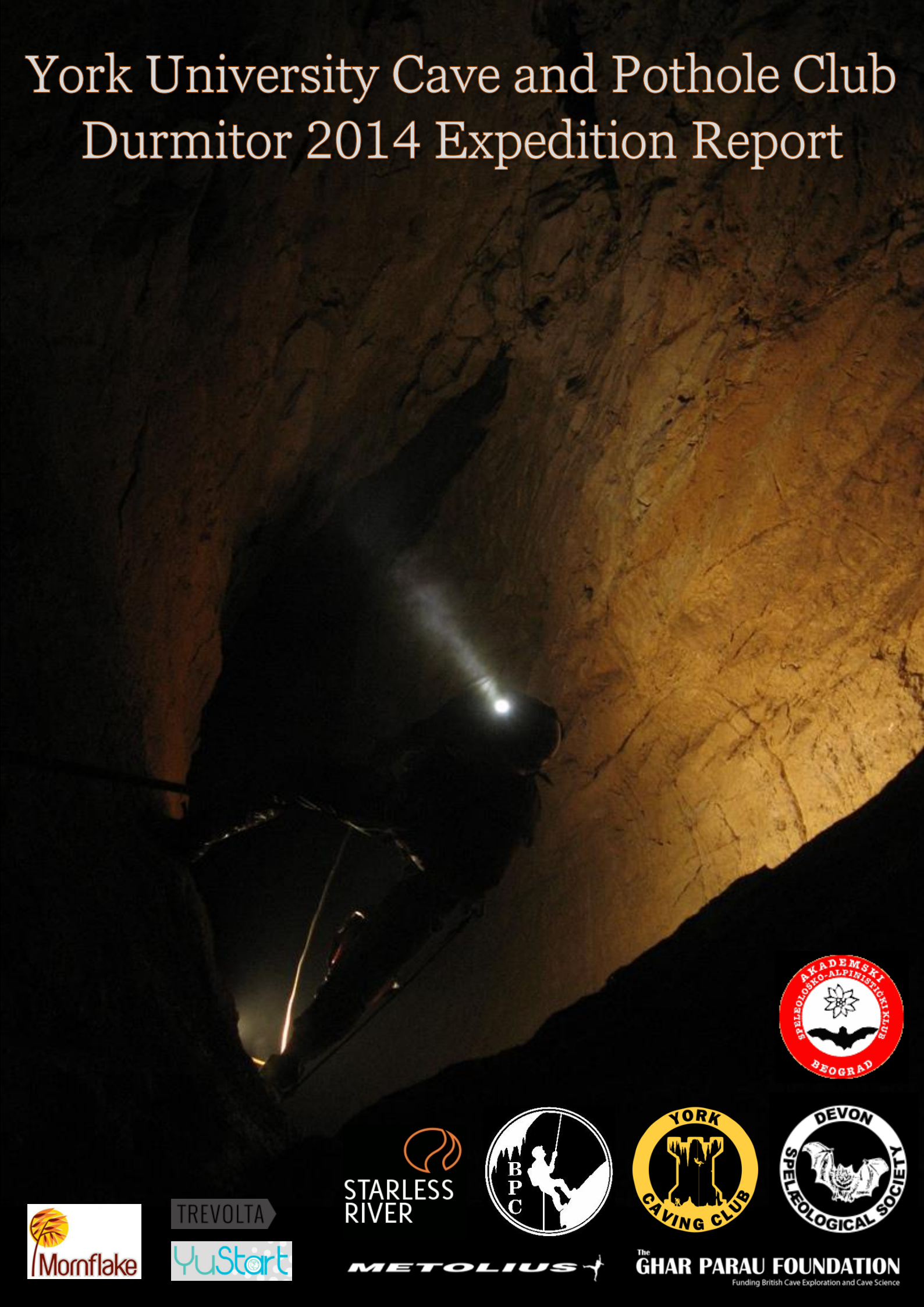
York University Cave and Pothole Club
Durmitor 2014 Expedition Report



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Introduction

With a limestone layer over 1.5 km deep, the Durmitor plateau has great speleological potential, as exemplified by the deep caves that have been found by YUCPC, ASAK and others in the south of the national park. These include Jama na Vjetrenim brdima (-775 m) and Fliš (-582 m). Since 2011, YUCPC have focussed on a new area in the north, which has also shown great promise and a large number of new entrances have been documented. This area has virtually no surface water at all, and a lot of exposed limestone. Some of the water sinking in this region resurges at the Black Lake approximately 600 m lower, but more excitingly, some of the water resurges at the bottom of the Tara Canyon, over 1 km lower and several miles away horizontally.

Our previous expeditions to this northern area had resulted in two major finds. In 2011, YF1, a huge snow-filled shakehole 5 minutes' walk from camp was found. This was explored in 2012 to 130 m deep but was inaccessible in 2013 due to high snow levels. In 2012, Bunda Jama was discovered and this was pushed in 2013 to a depth of around 300 m with a wide open continuation. In addition to these finds, a huge area of ground has been systematically prospected and over 200 entrances logged. This gave us several other promising leads to look at in 2014.

With such rich pickings to be had this year, we needed a large team to make the most of the available time. Enthusiasm was high and we had no trouble recruiting a strong team of 19 cavers - a mixture of students, older club members and welcome opportunists. Well supplied with rope, metalwork, food and all the accoutrements of camp, we set off for Montenegro with hope in our hearts. Conditions were ripe for an excellent expedition, and barring an early mishap, that is exactly what we had. Read on to find out more…

Figure 1 View over Donja Ališnica from Gornja Ališnica

Aims

The primary aim of the 2014 expedition was to continue pushing the mighty Bunda Jama, by far our most promising lead. However, we were also hopeful that low snow levels would allow us to re-enter YF1, so made plans to enable this to be explored concurrently.

In addition to these two caves, we had a number of interesting entrances found in previous years which we hoped to return to if time allowed. These included:

Braon Prst Jama

Subway

Hello Apple

The Whoppa

We also had a number of tertiary aims, back-up plans and extras which would be nice to do if there was spare man-power and time. These included further prospecting to the north of the camp and on Half-Bunda Hill in K-Do, searching for a possible camp site closer to the entrance of Bunda Jama in K-Do, investigating the bats of Bunda Jama and looking at resurgences in the Tara Canyon.

Sponsorship

As always we are very grateful to the wonderful Ghar Parau Foundation, who this year awarded us £650 towards funding for our expedition, as well as two Alex Pitcher awards (£75 each) for Will and Vicky. We also received monetary contributions from a number of people *via* crowdsourcing websites Trevolta and YUstart; thanks go to Mark Mortimer, Helenm, Terry Doyle, "Tractor Boy" and everyone else who contributed anonymously.

Once again we are grateful to Mornflake for sponsorship, who this year provided us with a whopping 90 kg of granola with which to make our breakfast bags. Yum!

Metolius gave the club a hefty discount on a 200 m reel of (excellent) 9 mm rope from America, and we were also donated approximately 200 m of used 9 mm rope from Bradford Pothole Club; many thanks to both.

We are also thankful to a number of people/clubs for the loan of various pieces of equipment, which saved us a lot of money. Thanks to: Devon Speleological Society (DSS) for their DistoX; ASAK for a further DistoX as well as a large quantity of metalwork and rigging gear; YCC for carabiners and rope protectors; Tony Seddon/Starless River for AS hangers; Mike Rippon for 90 m of 9 mm and also for being our UK emergency contact.

Expedition Members

Adam Hughes (AMH)
Adam (Walmslers) Walmsley (AJW)
Andrew Hurlbatt (RADH)
Andrew Vick (AJV)
Andrew (Sandy) Wright (APW)
Avelina Wright (AW)
Catherine Moody (CLM)
Charles (Chuck) Holder (CH)
Laura Bennett (LDB)
Lieke Oosterkamp (LO)
Mandy Fu (MF)
Mark Sims (MTS)
Martin Hoff (MH)
Ruud van der Aa (RvdA)
Sarah Jefferys (SJ)
Toby Finbarr Buxton (TFB)
Vicky Bailey (VB)
Vojkan (Voja) Gajovic (VG)
Will Scott (WGS)

Figure 2 The 2014 expedition team in Gornja Ališnica

Expedition Summary

The 2014 YUCPC Durmitor expedition has been our largest and most productive expedition yet in terms of finding deep cave. The two main leads were both safely and successfully explored to satisfying conclusions, with one still possibly offering further potential by diving. The expedition has again run very smoothly with no major squabbles, fallings out or logistical difficulties. In fact it was an exceptionally friendly and good-humoured expedition and a thoroughly enjoyable three weeks.

Bunda Jama was our big hope and it did not disappoint. We were able to quickly rig down to the previous limit of exploration and were breaking new ground within a week. The charge was lead by Toby and Andy V who began rigging down Resonance Rift. Exploration progressed almost continuously, sometimes with two pushing teams in a day. Concurrently, other teams were working on surveying, re-rigging, digging and photographing other parts of the cave. The new cave gave us some fine pitches, charming formations, a flirtatious streamway and a magnificent sump. This sump, discovered on the final pushing trip, has since made several divers drool with excitement. Bunda Jama is now 622 m deep, making it the 2nd deepest cave in Durmitor and, we believe, the 4th deepest cave in Montenegro.

