so, it remained as standard practice for many years.

Recent wide studies have failed to demonstrate any benefits from this position. On the contrary there is some evidence that it may actually have an adverse effect by increasing the risk of regurgitation and of compromising respiratory capacity as the abdominal contents are pushed up towards the diaphragm. On current evidence this position should be used only for its original purpose.

Frederick Trendelenberg was a German surgeon born in Berlin in 1844. He studied medicine in both Edinburgh and Glasgow and eventually practiced surgery in Leipzig. He carried out extensive research work on surgery of the venous system. He died in 1924 from a tumour of the mandible.

## The Emergency Services Show 2010

This year's show takes place 24/25 November at Stoneleigh Park, Coventry. Last year attracted over 4,000 attendees and 2010 promises to be the best yet. This annual show promotes multi agency collaboration by bringing together everyone in the UK involved in an emergency – a unique mix of commercial and non-commercial exhibitors, from the manufacturers who showcase their latest products to the emergency services and first responders demonstrating how this equipment is actually used.

The two day supporting conference will provide delegates with the opportunity to join like minded professionals to discuss the latest news, developments and strategic advances and hear about lessons learnt and new initiatives from a range of high profile speakers.

New this year is Hall 3, which incorporating the larger displays of specialist equipment and vehicles previously shown outside. Exhibitors here will show the latest products, innovations and services, including practical demonstrations.

Hall 1 includes the Blue Light Zone – showcasing the 'Best of British' and the popular Emergency Response Zone made up of other Category 1 and 2 responders, professional, government and voluntary organisations, and offering perfect networking opportunities to affiliated organisations.

A dedicated UK Search and Rescue Zone will feature Cave Rescue, Lowland Rescue, Maritime Incident Response Group, MCA, Mountain Rescue England and Wales, RAF SAR and the RNLI.

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# Snippets from the Journals

## UK MOUNTAIN RESCUE CASUALTIES 2002-2006

Alasdair Mort and David Godden's study to profile casualties of UK remote and rural sport and recreation rescued by mountain rescue teams over a five year period makes interesting reading.

Across the UK, there were 6814 incidents involving 7995 people, including 550 fatal accidents. 3398 injured or ill casualties were assisted by rescue teams. Half of these had no medical problems. The ages of those assisted ranged from three to 104 years, and were predominantly male. Hillwalking accounted for 75% of mountain rescues and more were injured than ill. The injury most often reported was fracture (58.6%), with the lower extremity most commonly injured (53%). Multiple injuries were relatively uncommon. The rescue scenarios were broadly similar. Teams administered medication to more casualties in England and Wales than in Scotland and helicopters assisted a greater proportion of casualties in Scotland.

Outdoor recreation in remote and rural parts of the UK is becoming increasingly popular. In Scotland alone between 1991 and 2001 there were at least 250,000 Scottish resident mountaineering days per month with a similar number of participants from other parts of the UK and abroad. The UK remote and rural environment

is challenging, characterised by high winds, rain, snowfall and avalanche risk.

The rescue of those in remote areas of the UK involves several organisations operating under the delegated authority of the police – mountain rescue teams, the RAF and, in Scotland, three police teams. Teams are now called to assist in a variety of incident types including true mountain rescues but also off-mountain, community emergencies such as flooding and mass disasters.

The medical and first aid training of team members varies. A 1998 survey reported that 53% of teams had some members who were not trained in first aid. Around 25% had members who were Emergency Medical Technicians or skilled in Advanced Trauma Life Support. Approx 15% had members who were trained in prehospital trauma life support or prehospital emergency care. 56% of teams generally had a doctor present on callouts.

Air support to rescue is provided for the most part by the RAF, the Royal Navy and Coastguard. The majority of rescue helicopters have winches and are staffed with aircrew trained to paramedic level, and may operate independently of a rescue team.

The aims of the study were to describe the spectrum of non-fatal MRT casualty rescues, and examine the difference between the two regions. The information

retrieved from the two national committees concerned only those casualties who were alive when located by rescue teams, some of whom may have died later during rescue or in hospital.

UK rescue teams managed a wide variety of clinical problems over the period, often in very challenging conditions, a considerable distance away from definitive care. Most of those requiring medical assistance were injured rather than ill and had hurt only one body part. However, multiple injuries did occur and a range of potentially life-threatening medical illnesses were also reported.

Many of the results of this study mirror previous research. For example, the lower extremity has often been reported as the most frequently injured body part. Also, more of those rescued had injuries rather than medical illnesses. Similar trends have been reported in studies conducted in North America. However, comparisons with international literature must take account of differing patterns of search and rescue provision. For example, in the European Alps helicopters are used more regularly, and snow sports account for a greater proportion of those rescued. In Scotland most ski injuries are dealt with by dedicated ski patrols and do not involve MRTs. In contrast to the UK, rescue is not a free service in

many countries – rescue groups may seek to recoup costs and this may influence the range of casualties rescued.