YF1 has also yielded some fantastic cave, much of it formed partly in the ice and firn of a giant snow plug. Exceptionally high snow levels in 2013 prevented access to this cave, so we were excited this year to be able to gain entry via the same route we had used in 2012. The ice chambers and formations below the tip of the iceberg were even more spectacular than those above and included a vertical ice shaft like a glacial moulin. After this we broke into 'normal' ice-free cave. Passing through a large breakdown chamber, some token formations and an impressive pitch, the cave eventually came to an end in a crystal covered grotto at a respectable depth of 305 m.

In addition to the deep caving, we continued to shaft-bash previously discovered entrances and prospect new areas. Less luck was had with these activities this year, the vast majority of leads closing down or being choked with snow. The newly prospected areas were also disappointing, particularly given the scale of some of the surface features seen on satellite imagery. However it is always useful to 'tick off' an entrance or an area, and there is still plenty to go at.

This year we were lucky to be joined by Voja, a Serbian caver from the Belgrade University caving club, ASAK, who some of us knew from previous expeditions. Also joining the expedition were Avelina, Sandy and Martin, friends of the club who each brought a wealth of experience and were most welcome. For the three youngest members (Sarah, Vicky and Will), this was their first taste of expedition caving, and they loved it. Andy Hurlbatt was also experiencing the delights of Durmitor for the first time. For everyone else this was a return trip; we just can't resist its charms.

Adam Hughes had a very unfortunate accident when he badly twisted his ankle on the first night while walking to camp, which effectively ended his expo before it had begun. Dealing with the situation was, for many expedition members, their first experience of anything approaching a rescue situation and it went as efficiently as we could have hoped.

We expected to be exploring two deep caves simultaneously so preparations for this year's expedition were even more rigorous than before. Two training weekends were held in the months prior to the expedition, covering skills such as bolting, rigging, first aid, rescue techniques and rescue scenario planning. This year, we also put together a detailed emergency document (Appendix 5), setting out procedures to follow in the event of possible incidents. A huge amount of planning went in to the sourcing and logistics of equipment, as well as other essentials such as food and communal camp kit. This all went off without a hitch, thanks to our seasoned 'committee' of Mark, Cat, Andy, Laura and Toby.

We experienced slightly more varied weather this year compared to the previous two years, possibly as a result of the expedition being a week later in the season. In the first week we experienced a fair amount of cool, cloudy and misty weather. The second week was predominantly sunny, and the final week saw the arrival of some episodes of high winds and heavy rain. Although the rainfall could be very heavy and occasionally prolonged, it never interfered with our caving and was more of a hazard above ground than below. There was no obvious indication that any of the caves we explored were liable to flooding.

Even with all the caving and running of camp and looking after Adam, there was still time for plenty of R&R. Shopping trips invariably included a leisurely lunch at Restaurant Durmitor, courtesy of our favourite Montenegrin chef, Ross. Hard caving trips were often followed by rest days, and there were usually several people staying at camp each day. Towards the end of the expo, several of us enjoyed a walk up the highest peak in Durmitor, Bobotov Kuk. The Black Lake (Crno Jezero) provided a welcome bathing opportunity on the last day before our minibus back to the airport.

Travel

Transport for the expedition was much the same as the previous year. Team A (12 people) travelled on Sunday 3rd August. After getting early morning flights to Dubrovnik from a range of airports - Manchester (Jet2) / East Midlands (Jet2) / Birmingham (Flybe) - a pre-booked taxi provided transport to Žabljak, where they met Lieke, Ruud and Voja, who had travelled by car/bus.

Team B arrived in Žabljak a week later (10th Aug). Incidentally, Avelina took advantage of a Lufthansa flight from Manchester (*via* Munich) on the Saturday to allow some sightseeing in Dubrovnik.

Lieke, Ruud, Voja and Laura left approximately a week early, the latter two taking a bus to Belgrade, from where Laura flew back to Manchester (Turkish Airlines, *via* Istanbul).

Since buying flights, a new route has opened with Ryanair flying direct from London Stansted to Podgorica; this may prove useful in future years.

Figure 3 The bags are loaded into the taxi at Dubrovnik airport

Camp

The set-up at camp was very similar to the previous year. Extra tarps were used to provide extensions to the main tarps, giving a "porch" to the mess tarp and allowing space for bag storage at the end of the gear tarp. The gear tarp was constructed with a new set of sturdy steel poles since the Vango poles used in 2012 weren't very strong.

The main addition this year was that of the day shelter, quickly dubbed "The Naughty Box" for reasons unknown. The aim was to have a space where those recovering from long trips could nap in the shade without being bothered by flies and other wildlife. This was created using the Vango poles, a tarp for the roof, lots of cord and tarp clips and a reel of tutu netting; it was then furnished with two roll mats. Further roll mats provided additional comfort around camp.

A "wet gear" area was also created in the dip next to the mess tarp, where used caving gear could be laid out over rocks under the shelter of a tarp, to protect from rain whilst avoid getting things in the main gear tarp wet. This was abandoned part way through the expo due to the tarp being battered by high winds.

Figure 4 Camp

Base Camp

Lieke and Ruud brought a large tent that was pitched at the Ivan Do Autocamp for the duration of their stay and contained the following: 2 sleeping bags, 2 pillows, 2 sleeping mats, 2 chairs, table, stove, pans, crockery and cutlery, extension lead, multiway extension lead an assorted phone chargers. This base camp was set up in advance of walking up to camp, which proved to be incredibly useful for managing the Adam situation and should be considered essential for all future expeditions. The camp was set up and ready when required in the middle of the Sunday night when Adam returned from hospital.

The tent pitch at Ivan Do had an electricity supply which was used for charging drill batteries, mobile phones and gadgets. This proved especially useful given the extra phone calls needed to sort out Adam's insurance

and travel arrangements. Phones with long battery lives and spare batteries were still needed on the mountain.

Due to the amount of gear required in 2014, six extra hold bags were taken on the outbound journey: a single bag was used for the return journey (containing the other 5 bags inside!). Some extra gear was also allocated to the two drivers. The base camp provided a means of storing these bags, as well as a large amount of equipment and food which was carried up the mountain as needed.

Future Camp Areas

The next expedition to Durmitor is likely to be even more focussed on exploration in K-Do, due to potential diving of the Bunda Jama sump, continued exploration of Braon Prst Jama, and many tasty prospecting areas. For this reason, K-Do has been searched both in 2013 and 2014 for potential sites for a future camp.

Details of these findings are in the 2013 report; nothing new was found in 2014, and the lack of a decent water source remains a problem. Bunda Jama itself would be a possibility, but is a long way from the site; a hauling station for snow set up in one of the nearer shakeholes would be faffy but potentially feasible. In addition, a camp here would be unlikely to accommodate more than 10 people so would be more suited to a secondary/satellite camp. A small satellite camp on the grassy sections between the K-Do ridge and Bunda Jama could also potentially be an option.

Pemission

Typically, tourists visiting the Durmitor National Park must pay an access fee on entrance, either directly to the rangers stationed at the entrances during the daytime or by buying a ticket in advance. As in previous years, Peca applied on our behalf to the National Parks of Montenegro organisation for permission to camp and cave in the Durmitor National Park. We were granted permission by the central office, however unfortunately the official permission document was not received by the regional Durmitor National Park office in Žabljak by the time we arrived. This meant that, unlike in previous in years, the local rangers were unaware of the arrangement and requested payment when we re-entered the park after shopping. In addition, rangers were (unusually!) also sent up to the camp to request payment for camping. Voja attempted to negotiate with the regional National Parks office in Žabljak but this was difficult due to the August vacation and internal politics. We did therefore have to pay several fees for camping, although it wasn't entirely clear how the amounts we were charged were calculated!

Gear

As this expedition was more pushing-focussed than the previous visits to Durmitor, there were two main differences when it came to gear, the first being that everyone had a full set of personal caving kit, rather than shared kit; the second was the addition of drills for the use of throughbolts. We took two identical Makita drills, one belonging to Mandy and another purchased out of expo funds. Throughbolts used were Fischer Faz II, bought from Screwfix and Eibmarkt. Based on the maximum number of holes we could get from the drill batteries, and not wanting to run out like we almost did with the spits in 2013, we bought 500 throughbolts; this turned out to be major overkill, but at least we'll have plenty for the future!

In order to minimise costs and maximise our battery life to weight ratio, we experimented with running the drills from LiPo batteries. This experimentation was very productive and we used LiPos throughout the trip. See below for details of the set-up.

Another change came in the form of first aid kits. Previously, in addition to an emergency kit kept at camp, members had each taken a reasonably comprehensive first aid kit. This year, personal kits were kept fairly basic and we instead had a number of group first aid kits which were taken (along with a bothy) on every trip, whether on the surface or underground.

In the previous few years, expeditions have only used retired 10.5 mm rope from YUCPC. This year, to continue in our efforts to keep weight to a minimum, we looked to acquire some thinner rope. Thanks to a donation from BPC, a discount from Metolius and a loan from Mike, we were able to take around 500 m of 9 mm rope which cut down on weight by over 10 kg compared to the equivalent in 10.5 mm.

Montenegrin SIM cards were also purchased and were effective at keeping phone bills down.

The Drill Set-Up

On previous Durmitor trips to the northern region we've gone for hand bolting: we hadn't really found enough significant to warrant the weight/time/expense of sorting a drill option. This year with potentially two significant vertical caves still going, a drill or two seemed pretty vital. Mandy's 14.4 V Makita BHR162 was an obvious choice, and Ben Wright had also offered the use of his Einhell BT-HD (handily the same voltage!), but what to do about batteries...

We were left with some obvious options:

Batteries:

- Proprietary
- Homemade Li-ion
- LiPo

Charging:

- Žabljak (at a campsite with power)
- Solar
- Generator

Our main requirements were a solution that primarily made drilling bolt placements feasible as the norm, without excessive battery conserving required. It seemed stupid to take a drill and not be able to use it as much as we'd like. The secondary requirements were that it was as lightweight as was sensibly feasible, reliable, and quite significantly that we were able to take it on a plane.

In terms of charging, solar power had got a lot more capable than it was a few years back, but still had its limitations. For contingency we could always have Žabljak as a backup charging option, but some sort of intermediate battery would be vital so we could charge drills batteries on cloudy days/overnight. To cope with the fluctuating solar output, the two obvious options were SLA batteries or LiFePO4. Obviously SLA have provided a nice cheap option, but coming in at 4 kg, plus the weight of the solar panels, the charge controller + chargers, it was vetoed based on the fact that for only a few kilos more we could probably take out the generator which wouldn't need a sunny day. It's also worth mentioning that we wouldn't have been able to fly with SLAs... Unfortunately Tesla and co seemed to be pricing LiFePO4 batteries out of our range, which was a shame given their capabilities. That would obviously be in addition to the not-insignificant cost of solar panels, and the fact that they'd almost certainly be redundant after a couple of years, so solar was off.

The generator was vetoed based on weight alone. At 9 kg it's pretty light for a generator. But at 9 kg + chargers + petrol, it was unlikely to charge its own weight in batteries.

That left us with charging either proprietary batteries or some other batteries in Žabljak. A few people tend to do a shopping run every 3-4 days, so whatever option we chose had to provide enough juice for 1 or 2 drills for that length of time, without being prohibitively heavy for the carry up with food.

Poprietary 14.4 V 3.0Ah Li-ion batteries for the Makita have enough juice for about thirteen 8 mm x 75 mm throughbolts, and weigh 500 g. To buy new they cost in the region of £80 (no way!) or for an ebay gamble, they're £20+ (really 3 Ah?!). Ben had made some external Li-ion 18650 packs for his Einhell with good results, getting 16 holes from a 7.8 Ah pack. We could obviously do the same for either/both drills, but flying with Li-ion batteries isn't that easy: they have to be in hand luggage and aren't allowed to be (visibly ;-)) modified. We could have taken a gamble on putting them in the hold, but if the gamble didn't pay off it would have been a pain to say the least...but my soldering skills certainly weren't up to making a pack from scratch that looked "unmodified".

So what else? LiPo batteries were something we'd been pondering for a while, but we were a bit put off by speculative scare stories. They're used widely in remote control vehicles because of their high energy density, but they're known to be fairly catastrophic when things go wrong...

We were pretty surprised to see at their nominal voltage and capacity, they actually have a lower energy density than Li-ion, but this is mainly due to discharge rates; if they both discharge at the same rate then LiPo wins hands down. Having used LiPos for filming lights in Mexico, Mark had a couple of 5 Ah ones that handily were 14.8 V (Turnigy 5000mAh 4S1P 14.8v 20C hardcase). Time for some tests.

We were bit worried about frying the drill, because LiPos manage such high draws due to their minimal internal resistance (these were rated to 100 A continuous discharge!) so we started with the proprietary batteries to see what sort of volages/currents to expect. This required a pretty professional set-up:

Figure 5 Our professional drill testing rig

It was clear that the Li-ion voltages sagged pretty significantly under load (16.1 V resting & 12.6 V drilling) and that with no load on the drill we pulled 10 A, and whilst drilling we needed a steady 23 A or so. Wow.

We tentatively hooked up the LiPo and were pretty staggered by the difference it made to the feel of the drill given the nominal voltages and basic chemistries of the batteries were essentially the same. It was drilling holes at a pretty incredible rate, and the multimeter made it pretty clear why. The current through the drill was 27 A, and the battery voltage was up at 13.8 V even under full load. With a fair amount of waiting around to make sure we didn't risk overheating the drill, we found we could get 30 (!) holes from the battery which weighed roughly the same as the proprietary one which could drill 13... Certainly promising. but it was all very well with it all hooked up to a multimeter not drilling anything critical, but we were putting the best part of 30 % extra power through the drill, which hardly counted as a long term solution.

After messing around with inductors hoping to avoid some current spikes that turned out to be an artefact of the multimeter, we tried sticking a 50 mOhm resistor in the circuit to calm things down a little. Much as it grated to dissipate precious battery power through a resistor, it was clear from the massive gains from the LiPos that we could afford a bit of a loss. Time for another pro set-up.

Pleasingly, this calmed things down quite a lot, to the degree that we we're only putting about 10 % extra power through the drill compared to the proprietary batteries which, given the likely duty cycle of the drill on expo, seemed OK.

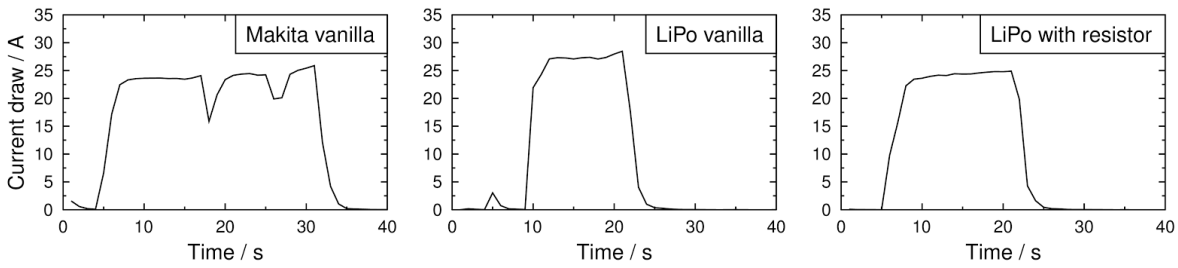


Figure 6 The results of our battery testing

Since we got 30 holes from a battery connected directly, and we lost a steady 30 W through the resistor, we expected to get ~26 out of the new set-up. Not bad given it still weighed no more than a standard Makita battery :-)

Safety was obviously pretty critical for LiPos, and is mainly relevant if either the individual 3.7 V cells aren't balanced when they're charged, or the battery is over-discharged. The former was pretty easily overcome with any sensible charger, but the latter was potentially harder to deal with. Thankfully when the battery was connected directly (ie worst case) the drill stopped drilling at a safe voltage: at the end of the last bolt it was 9 V under load, but it recovered to 12.8 V (3.2 V per cell) after a little rest. No need to protect them :-)

For when we were out there, we bodged connectors to the drills using old Makita batteries and stuck the resistors in them. We then had batteries safely ensconced in tupperware boxes with long cables so they could stay in a tackle sack in use. If the worst case did happen and we did have a "vent with flame" situation, we'd hopefully lose nothing more than a tackle sack and some sphincteral tension.

This was the theory. We were quite tentative to start with, but it worked a treat, despite less than ideal conditions. The temperature was pretty hot outside, which will have resulted in maximum self-discharge, but in use the temperature underground was between 0 and 1 degree, maximising internal resistance. We also encountered an enormous amount of mud down one of the caves which meant that everything, battery connectors included, were totally covered in mud. Despite these conditions we found we were comfortably getting >20 throughbolt holes out of each battery, and we had no issues with battery safety whatsoever. The tupperware boxes did crack, but after wrapping them in rollmat and gaffer tape we had no more problems. Peli cases would obviously make more robust (but more expensive) containers. On a subsequent expedition to China we were placing 10 mm spit-style studs with the same set-up, and although we never actually completely discharged one, an extrapolation looked like we could get the best part of 40(!) bolts out of a battery.

Figure 7 Our final drill set-up

Insurance

All UK-based expedition members took out a policy with Dogtag, who have changed their policy since our trip: expedition caving will be moved to an Extreme Plus category. Dogtag would not provide third party liability for caving-related incidents, but this was covered for BCA members by the BCA insurance policy.

Adam's experiences of a Dogtag claim

See Appendix 4 for details of Adam's accident.

Dogtag do not provide the emergency assistance abroad. This is done through Travel Insurance Facilities Emergency Assistance hotline (EAS). The main lesson learnt this year is that repatriation is not a quick job. Many phone calls were had between the UK and myself in Montenegro as well as phone calls made by family at home to EAS. My experience of the company was poor. Several times return phone calls were promised by EAS but were not delivered. EAS will not organise transport to the airport but will, after some hassle, organise flights home and transport at the other end, despite offering a door to door service. Whilst the staff on the other end of the phone at EAS are friendly, they do not always offer a great service.

It is worth noting for others that the process of repatriation cannot begin until EAS receive a copy of the medical reports from the hospital on the ground either by email or fax. This must then be considered by a Doctor in the UK and a report sent to EAS before any re-booking of flights can begin. In my case this took longer than normal due to a number of factors, the first of which related to the Montenegrin hospital which did not send the required documents to EAS, despite assurances that they had been received by EAS. The process of re-sending and then waiting again is time consuming.

Mobile phones are also an important consideration here. The cost of phone calls home, and receiving them, is high. Battery life is also an important consideration. We were fortunate this year that we had a base camp with power and mobile phone chargers and that we had left a top-up card in the UK to ensure that phone credit was easy to come by. Another unforeseen benefit was that since all of the group were insured on the same policy, EAS were able to contact anyone on the expedition if phones died or were without credit.