Some key differences between casualty rescues in the regions were identified. First, MRTs administered medication to casualties in England and Wales more often. That said, this does not suggest that casualties' injuries in England and Wales were any more serious than in Scotland. It could be that teams in England and Wales carried medical supplies more regularly. Anecdotal reports, from Scottish rescue personnel and personal communication with the authors, suggest that Scottish teams may choose not to carry bottled oxygen and Entonox because of weight considerations on remote rescues. There may be a case for exploring the potential of lighter alternatives (eg. intranasal diamorphine) which can be carried regardless of the length of the stretcher carry. Also, the annual statistics published by the two committees suggest that teams in England and Wales have more physicians present on callouts. They may carry a wider range of medications as standard and be able to administer them more often.

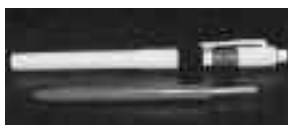
Opiate prescription is limited to doctors and nurses who have taken prescriber training, whereas paramedics may dispense but not prescribe. Non-medical rescuers

## AIRFLOW EFFICACY OF BALLPOINT PEN TUBES: A CONSIDERATION FOR USE IN BYSTANDER CRICOTHYROTOMY

A study examining the suitability of commonly available ballpoint pens as substitute emergency tracheostomy tubes concluded that, contrary to popular belief, the majority of ballpoint pens appear unsuitable for use as a substitute tube – only two fulfilled the criteria for use: the Baron retractable ballpoint and the BIC Soft Feel Jumbo.

The pens were evaluated for dimensions, how quickly a temporary tube could be constructed and airway resistance with differing flow rates. The internal dimensions of the tubes were found to vary considerably. The time taken to construct a temporary tube ranged from three to 170 seconds and, in the majority of pens, the airway resistance increased dramatically as the airflow rate increased.

**Emerg Med J 2010;27:317-320**



FROM RETRACTABLE BALLPOINT TO TEMPORARY TUBE

## DRESSED TO IMPRESS?

A survey investigating patients' preferences regarding the attire of doctors in the hospital environment reports some results which are perhaps not so surprising. Despite a general trend away from wearing white coats, patients reported most confidence in doctors wearing them. Clean and freshly laundered scrubs and white coats were considered to be the

most important aspect of doctors' attire. Casual attire was ranked as being the least confidence inspiring. Might similar conclusions be reached by casualties in a mountain rescue setting, where a more professional, clean and uniformed appearance might inspire greater confidence than any old hill gear?

**Clin Med 2009;9:519-24**

## NICE GUIDELINES FOR THE INVESTIGATION OF HEAD INJURIES – AN ANTICOAGULANT LOOPHOLE?

The authors of this report had observed three patients who did not fulfil the NICE criteria for the investigation of head injuries with CT, but were subsequently found to have significant brain injury. All were on warfarin. The guidelines give clear indications for treatment – a patient on anticoagulant medication is required to have lost

consciousness to warrant a CT scan unless obvious stronger indications exist.

Their study, over a three month period, and including 39 patients, concluded that while NICE guidelines provide a useful tool for the investigation of head injuries, in elderly patients on anticoagulants there was a risk of missing significant head injuries and therefore a lower threshold for scanning should be adopted.

**Emerg Med J 2010;27:277-278**

may administer drugs but only under the delegated authority of a responsible medical officer. The governance arrangement for controlled drugs was strengthened in the UK following the Shipman Enquiry. Since 2004, rescuers in England and Wales who administer drugs must be a current holder of the Mountain Rescue Casualty Care Certificate. In Scotland, measures are less formal and team doctors train members in the use of medicines. Wherever possible, rescuers should seek medical advice before administration, but in emergency situations this is not always feasible. An additional issue is that of maintaining training and competency. Some teams may witness serious injury rarely and thus administer opiate analgesia infrequently. It has been suggested that MRT members should be part of a hospital clinical teaching programme in order to maintain competency. Helicopters were involved in a greater proportion of casualty rescue in Scotland than in England and Wales. This may reflect the remoteness of Scottish hills, the time saved by the use of helicopters for searching/casualty extrication, or greater helicopter coverage in Scotland compared with England and Wales. Helicopter support was also associated with a lower use of Entonox. This could be because rescues without helicopters

involve longer stretcher carries with a greater imperative for pain relief. Also, the administration of pain relief may commence in the aircraft if the helicopter is already on scene or arrives soon after. The study did not include data on the use of Entonox in rescue helicopters.

The study did not take into account ski injuries, as these are assisted by dedicated ski patrols and have been previously reported. Nor did it include those casualties rescued by helicopter without team support. Rescuers have varied levels of medical first aid training, so there was considerable variation in the detail of incident reports. As an overview of casualties rescued in two large geographical areas, the study may also mask local differences in the workloads of individual teams. However, the study provides an up to date and novel summary of the spectrum of casualty rescues that occur across the UK. The authors conclude that the similarity between casualty rescues in Scotland and England and Wales could be a stimulus to greater collaboration between the two regions with particular regard to training programmes, equipment, evaluation and outdoor education initiatives.