All expenditure during the course of rescue, treatment, transport, hotels etc. can only be refunded after returning home. Thankfully the cost of changing the flights was borne directly by EAS. This emphasises the importance of having reserve funds whilst on the expedition.

Despite the shortcomings, EAS did manage to source flights home for me as well as transport from the UK airport. I'm grateful to Mike Rippon (our UK emergency contact) for organising the taxi from Žabljak to Dubrovnik. In future, investigation into what exactly is to be expected from emergency assistance should be considered. If alternative providers are able to be sourced that provide greater levels of cover then they should be considered.

At the time of planning for the 2014 expedition, the main alternative provider used by other UK caving club expeditions was Snowcard. The Snowcard policy covered both third party insurance for caving accidents and personal accident cover in addition to the medical, repatriation and possession cover offered by the Dogtag policy, however it was significantly more expensive. The majority of expedition members either had separate personal accident cover or were reluctant to pay the extra for this benefit. Prior to future expeditions, a more detailed comparison of common constituents of the two policies (and any other new options) would be beneficial to ascertain if Snowcard would be a better choice even if personal accident cover is not required.

Food and Water

The food eaten this year was similar to previous years, with the addition of two new meals to the recipe cards (see Appendix 3 for recipes). Due to increased numbers during the middle week, an additional large pan and pressure cooker were taken to ease cooking logistics. The unforeseen reduction in manpower on the mountain during the first week meant full recipe quantities were not used.

It turns out it is possible to cook pancakes in a mess tin, albeit with mixed success. Avelina informed us that the resulting mess was a German speciality called Kaiserschmarrn.

Figure 8 Pancake a la Eurocrem en mess tin (Cat)

Lower snow levels dictated that we return to YF10 for snow supplies and refrigeration.

Methods for food storage and water purification were the same as those used in 2013.

A watermelon once more made a welcome appearance on the mountain. This time it was an 18.5 kg monster which kept us all going for several days.

Figure 9 Mandy negotiates some watermelon (Cat)

In 2012, not one but two large bottles of an unknown, previously untasted anise-flavoured spirit were purchased and taken up to camp to sup in the evenings. This proved to be nigh on undrinkable, and was thenceforth labelled as “Tasty Tasty Water”, in an effort to lure unsuspecting folk into drinking the foul liquid. Instead, the expeditioners formulated a cunning plan: to one bottle they added copious quantities of orange vitamin powder, to the other wild bilberries and sugar. Although these inspired concoctions were now immeasurably improved, the Tasty Tasty Water wasn’t all consumed in a bingeful evening of merrymaking. Rather, the temperate cavers of 2012 decided to cellar the bottles in the camp dig, for the enjoyment of future expeditions. Having heard rumours of this buried treasure, the 2013 cohort became quite obsessed, spending every spare minute digging through the snow plug to find the hidden hooch. Try as they might, they failed to get their grubby mitts on it. Come 2014, a fine bunch of explorers arrived on Durmitor and found the fabled liqueurs. The Tasty Tasty Water had matured well and was quaffed with gusto, no doubt playing a pivotal role in the high morale and good humour which made this expedition such a success.

Figure 10 The tasty tasty water is discovered

Prospecting

Gologlav

Summary: a lot of bush, no caves! This is Avelina's account:

"Deliberating what to do on our 'day off', we got sucked in to the excitement of frightfully promising google earth satellite images of the Gologlav area, displaying vast craters within the bare limestone that could be seen all the way from space. The other thing that could clearly be seen by aliens, but which we chose to ignore, was the mountain we initially had to climb and, above all, the infinite sea of bunda bushes!

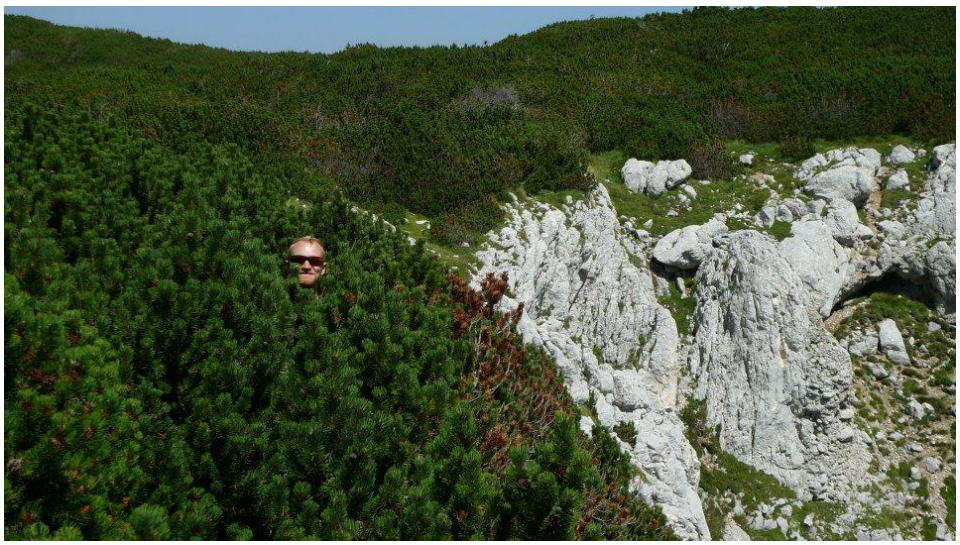


Figure 11 Andy H negotiates the Bunda

"We will be back in a couple of hours", is what we thought. A couple of hours later, we had walked straight past the most promising area of the day (ie not far from camp) and had scaled the mountain. So, that was the hard part done! Or so we thought, unknowingly approaching the toughest challenge yet! Another couple of hours later, and the novelty of fighting our way through bunda had thoroughly worn off! The main path was swamped by these impenetrable hindrances, which left us physically crawling underneath them at times, popping our heads up occasionally to try to find our bearings. A rather surreal moment occurred when we thought the bunda had gone to our heads, as we found two girls amidst this ocean of bunda, waving at us. It turned out that they were in fact real, but even more lost than we were!

The battle was finally won and our prize awaited us. Not one, but many limestone gorges, with nowhere for water to go other than underground, were desperately waiting for man to set foot in them to explore their hidden treasures. We scurried down the steep boulder slopes into the midst of the first. Nothing! No draught, no hole, nothing! Fine, we thought, our luck could only improve, so we went on to find the next. As we approached the brim of the bowl, we yelped in anticipation as we spotted a dark cavity at the bottom of one of the arms of the gorge and clambered to it. There was a snow plug in it, some green slime, but absolutely no draught!

Third time lucky?! After half an hour of searching for signs of caves in the third gorge, I (Avelina) had found one small hole in the side of the rock face with a short drop. As there was not even as much as a wisp of a cool breeze from the hole, it was not pursued. Due to the size of the gorge, I decided to climb out of it where I was rather than walk through the whole of it to find the boulder slope to scramble back up. Halfway up the climb,

having just made a slightly daring move, I was startled with a crunching crash sound, bouncing around underneath me. It was Sandy's camera!

Disheartened by the lack of caves, the prospect of a long fight with lots of bunda and an upset Sandy and guilt ridden Avelina, we started our walk/crawl back to camp.

We of course only tried three of these enormous shake holes, but the rock seemed very shattered, so not very promising. As there are quite a number of other such features, the potential for finding entrances should not be entirely ruled out, but it is certainly not as hopeful as we initially thought. If further exploration takes place in the area, it would definitely be worth considering approaching it from the road leading to the building with a mast which can be seen from the Gologlav area."

Figure 12 Sick holes! Aerial imagery looking south over Gologlav showing the tantalising shakeholes. Source: Google Earth, 2010.

Planinica

The main path from Donja Ališnica towards Skrcko Jezero (via the summit of Planinica at 2330 m) passes a small number of interesting sites which would be considered worth digging in the UK but which compare less favourably with other local sites like the huge open shaft of YF1 or other sites within the YF sector where it is possible to walk directly into open cave passage. The surface landscape in this area is well grassed over and appears well consolidated, though several surface collapse features offer enough interest that a surface site survey to record and inspect these in detail is an exercise worth considering. The higher slopes towards the top of Planinica require navigating through a certain amount of bunda but the top itself offers a good view down and across the western slopes of the Gornja Ališnica amphitheatre. One theoretically diggable surface project in a place above a significant depth of limestone was identified but this looks very long-term and there are probably better ways to use people's limited time in the area. The proximity of this area to a main walking path imposes additional considerations regarding not leaving equipment visible or accessible and ensuring any sites being worked are left in a secure state to prevent any mishap to the many passers by.

Shaft Bashing

Hello Apple

Hello Apple was a promising entrance found in B-Do in 2013 and named after a delightful pseudo apple-flavoured luminous green soft drink which is a local speciality. It had been descended by MTS to the end of a 40 m rope, and again to the same depth a few days later in a futile shaft-bashing debacle. This year it was decided that a greater length of rope would be required. The cave begins with a 10 m vertical shaft which then opens out into a large chamber. A further 15 m drop leads to the peak of a huge snow plug which slopes away in two main directions. Following this to the far side of the chamber, a narrow bergschrund is reached. This can be descended more or less vertically for approximately 20 m until the snow plug appears to meet a rubble floor and there is no obvious way on. It is estimated that Hello Apple is approximately 60 m deep and 25 m long. Six other exciting flavours of 'Hello!' caves remain to be discovered.

Bashing the Whoppa

The Whoppa is a whopping great fissure in the mountain to the south side of B-Do which can be seen for miles around. A preliminary (and very sketchy) investigation in 2013 was unable to establish a way on past the massive snow plug which fills the void. With much reduced snow levels in 2014, a return trip was thought worthwhile. The snow plug was approximately 10 m lower this year, but no less steeply peaked. Once again, all the edges were probed looking for a promising gap, and as luck would have it, a gap was found. However, this led soon enough to a rubble floor, part of an interesting little snow cave grotto. From here, light could be seen coming up through a small gap in the snow wall and a bit of digging revealed a way through to the outside world – a through trip of sorts. There be cave under all that snow, no doubt about it. Definitely one to return to after a bit of global warming.

JVC (YF1)

Cave Description

The Snow Tunnel

After traversing the southern side of the shakehole and descending the eastern end of the snow plug, the start of the snow tunnel was reached. This tunnel was the limit of the 2011 exploration and the enticement to return in 2012, as well as the point we failed to get to in 2013 due to the high snow levels! This year, with very low snow levels, the entrance to the tunnel was perched in the side of the snow plug, 2 m from the wall of the shakehole and 3 m above a rubble ledge. The tunnel descended steeply for around 25 metres, similar to how it looked in 2012, at the end of which daylight could be seen from another gap in the snow plug. The snow here was studded with rocks, some fairly large, which were released as the snow melted. This process could be observed over the course of the expedition but thankfully only occurred between trips, not during them. Some of our original spits were visible and could be re-used, but others were either out of reach or buried behind snow. We then descended an awkward drop over an ice lip onto a snow ledge of sorts, followed by two almost-vertical pitches between rock and snow. The end of the second pitch emerged in the impressive chamber discovered in 2012, this year dubbed the 'Tip of the Iceberg'.

Figure 13 Sarah at the entrance to the Snow Tunnel (Martin)

Tip of the Iceberg

The snow at this point coned out into the chamber, sloping away steeply to the right and left, and there were large ice stalactites hanging from the roof of the chamber. The rope was rigged to the opposite wall on the crest of the snow, then down and over the lip to the left. A series of short pitches followed the crease between rock and ice, before a traverse through a window in the snow directly under the chamber above. Here, there was a dawning realisation of the true nature of the snow plug on which we had just descended. A huge arching ceiling of snow stretched away above, supported by nothing. It really was just like an iceberg, floating there in space, with us descending below it.

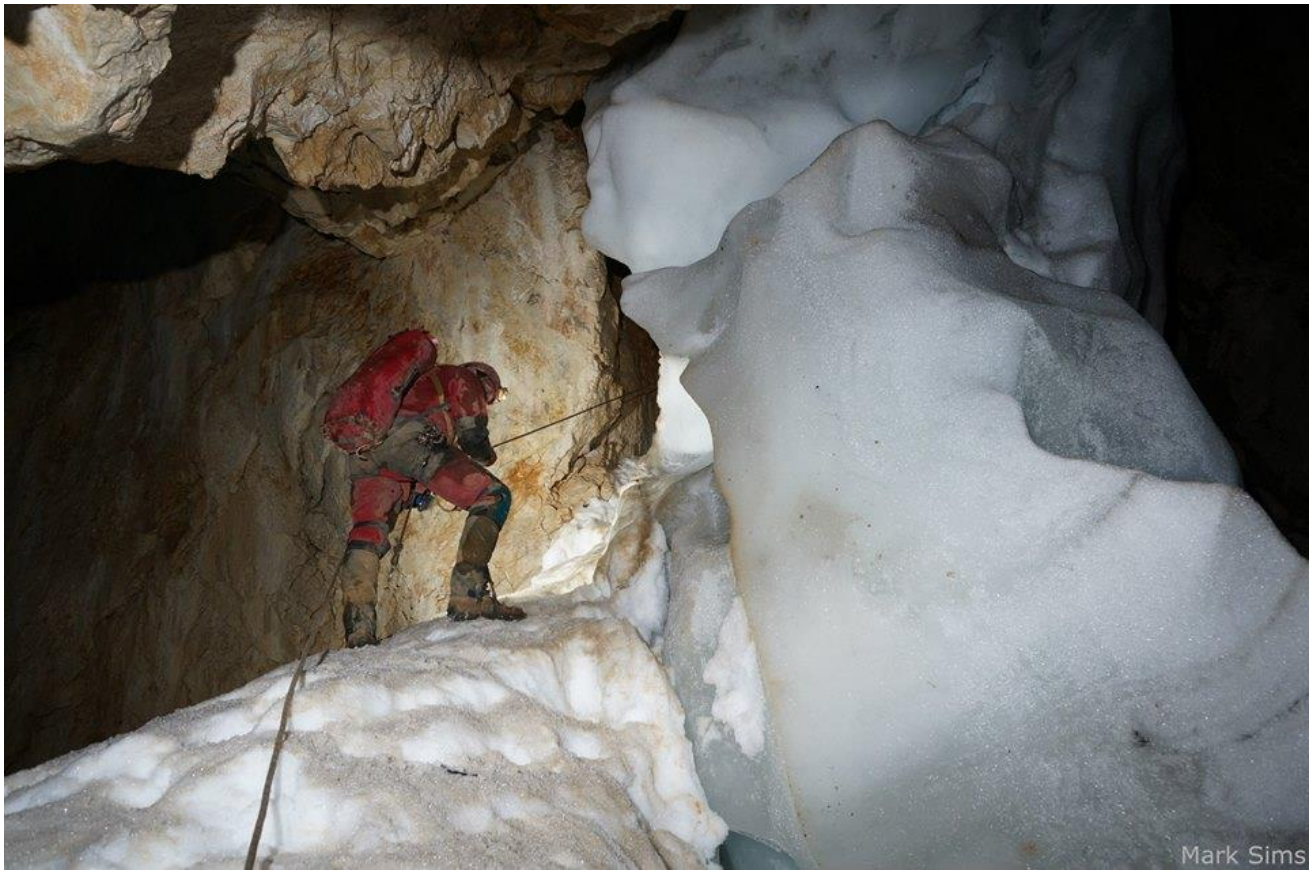


Figure 14 Andy V descends to the Tip of the Iceberg (Mark)

The Real Frozen Deep

From the window, a 10 m drop through the snow plug landed on the top of another icy snow slope, which fell away into a void. As this was descended, the overhanging iceberg was left behind and a lofty chamber was entered. We named this void the *Real* Frozen Deep. The icy slope was first traversed to a rebelay on the left hand wall, then descended all the way to the far end of the chamber. Here, the wall was covered with ice formations, and the water dripping from these had created dimpled cups of ice in the snow beneath, resembling an ice cube tray. From here a slope led down to the left between snow and rock towards a large hole in the snow floor.

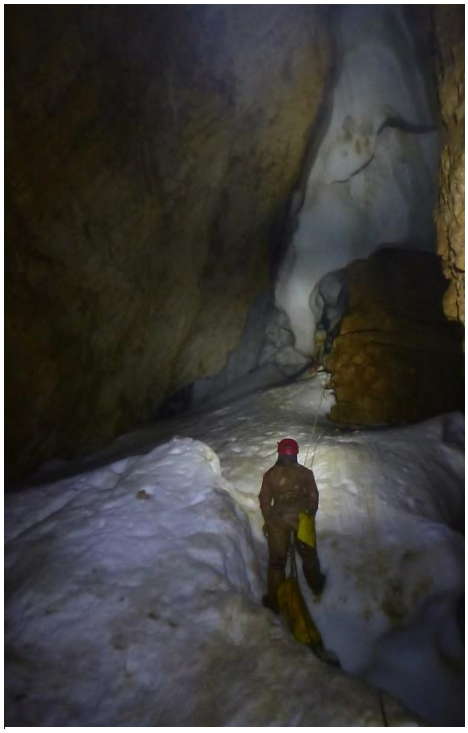


Figure 15 Looking up The Real Frozen Deep torwards the Tip of the Iceberg (Cat)

Figure 16 Looking down The Real Frozen Deep (Mark)

Moulin Blanc

As the snow hole was approached, it was revealed to be the top of a large vertical shaft of ice, approximately 4 m in diameter and 20 m deep. It was quite an unusual experience to be in a part of the cave completely surrounded by ice, with none of the walls made of rock. The shaft was fluted in cross-section like many classic limestone pots, and was either carved in the same manner by falling water, or by a draught, or a combination of the two. Thankfully for us, the falling water consisted of drips rather than a torrent. The near-side walls were smooth compacted snow or firn and the far side was covered in awesome ice sculptures. At the bottom, a small area of exposed rock enabled a spit placement for a rebelay and a further short drop to a solid floor.

Figure 17 Andy V at the head of Moulin Blanc (Mark)

Tectonic Chamber and beyond

Here, for the first time, we left the snow behind. The snow-covered floor gave way to a huge boulder slope beneath a slanting roof. The roof, though broadly flat, has cracks, faults and evidence of tectonic activity. This was even more apparent in the walls, whose layers were ruckled into dramatic folds, reminiscent of those seen on a much larger scale in the mountains above ground. As the boulder slope was descended away from the snow, there was a slight but perceptible increase in temperature. Towards the bottom of the slope, the roof came down to meet the boulders and an improbably small gap was entered into a crawl.

Figure 18 Lieke in Tectonic Chamber (Martin)

Shortly after the low crawl there was a junction with a large passage heading off the right. The area around the junction was nicely decorated with popcorn-covered stalactites. A few metres into the adjoining passage, we discovered a layer of mud sediment with some well-preserved footprints in it, appearing to be from some small mammal. After a small breakdown chamber, the passage entered a narrow rift, which opened up into a clean-washed inlet passage with a small stream. A few metres further on, the passage reached the foot of a tall waterfall which was not free-climbable.