**Emerg Med J 2010; 27:309-312**

### FIELD INTUBATION OF CARDIAC ARREST PATIENTS: A DYING ART?

This study looked at prehospital advanced airway management and its complications in out-of-hospital cardiac arrest (OHCA) in a four-year, observational, retrospective review of patients attending the Royal Infirmary of Edinburgh with a primary diagnosis of OHCA. The conclusion, from the 794 cases reviewed, was that the optimal method of maintaining an airway and ventilating an OHCA patient has yet to be established and that use of tracheal intubation as

a routine intervention should be reconsidered. Prehospital tracheal intubation is associated with significant complications and may reduce survival – ambulance services should consider adopting alternative strategies in airway management.

**Emerg Med J 2010;27:321-323**

#### Prehospital intubation complications

Multiple intubation attempts	32
Unrecognised oesophageal intubation	15
Endotracheal tube displaced en route	3
Endobronchial intubation	3
Endotracheal tube cuff above cords	2
Total	55

► more Snippets from the Journals nextpage

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**EFFECTS OF TRAINING TIME AND FEEDBACK ON VENTILATION SKILLS IN LAY RESCUERS**

Peter Paal, Marcus Falk, Elisabeth Gruber, Werner Beikircher, John Ellerton, Hartmann Kainz, Volker Wenzel, Hermann Brugger

A study into the difficulties lay rescuers have acquiring ventilation skills during training. (MREW Medical Officer John Ellerton is one of the authors.) Non-feedback manikins are still widely employed, although skill acquisition is suboptimal. The authors analysed if a longer training time and verbal feedback, given by an instructor, improved ventilation skill acquisition with non-feedback manikins.

Forty-three high school students without prior medical training participated in this prospective randomised trial. Under one-to-one instructor guidance, 25 volunteers were trained on a manikin with a mouth-to-mask device for ten minutes, and eighteen volunteers for twenty minutes. After training, volunteers were assessed and verbal feedback was given: ventilate more if the mean tidal volume <0.5 L, ventilate less if >0.7 L or ventilate the same for 0.5–0.7 L. The volunteers were then reassessed.

At the assessment, tidal volume, minute volume, peak airway pressure, ventilation rate and stomach inflation rate were comparable between the ten and twenty minute groups. After verbal feedback, at reassessment both groups increased tidal volume, minute volume, peak airway pressure and stomach inflation rate, while ventilation rate remained comparable. The authors concluded that both ventilation training times resulted in comparable skills. Volunteers hyperventilated the manikin and produced excessive stomach inflation in this model and this increased even further after verbal feedback.

Ventilation is essential during basic life support of patients with prolonged cardiac arrest. Unfortunately, it is difficult for lay rescuers to acquire ventilation skills during Basic Life Support training. For example, after BLS training lay rescuers achieved an ideal tidal volume in only 17-32% of ventilation attempts, and stomach inflation was detected in

82% of assessments. Skill acquisition during training is higher with feedback-aided manikins than with non-feedback manikins. Nevertheless, non-feedback manikins are still widely used, presumably because of their lower cost and easier maintenance. In this traditional approach, an instructor may give individual verbal feedback during or after training hoping to improve the acquisition of ventilation skills. However, feedback given by an instructor may not be optimal for skill acquisition as 'the problem of poor retention of cardiopulmonary resuscitation skills may lie with the instructor, not the learner or the curriculum.' To compensate for the missing automated feedback function, BLS training time could be extended.

Recent studies suggest that mouth-to-mask ventilation may be more effective than mouth-to-mouth and mouth-to-face shield ventilation in regard to adequate tidal volume and minimising stomach inflation. If this could be further improved with extended BLS training, progress could be made.

The study was approved by the local ethics committee and written informed consent obtained from 43 medically untrained, unpaid, healthy high school students before participation. Before the study, the volunteers underwent a health check. They were randomised in sequential order of

arriving, using a randomisation list generated with a software package, to ten to twenty minute training on a one instructor to one volunteer basis.

The instructors were physicians with at least five years of certified advanced life support experience. Some volunteers did not show up at the test venue, resulting in 25 volunteers being trained for ten minutes, and eighteen for twenty minutes. Each volunteer was trained to ventilate a manikin (Resusci Annie) with a mouth-to-mask device (Pocket Mask) without chest compression. Training was standardised using an instruction flow chart. Volunteers were instructed that ventilation was sufficient if the chest was clearly seen to rise.

Ventilation was first explained, then demonstrated by the instructor, followed by the volunteer performing ventilation under guidance of the instructor for ten vs twenty minutes. After training, volunteers were assessed with a previously described bench model consisting of a freely movable head with a test lung attached to the tracheal outlet, and flow sensor attached to the gastric outlet, their instructions to treat the bench model as an adult in respiratory arrest. Before assessment, they were able to familiarise themselves with the bench model and perform five

ventilations. Then, volunteers ventilated the bench model while the study parameters were recorded for a minute. Volunteers were blinded to the measurements but could watch the artificial lung rise during ventilation, similar to the manikin's chest expansion during training. Tidal volume, minute volume, peak airway pressure, ventilation rate and stomach inflation rate were measured.