Figure 19 Lieke admires the popcorn stal (Martin)

Back at the junction with the popcorn stals, the way on was to the left. The passage soon led to a narrow meandering section which continued for a short way, with the occasional hole in the false ceiling of the rift giving an indication of what was to come. The meander ended at a large boulder and a short climb up into much larger passage. A blind pit on the left was descended to around 15 m but no way on could be found.

Back in the main passage, a short traverse between a false floor and some large chocked boulders popped out at the head of a large shaft.

Inferno Shaft

Inferno Shaft initially descended trending towards the left, like part of a corkscrew. The near wall featured a walled ledge dubbed the Pulpit, with razor sharp edges reminiscent of Yorkshire limestone. When reaching the bottom of the impressively largeshaft, there was an aven to the left, and a rift to the right. On one of the later pushing trips, the brew stop was moved to the bottom of the shaft. The shaft was named due to a slight mishap with the camping stove which led to its ultimate destruction (use your imagination combined with Figure 21!).

Figure 20 Mark abseiling at the top of Inferno Shaft (Martin)

Figure 21 The evidence of the incident that gave Inferno Shaft its name (Martin)

Camping Gaz Series (Waterless Cascade, Hedgehog Grotto)

This section was named after another (previous) stove mishap at the brew stop, resulting in a large amount of gas making its way a long way into the following passageway...

At the base of Inferno Shaft another inlet came in from an aven on the left; this was climbed by Walmslers but immediately closed down. The way on was through a tall but narrow rift.

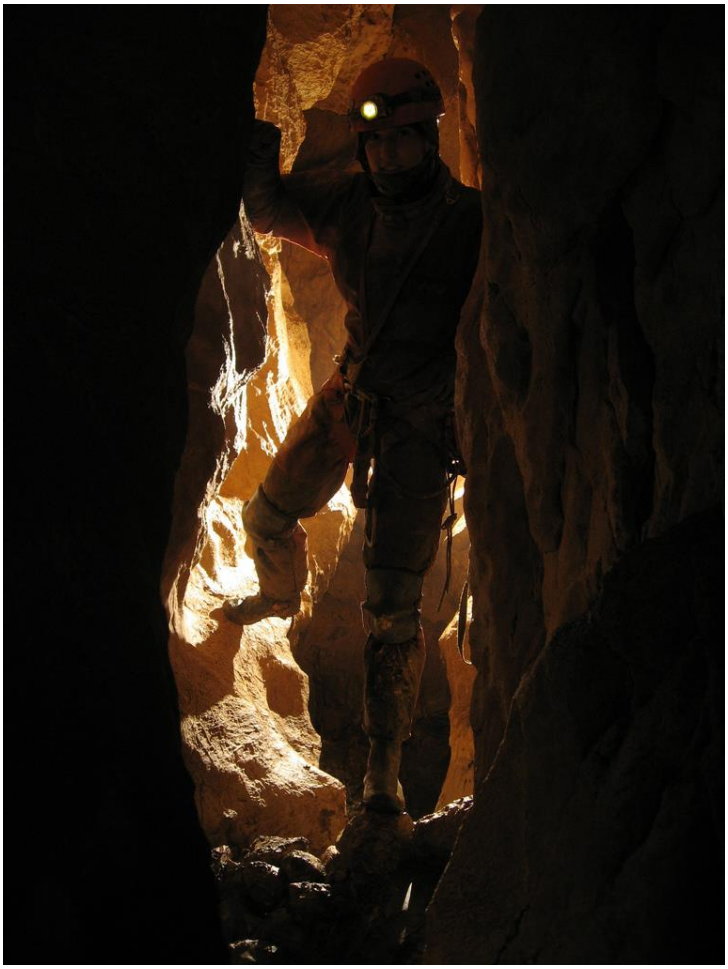


Figure 22 Lieke in the rift below Inferno Shaft (Martin)

As described by Toby and Vicky at the time:

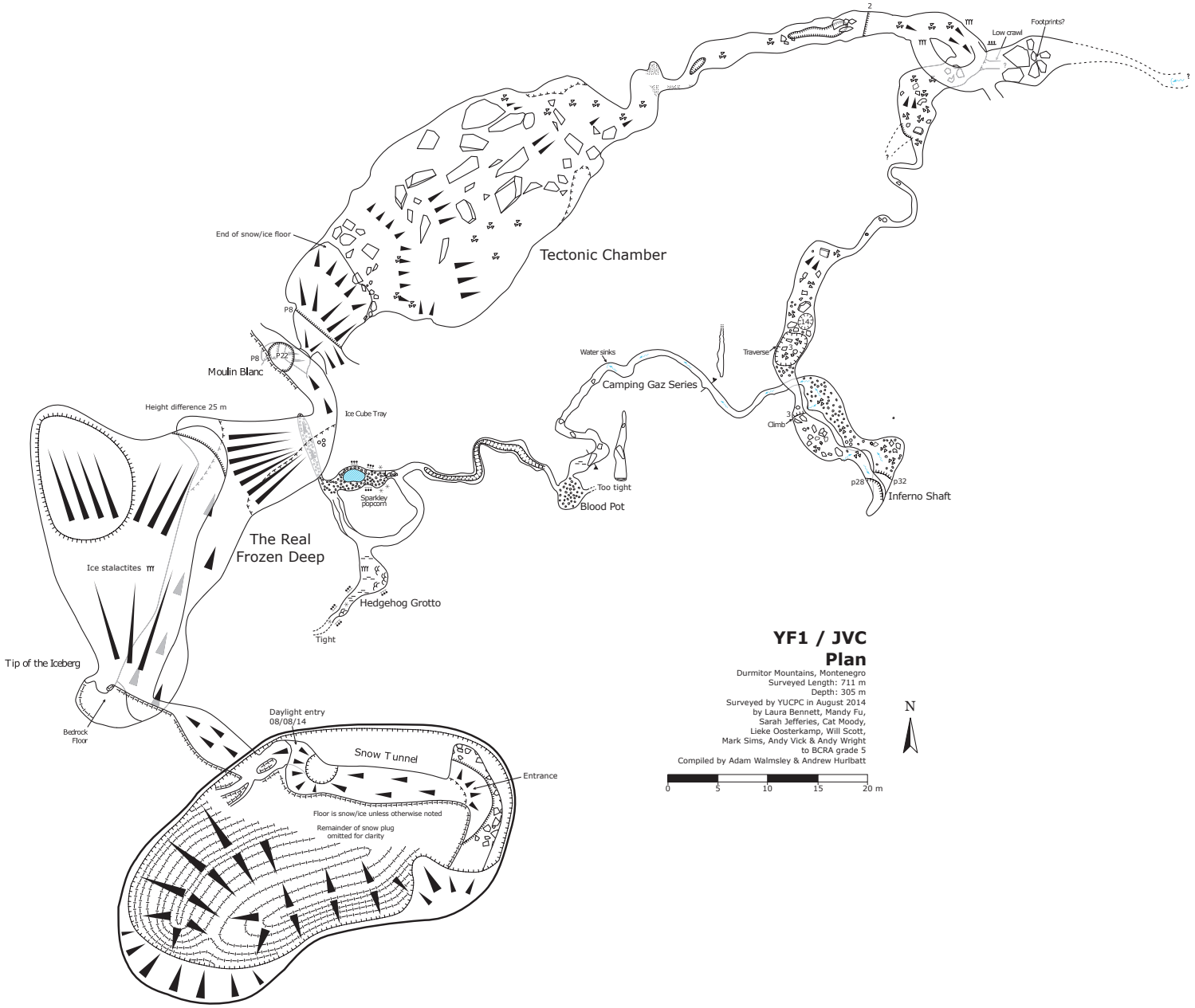
"Starting in the waterless aven, we explored the rift to the right. The way on became too tight at stream level but climbing up ~2 m progress could be made. When the rift became wider we could see down the rift to a large dark hole. Descending to the bottom (~6 m?), we found a small chamber with impassable choked rifty passage each way. The chamber is probably just a big widening of the rift. Continuing along the rift at a higher level, we reached a thin crack showing further passage. This could be reached by climbing down the rift and pushing through a squeeze beneath (the way leading left at this level merely overlooks the first chamber). Once past the squeeze, we reached a crumbly aven with walls apparently made entirely of popcorn! We descended ~2 m to a small pool. The way on to the right is a choked passage. To the left we found a narrow rift which we climbed up ~2 m and reached a junction. To the right we found a small calcite passage ending in a section of passage encrusted with formations – popcorn, small stalactites and so many crystals it was as if the floor was covered in hedgehogs! Unfortunately the passage became very narrow here and could only have been squeezed into by breaking stals. Left at the junction was a passage which emerged overlooking the aven. At this level we could see, away from the aven (i.e. far right on the plan) a large mouth-like opening. However, by throwing rocks through it we realised this was just a feature of the ceiling just over the junction which follows the aven."

An alternative route was found on a later pushing trip by climbing up before the pitches and traversing through the roof-level phreas to access the final chambers, but still no way on could be found.

Last Chance Saloon

Around half way down Inferno Shaft, the far wall disappeared enticingly out of site. Mark and Andy V had a spare day near the end of the trip, and chose to bolt across the shaft to see what secrets were hidden around the corner. After some fairly exposed bolting, the sad realisation was that the rift into which the opposite walls headed immediately got too tight.