After assessment, verbal feedback was given to the volunteers according to European Resuscitation Council guidelines. Volunteers who had ventilated with a tidal volume <0.5 L were asked to ventilate more during reassessment, those with a tidal volume >0.7 L to ventilate less and with a tidal volume 0.5–0.7 L to ventilate with the same amount; volunteers were then reassessed for another minute after five ventilations to familiarise themselves with the bench model. Traditional BLS courses may last 2-6 hours with only a fraction of time actually being spent on practice. In the study, extending the training time did not improve ventilation skills (in agreement with other studies). Volunteers hyperventilated the manikin after both ten and twenty minutes of training. After verbal feedback, hyperventilation persisted or increased even further. However,

► more Snippets from the Journals [nextpage](#)





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it is unclear if lay rescuers will ever acquire sufficient ventilation skills with traditional manikin, given that these manikins do not provide instant feedback and instructors are not able to teach effectively. Whether this may tip the scale further towards omitting ventilation, as recently recommended, remains to be seen.

Some limitations should be mentioned. Firstly, the study determined skill retention in an experimental setting only, and parameters may vary greatly in a real CPR scenario because of higher stress levels. Second, the authors included only healthy robust teenagers in the study, older people may ventilate less vigorously. Thirdly, training was on a one instructor to one volunteer basis. Lastly, the focus was on ventilation only and the results may not apply when ventilation training is combined with chest compressions. Further studies should incorporate chest compressions into the study protocol. The study concluded that possible strategies to improve the acquisition of ventilation skills may be using better, feedback-aided manikins, but their use is currently limited. Thus it is important that training methods using traditional non-feedback manikins are improved. Some authors have suggested better training methods, manoeuvres to open the upper airway, and implementing improved equipment. Instruction on a one-to-one basis, longer training time and verbal feedback by an instructor do not result in optimal ventilation quality. The authors suggest that training quality should be improved mainly with better training efficiency and not by a longer training time. Indeed, there are advantages to a shorter training time, group training and self-training with a poster or DVD facilitating the training of more people, or more frequent training should be considered.

Both ten and twenty minute ventilation training resulted in comparable skills. In the test model, volunteers hyperventilated the manikin and produced excessive stomach inflation. This increased further after verbal feedback.

**Emerg Med J 2010; 27: 313-316**



### HEAT RELATED ILLNESSES DURING THE 2003 HEAT WAVE IN AN EMERGENCY SERVICE

This study describes patients admitted to an urban emergency service in France during the 2003 heatwave. The records of 769 patients aged over 65, admitted during August with heat-related illnesses, were studied and a comparison made between those who died and those who survived.

Heat-related illnesses, typically categorised as heat stroke or heat exhaustion – occur when the body's thermostat become imbalanced. Classic heat stroke is caused by environmental exposure and can develop slowly over several days. Symptoms include delirium, convulsions or coma with core body temperature >40C and a dry skin. Exertional heat stroke primarily affects younger active subjects – developing rapidly, within hours and frequently associated with high core temperatures.

Heat exhaustion manifests with a core temperature between 37°C and 40°C. Symptoms are milder than for heat stroke, including dizziness, thirst, weakness, headache and malaise. The exceptional

heatwave in France in the summer of 2003 prompted a huge increase in deaths – mostly over-75 years, although heat-related deaths were also seen in younger patients. Emergency departments were overwhelmed with patients.

Those admitted were more likely to live in institutional care and less likely to live at home with the family. They had no biological signs of overt dehydration but did have higher heart rate and body temperature, and laboured breathing.

The study found that heat related disorders can be identified early, even in a busy emergency department because most patients present with high fever and/or acute neurological symptoms such as delirium or drowsiness. These patients must be triaged as soon as possible to allow management with cooling methods\*. The study also confirmed that patients with a high fever, high heart rate or low blood pressure are at higher risk or early death and must be rapidly managed in an intensive care setting.

Diabetes was found to be a risk factor for death. People with diabetes are at increased risk of illness during hot

weather and the risk of death also increased during these periods. This may be because fluid and electrolyte disturbances may exacerbate poorly controlled glucose – glycaemia was high in those that died with heat related illness. This may also be affected by the decreased sweating response due to impaired blood flow to the periphery associated with diabetes. Renal failure was also a risk factor.

The authors concluded that heat-related illnesses are a group of underestimated conditions with a high morbidity and mortality. In the context of a heatwave, emergency physicians must be able to identify these patients early, examine the risk factors and begin cooling techniques to improve the diagnosis.

\*Cooling methods used included immersion in cold water (uncomfortable and difficult to monitor); placement of ice packs in the armpits, groin and neck; evaporative cooling (spraying the body with tepid water then using a fan to aid evaporation); and other more invasive methods such as gastric lavage and use of drugs.

**Emerg Med J 2010;27:297–299**

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# Other uses for a search dog

by John Coombs

Articles which have been handled or worn by people will take on the smell of that individual. The scent comes from bacteria on particles of skin which are left on anything a live person comes into contact with – this scent of ‘human property’ is similar to that given off by any individual and can be detected from a few yards away.

I was taught as a young handler how to encourage my SARDA dog to find and indicate on a rucksack hidden in the heather. This only required me to build on the skills already learned in searching for people, as the scents were already familiar to my dog and it was very useful if no one was available to help me train. Also, taking the skill a step further, my dog could find lost wallets, mobile phones and car keys much more quickly and easily than I could.

As with all scent work, human and canine work as a team – the dog may smell what the man cannot see. Such skills can also be useful to search managers on operations as demonstrated by an incident in Linacre Woods, Chesterfield.

fifteen metres up a steep bank from the point the missing person was located, we reduced the search to a quarter of the original circle. Ten minutes further searching, and Wayne’s dog Dodge found a fleece jacket about 100 metres further on. With the two finds, our original task briefing gave us a rough direction of travel. My dog, Biscuit, soon returned to indicate a satchel containing the medication blister packs and then the mobile phone, about 250 metres from where the casualty had collapsed.

## Standards

Though many handlers train and practice it, property search is not part of SARDA working standards. Police ‘general purpose’ dogs are trained to locate large or small items carrying human scent – they indicate a find by ‘pointing’ or lying down next to it.

## Property finds can provide useful clues

A couple of points to consider:

- Distressed people are prone to lose and drop personal items.
- Confused people who feel constrained or are caught up in vegetation will take off their shoes and discard loose clothing.
- Paradoxical undressing features in 20–50% of hypothermia deaths.
- Hypothermia (and casting away

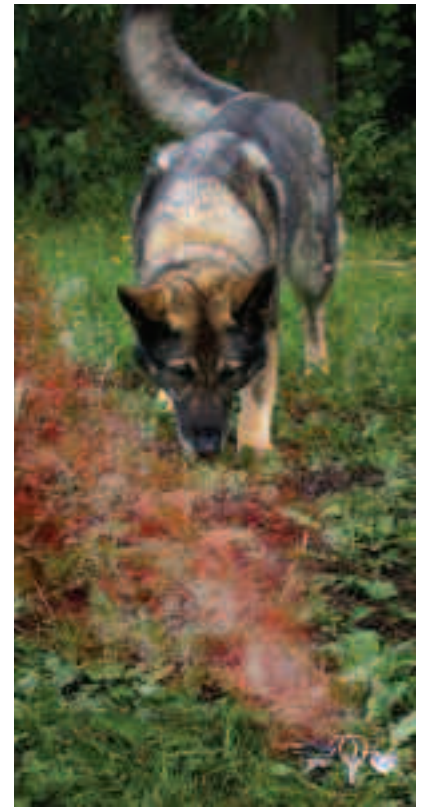
clothing) can be linked to alcohol and drug overdose as well as neurodegenerative disorders such as dementia – it is the final common pathway for many search casualty deaths.

## As with live bodies, any person’s scent will do for an article-trained SARDA dog

They don’t discriminate between people, and might find anything that carries human odours – whoever owned it and whatever it was used for!

Normally a trained dog won’t indicate on property that doesn’t carry any human scent. So if a dog does indicate on an article – it could mean it has been recently worn or handled.

If a SARDA team is available, it might be a



SMELLY KEYS AND FINDING THE SCENT CONE

good policy to ask team members not to touch any property they find, until the search dog’s reaction to the article has been observed.

Recently dead people wear clothing that still retains the scents of life. This gives our handlers their only practical way of training for finds on corpses – the dog can find the clothing.

## Even when the handler is briefed to work ‘close’, dogs are not guaranteed to find anything out there

At best there is ‘less chance of an individual searcher missing a hidden article if he or she is working a dog.’

It is much faster but less certain than a fingertip search and definitely quieter than a brush cutter.

It is not the smell of the item itself that attracts the dog, but the human scent that is on it. The quantity of skin particles deposited and retained, and so the potential for odours emitted, depend on the material it is made of, the article’s size, where on the person’s body it was carried and for how long. Scent given off from articles is also affected by precipitation and temperature.

In the right conditions a good dog could detect a well soiled neckerchief or cap from 50

## 8 May 21:15 Peak District, Derbyshire Police

Three dog teams were called to a search of Linacre Woods, Chesterfield, for a 24 year old despondent man. He was found in dense woodland, at 23.50 by Dave Mason and search dog Megan – conscious, but suffering from the effects of an overdose of his medication. While the casualty was being evacuated by Edale team members, three dogs started a property search around the point where the young man had been found. His shoes, coat, mobile phone and a bag containing partly used blister packs of tablets were all found by the SARDA teams. The incident closed at 00.24. The casualty was discharged from hospital the next day. Handlers: Dave Mason (Megan), Wayne Thackray (Dodge), and John Coombs (Biscuit). Edale and Derby MRTs

From the SARDA England website

There was no medication with the casualty when Megan located him on a path in dense woodland yet, if the drug containers could be recovered, they might provide vital information for hospital staff.