Figure 23 Andy V on his way along Last Chance Saloon (Mark)


2
Footprints?
Low crawl
End of snow/ice floor
Tectonic Chamber
P8
P8
P22
Moulin Blanc
Height difference 25 m
Ice Cube Tray
Water sinks
Traverse
Camping Gaz Series
Climb
Too tight
Blood Pot
Sparkley popcorn
p28
p32
Inferno Shaft
The Real Frozen Deep
Ice stalactites
Hedgehog Grotto
Tight
Tip of the Iceberg
Bedrock Floor
Daylight entry 08/08/14
Snow Tunnel
Entrance
Floor is snow/ice unless otherwise noted
Remainder of snow plug omitted for clarity
YF1 / JVC
Plan
Durmitor Mountains, Montenegro
Surveyed Length: 711 m
Depth: 305 m
Surveyed by YUCPC in August 2014
by Laura Bennett, Mandy Fu,
Sarah Jefferies, Cat Moody,
Lieke Oosterkamp, Will Scott,
Mark Sims, Andy Vick & Andy Wright
to BCRA grade 5
Compiled by Adam Walmsley & Andrew Hurlbatt
N
0
5
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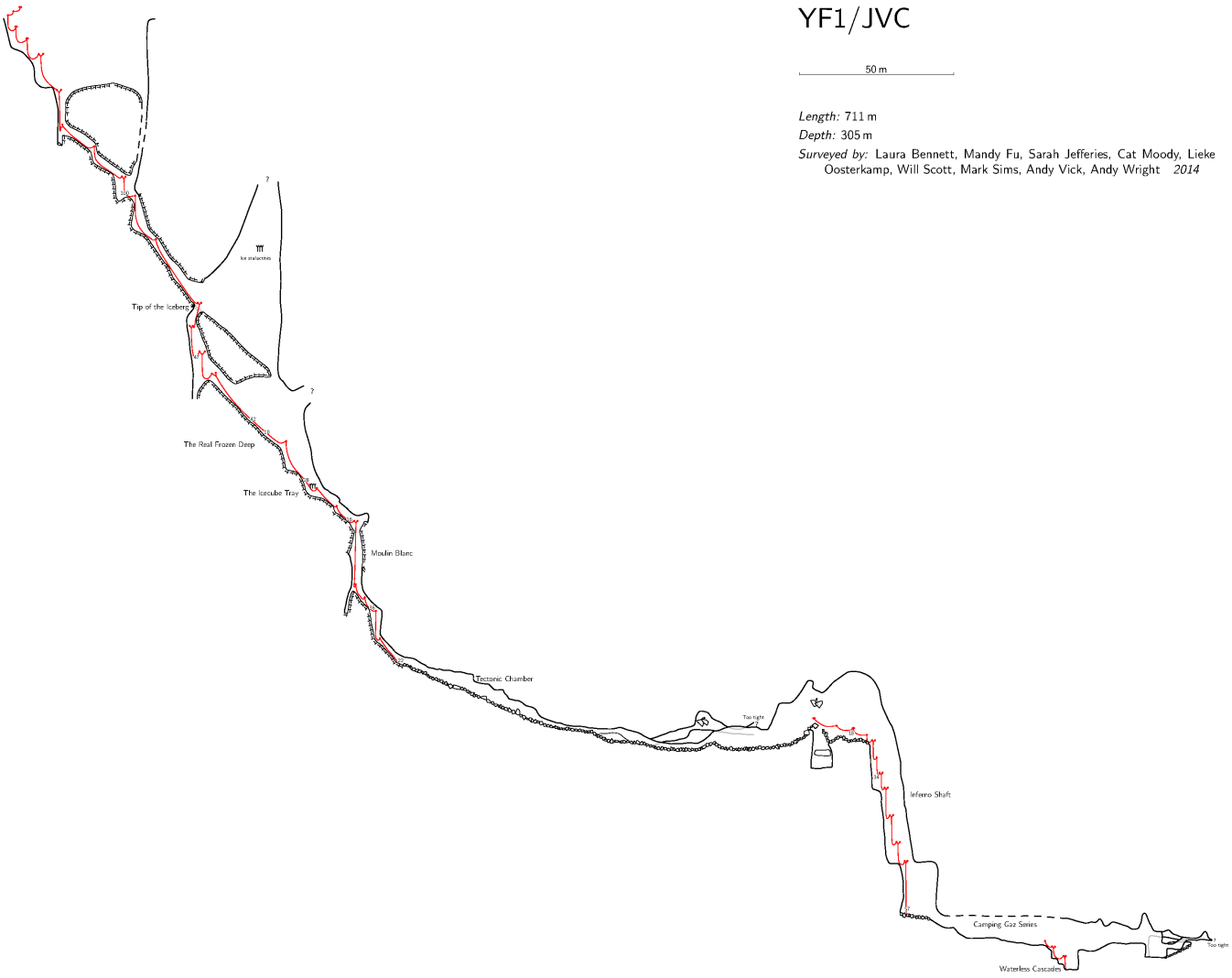
20 m

YF1/JVC


50 m
Length: 711 m
Depth: 305 m
Surveyed by: Laura Bennett, Mandy Fu, Sarah Jefferies, Cat Moody, Lieke Oosterkamp, Will Scott, Mark Sims, Andy Vick, Andy Wright 2014
?
ice stalactites
Tip of the Iceberg
The Real Frozen Deep
The Icecube Tray
Moulin Blanc
Tectonic Chamber
Twilight
Inferno Shaft
Camping Gaz Series
Gaz light
Waterless Cascades

Bunda Jama

Cave description

Entrance to the Van

For a description of the first half of Bunda Jama, down to the huge boulder now called 'The Van', see the 2013 report. This year we did find time to get some photos of this section of the cave, which are shown here.

Figure 24 Mark descending the entrance pitch (Martin)

Figure 25 Looking down The Expressway (Martin)

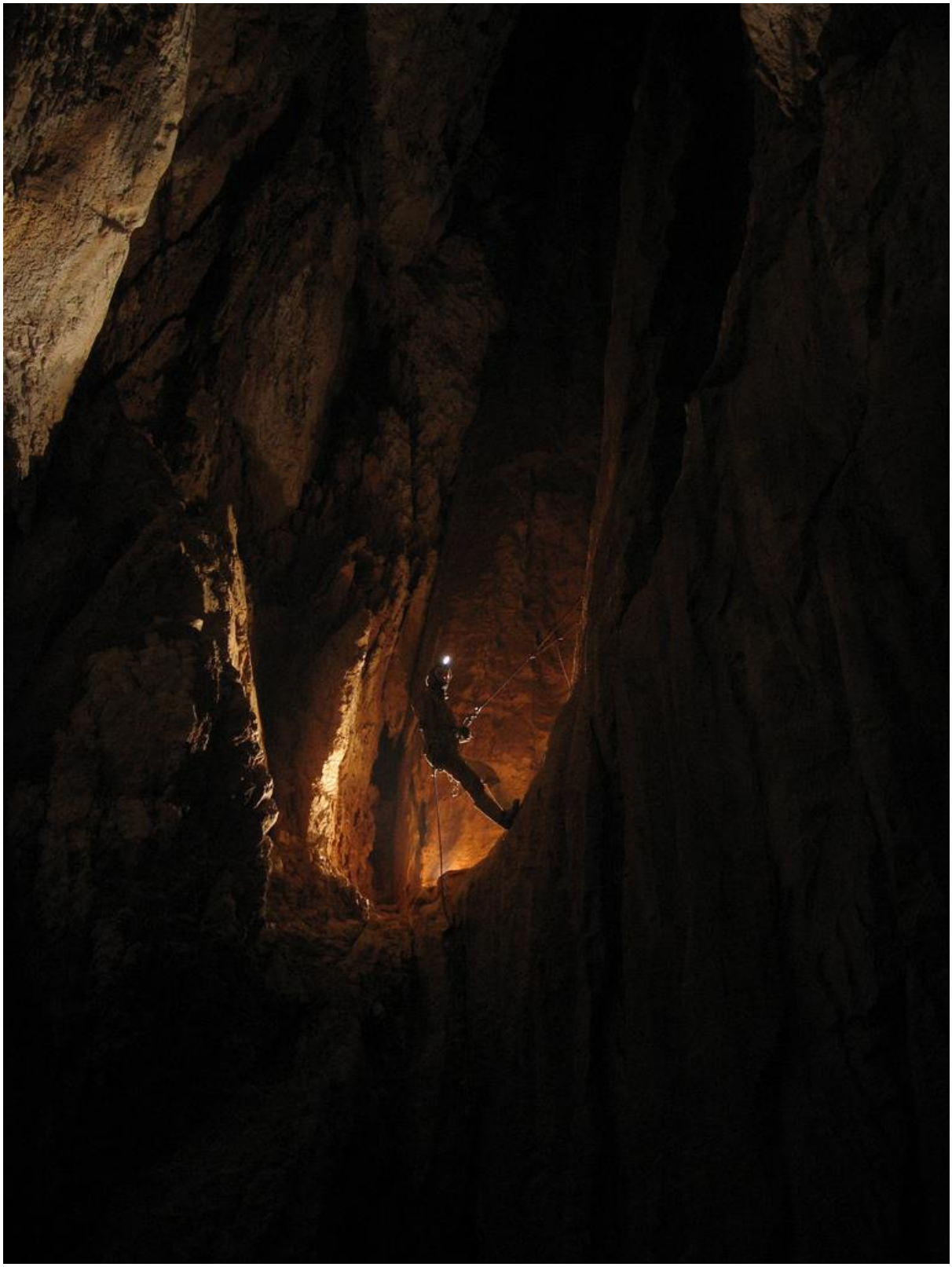


Figure 26 The final drop of The Expressway (Martin)