As soon as the stretcher party was clear of the area, an article hunt was started, working the dogs in widening circles from the casualty’s location. Most handlers have a different command for property search – mine is ‘Seek’ which to the dog means, ‘There is something small for you to find.’ Biscuit puts her nose down and quarters up to 20 metres away from me as I walk forward. This is very similar to a search for a person – but on a smaller scale. Even a very smelly piece of clothing does not give off nearly so much scent as a human – so a dog will have to be much closer to detect it.

After Megan found a pair of shoes, about

# What is NSARDA?

Harold Burrows explains

What is NSARDA and what has it been doing to improve the lot of the search dogs and handlers across the UK and Ireland since its official conception in November 1997? NSARDA stands for the National Search And Rescue Dog Association and came out of the old SARDA chairmen and secretaries' committee, where all the associations would bring problems regarding the training and deployment of search dogs and come out with a way forward.

Mike Amps of SARDA England was elected chairman of this group, albeit a very loose group, of associations. SARDA groups would get together and review any money to be divvied out from Pal dog food, exchange any good war stories of searches and make sure each association had external assessors for the yearly assessments. All went well for a number of years until the money dried up and each association had to raise all the money it needed by itself. The getting together of the SARDA groups lost its value and was seen as irrelevant.

The next chairman was John Bell of SARDA Southern Scotland, who began the change from just being in the background of the search dog world, to being of use to all SARDA groups throughout the UK and Ireland. The first thing was to establish whether a national association was needed and the answer was a firm yes from all. Now the hard work to bring in one national standard for all mountain rescue search dogs, and for all SARDA groups to agree. The assessment of these dogs had been in existence from the very beginning of search dogs in the UK. Over the years each association had made the odd one or two changes to their training standards, and slight changes to the way they would run an assessment, but basically they were the same high standard.

Well, after six years and lots of typing and retyping, we had an agreed national standard, and this is still an active and live document. Two associations, while happy to partake in the bringing together of the standard did not wish to sign up to it and still remain outside the NSARDA Mountain Search Dog standard.

After the Lockerbie incident, SARDA groups found they were being asked more and more to assist in the location of missing people in more rural and urban settings. While it was fine to have mountain search dogs range many hundred metres from the handler to pick up air scent, in the rural and urban setting this was a disadvantage. We needed to train dogs and handlers differently for the type of job we were being asked to perform – more control of the dog and closer proximity to the handler. The standard required of this type of search dog would now need to be developed. The on-the-job training we did while we were at Lockerbie was not the way to go.

The Lowland Search Dog standard developed, with a totally different approach to the training needs of the dog and handler. It was identified by the hasty type search, where a dog team will quickly search a footpath and the fifteen metres each side of the path. The open area and woodland search is the next stage for the lowland search dog, searching in a similar way to the mountain search dog, but on different ground. A nationally agreed standard is now set, with trainers still adapting and making small changes to the standard.

Now involved with people leaving the nursing homes, we realised we would need another type of search dog – the Trailing Search Dog. The trailing dog would need to be able to scent discriminate and search for only one person, be that on field, rock or road in all weathers and with other humans walking around the area. A scent article is needed for the trailing dog and that can be a pillow case, a hat, a swab from a steering wheel or a swab from a boot print. The trailing search dog has proven its worth on many occasions in locating people that have been missing for over 24 hours. To have a direction that the missing person has travelled reduces the search area by a vast amount and leads to a faster find.

Another new development has been the Drowned Victim Search Dog championed by Neil Powell in SARDA Ireland North. Here the dog can locate drowned victims underwater and it has taken a number of years to perfect the training requirements. NSARDA was happy to support the first drowned victim search dog training course held in Northern Ireland. Students from all over the UK and Ireland were bowled over by the accuracy of the dog find demonstrated by Niel. All agreed the course hit the mark both in presentation and content.

As more urban search dogs were being asked for, demand outstripped the resource and Lowland Search Dogs (LSDogs) was formed in the south of England. They did ask SARDA for help with the training of their dogs, but this was impossible due to the very number of dogs needed and still having to respond to the increasing number of callouts for mountain rescue. LSDogs was formed about the same time as ALSAR.

NSARDA produced a memorandum of understanding with lowland search dogs group. We have members of LSDogs at our regular meeting and an NSARDA representative at theirs. We share the NSARDA Lowland Search Dog standard with them and they share their standard with NSARDA, so slowly we are all coming together.

metres, whereas a knife or key that has only been handled a few times might only be smelt from two or three metres downwind.

Small items that are covered over, or dropped in heather or long grass, are easy for a dog to miss – particularly in light airs or with temperature inversion.

Without further human contact the odours on clothing or property gradually disappear over time.

## Some previously successful property searches by SARDA handlers

- A team radio, dropped on Bleaklow the previous day.
- Five items of property, the smallest being a watch, discarded by a missing person just before he died a week previously. The articles were up to 400 metres from where his body was found in dense undergrowth.
- A controller's hat on Kinder Scout.
- A small wallet containing medical gear lost in deep bracken below Stanage edge – the dog got this from 30 metres away.
- A pair of shoes which led to a dog find on a missing dementia patient.
- Following the evacuation of a missing person, a dog search recovered a shoe, purse and other personal effects left in a small tunnel through dense vegetation.

Finally, please remember all dog handlers like to talk about successes and gloss over the failures! There is plenty of stuff out there that I have failed to locate – I'm still trying to find a £10 note I lost in Grindsbrook in 1986! Even so property search is one of the most useful things you can do with a dog.

Thanks to Wayne Thackray and William Coombs for the pictures, Steve Rowe for medical advice and Bob James who started me off with the whole thing.



WAYNE AND DODGE ON A SEARCH

 [more about NSARDA nextpage](#)

## ► more about NSARDA

The next development on the horizon is to help develop Scent Discrimination Search Dogs. This will be like the mountain dogs you all know and love, but able to air scent for a particular scent, be it from a person or article. This has been made possible by the hard work of Tom Middlemas and Gwen Patmore with regard to scent discrimination while training the trailing search dogs. Just imagine a missing person from a camp site and has gone into the hills. This dog could air scent for the particular person amongst all the others on the hill. You would have the speed of a mountain rescue search dog with indication only on the one person we are looking for.

NSARDA has been busy in the background improving the lot of search dogs and handlers, developing groups to be able to respond to your call for help and maintaining the high standards you expect from a search dog team. We are only contained within what we think – get outside the fur-lined rut we all like to sit in, and see what can be achieved with a little hard work and a belief in your dog.

NSARDA members are: SARDA England, SARDA Wales, SARDA South Wales, SARDA Southern Scotland, SARDA Ireland, SARDA Ireland North, SARDA Isle of Man, NSARDA Angela and NSARDA CanTech

NSARDA has agreed national standards for: Mountain Rescue Search Dogs; Lowland Search Dogs; Trailing Search Dogs; Drowned Victim Search Dogs; Hasty Search Dogs; Open Area and Woodland Search Dogs; Collapsed Structure/Debris Search Dogs; Building (Sound) Search Dogs; Avalanche Search Dogs.

We are working on other areas, so watch this space as we keep forever moving forward.



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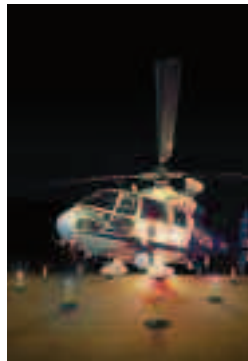
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# Supporting Mountain Rescue

## PING combine golf with a 44 mile walk TO RAISE MORE THAN £18,000 for Lakes search and rescue teams



Eight hardy souls from iconic golf club manufacturer Ping, have soundly disproved the fondly held theory that golf and any sort of serious walking are diametrical opposites. (Four hours on a golf course? Pah! Waste of a good walk!) And raised a stunning £18,000 for the Lake District Search and Mountain Rescue Association in the process.

At 04:50am on Saturday morning, 19 June Ping Europe's managing director, John Clark, was joined by ex-locals Dave Fanning and Phil Craghill, Keswick resident and golf professional Paul Jenkinson, and five other members of Ping, whose headquarters are in the 'flatlands' of Lincolnshire, to tee-off at Eskdale Golf Club for a unique walking challenge.

After completing the eighteen holes, the group immediately embarked on what was to be an extremely demanding Lakeland fell walk that saw them tackle 44 miles over two days, culminating in a charity golf tournament at the picturesque Keswick Golf Club on Sunday, 20 June.

As if this task wasn't hard enough already, each member of the team also carried a full set of golf clubs plus food and water on their backs the entire way! En route they scaled over 10,000 feet, climbing via Scafell Pike (highest point in England) and Helvellyn (the third highest) as well as twenty other recognised peaks.

After walking for over 26 hours, with only three hours sleep, the triumphant party were met at Keswick Golf Club by a cheering crowd of supporters including members of Lake District teams, representatives of the golf industry, friends and family.

JOHN CLARK PRESENTING THE CHEQUE TO RICHARD WARREN, ALONG WITH REST OF THE TEAM

Whilst handing over a cheque to Richard Warren, chairman of LDSAMRA, on behalf of a tired Ping team John Clark said, 'This was undoubtedly the hardest physical challenge any of us have ever undertaken. We are hugely proud of the amount of money raised for this worthy cause and we would like to thank all of our supporters who helped us achieve our goal.'

'It really was a tremendous effort by all of the team - it has to be the equivalent of doing the Three Peaks Challenge twice, back-to-back!' commented Richard Warren.

'As a volunteer organisation we truly appreciate the money raised by Ping as it will assist us greatly in the work we do,' he added

The idea of holding a golf competition in the Lakes to raise money for the local mountain rescue teams originally came from John Clark,



TOP LEFT: THE PING TEAM ON THE SUMMIT OF SCAFELL PIKE: LEFT TO RIGHT: PETE BROWN, STEVE CARTER, DAVE FANNING, PHIL CRAGHILL, TIM JENKINS, JAMES TURNBULL, JOHN CLARK AND PAUL JENKINSON

ABOVE: JOHN CLARK, MANAGING DIRECTOR OF PING EUROPE

who spends much of his spare time in the Lakes and is well on his way to completing the 214 Wainwright Challenge.

Dave Fanning said, 'We decided it should be a challenge rather than just a game of golf, hence the 35 miles of walking and two games of golf in less than 48 hours!!!'

If you would like to support the PING challenge you can still donate in one of the following ways:

- Firstly, to make a convenient and secure credit card donation, go to the Just Giving at [justgiving.com/Lakeland-Challenge](http://justgiving.com/Lakeland-Challenge).



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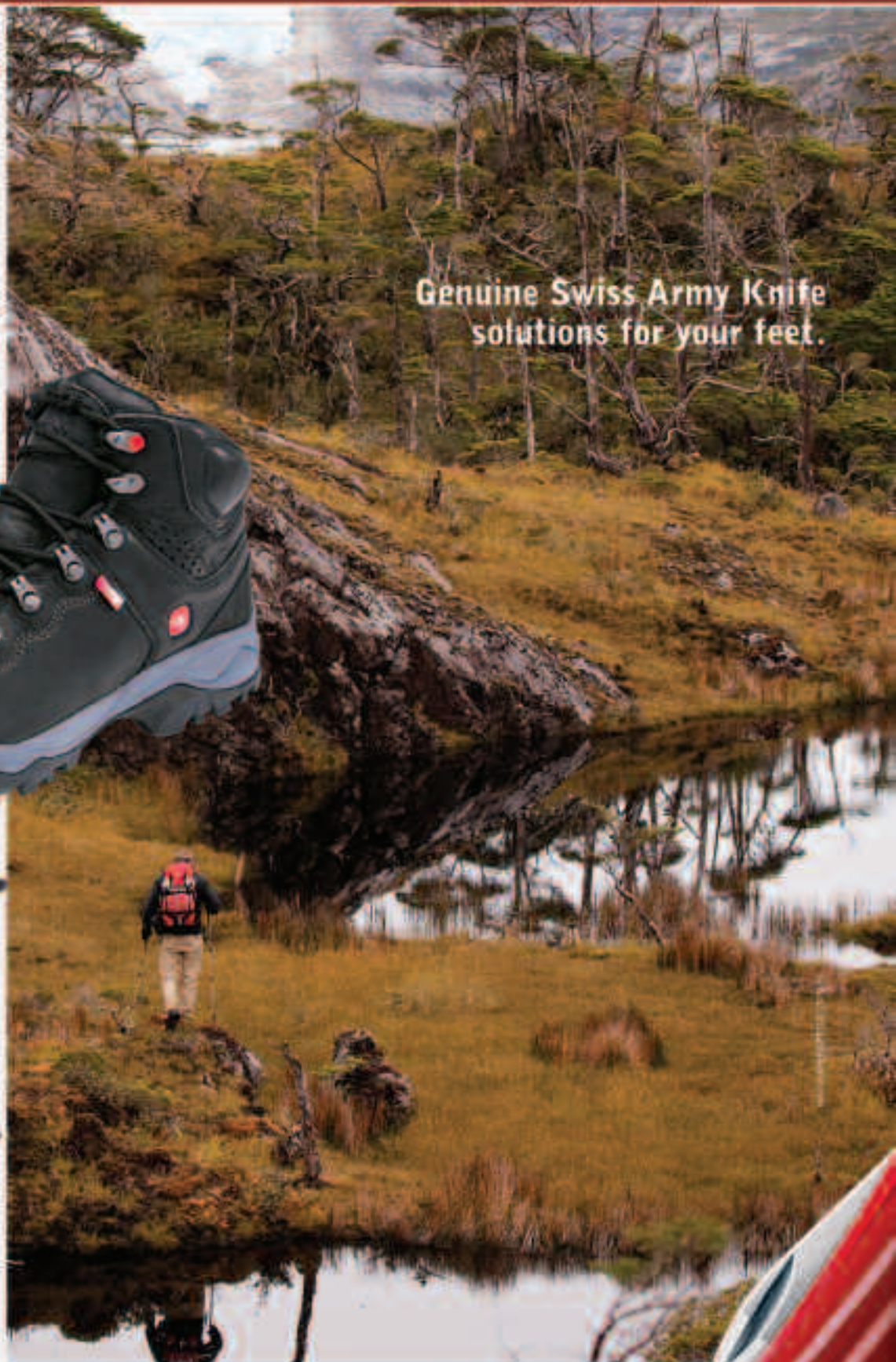


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