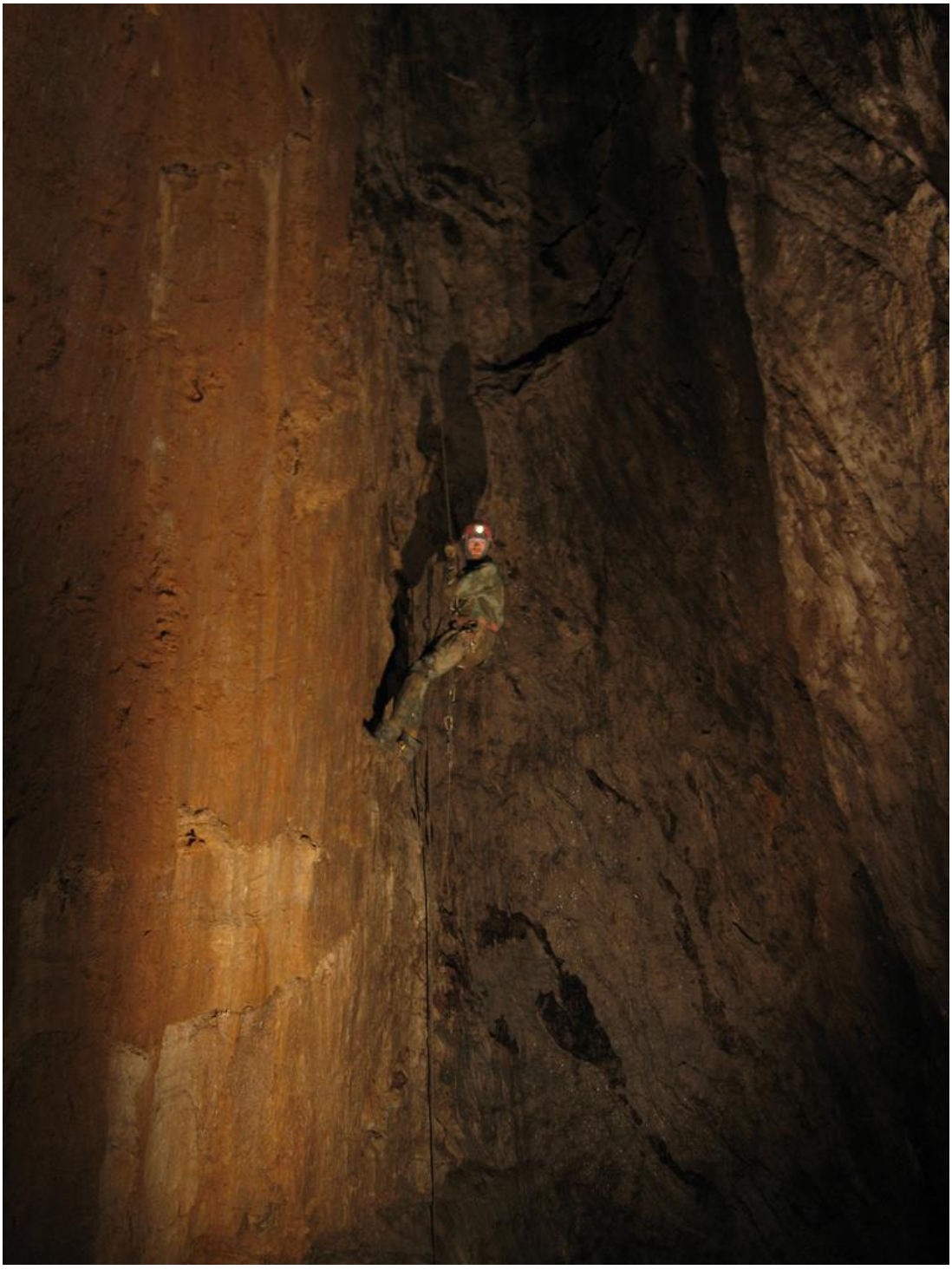


Figure 27 Andy H descending Jungle is Massive (Martin)

Figure 28 Looking down the gully in Château de la Shock (Martin)

Resonance Rift

From The Van there were three potential routes on. One of these was up an easy climb to the left and led off along a ledge in the top of a roomy rift passage. The second was straight ahead up an exposed calcite climb leading to a steep incline which would have needed bolting to climb. The third route was to the right, down the wide open rift. This was the route chosen and we rigged a pitch straight down. There was an abundance of choss in this rift, making it quite hazardous for anyone below another caver. After the first two pitches, we rigged under a massive chock-stone (the Bomb Shelter) which gave much-needed protection from any falling rocks. Another two pitches followed, reaching a ledge with a false floor of chocked rubble. Here there was a noticeable humming produced by the sound of flowing water resonating through the rift. A traverse line was rigged along the ledge for around 15 m before dropping a further two pitches to the bottom of the canyon and meeting the stream for the first time.

Figure 29 Looking down at Will on The Van (Mark)

Figure 30 Andy V descending Resonance Rift below the Van (left) and progressing along the horizontal section of the rift (right) (Mark)

The Eyehole

At the bottom of Resonance Rift, a small stream entered from the far end of the chamber and stared to wind down a small canyon. This was followed for a few metres before the way on at stream level became too tight and the obvious way on was to follow the rock ledges upwards. This route quickly gained height and reached the roof of the passage, which had several white stalactites. After about twenty metres of traversing at this level, the passage met another inlet passage joining from the left. Continuing downstream, the rock strata suddenly became downdip and the roof lowered, forcing us back to stream level. At this point, a most peculiar feature for this cave was encountered - a short, flat out crawl through an eyehole-shaped passage. Immediately after this, the rift opened up again, the stream disappeared downwards and the way on was upwards.

Figure 31 Andy V below the climb down to The Eyehole (Mark)

Figure 32 Andy V in The Eyehole (Mark)

Post-Bothy-Shame and Déjà Vu All Over Again

The natural continuation was at, or close to, roof level and soon led into a section of nice formations. Here there was a distinctive left-hand bend in the rift and we were forced to climb down a short way. The rift then

widened and opened up to the stream far below. A series of pitches were rigged at this point, chasing the streamway down the rift and eventually catching up with it at the bottom. For reasons known only to WGS, these pitches were named 'Post-Bothy Shame'. Having finally found our way back to stream level, we were hopeful that the cave would allow us to follow the stream from this point, but Bunda Jama had other ideas. In a pattern that was becoming all too familiar, the water wound its way down a too-tight rift, while we were forced upwards once again: Déjà Vu All Over Again.

Pure Lube

The passage following Déjà Vu All Over Again deteriorated to a small and increasingly crumbly passage in the roof of a rift. After a while this enlarged and the rift below opened up enough to see a fair way down. Stones dropped here could be heard to land in a pool of water. At this point a pitch was dropped through a narrow section of rift which then quickly opened up into a large and impressive space. At the second re-belay, about halfway down, the walls of the cave became slathered in a thick coating of fine, wet, silty mud, of similar consistency and colour to Šlag Krema čokolada, a good-value dessert available in Žabljak reminiscent of Angel Delight. This mud was incredibly slippery and it daubed itself all over our rope and kit, lubricating our descent and any attempted purchase on the cave wall. After 2 more widely offset rebelays, the pitch reached the floor of the rift where we once again joined the stream. Predictably, the water didn't stay around for long and we continued on through a rift traverse, the walls of which had a particularly thick layer of mud lube. A rope was placed at the start of this, but the route soon drops down to the floor of the rift, which we dubbed 'Cheap Chocolate Šlag'. Thankfully, this section continued for only 20 m before opening out in a roomy chamber with water pouring in from every orifice.

Yorkshire Gold

The spray-lashed chamber had three other passages leading from it. A narrow passage up on the left quickly got too tight but probably looped back to the main passage below. A stream inlet joined from the right, which was almost certainly the same stream we'd been following. The obvious way on was to follow the water down a 10 m cascade. The water then passed through a short winding rift before spouting over another 8 m pitch (Blunder Pot) and sinking into a slot at the base. This watery section was very reminiscent of a Yorkshire Dales streamway cave. The water here disappeared out of sight but the passage continued, quickly diminishing to a small phreatic arch through to a constricted pitch head. This section was once again coated in copious quantities of gloop, but past the constriction, the pitch opened up into a fine vertical pot with smooth, clean-washed walls. The 20 m pitch landed in a dry, roomy chamber with a rubble floor. The quietness here was noticeable, as the noise of the stream has completely vanished.

The Minster and the Blue Lagoon

After a short, left bending passage, another pitch was reached. The head of this was similar to the previous pitch, being a fairly constricted traverse daubed with a thick layer of wet mud. An incident here involving MTS, AJV and a large glob of this mud led to the pitch being christened 'The Long Drop'. The pitch quickly opened out into a very large space and lands on a big ledge above a huge cross rift. We named this The Minster, a cavernous space where neither the roof, nor the floor of the rift could be seen, though crashing water could be heard from below. From the ledge, we bolted across to a point in the rift where the walls came within about a metre of each other, and dropped down a further 30 m to the foot of a waterfall. The volume of water here was considerably larger than that in the stream disappearing at Blunder Pot. The waterfall landed on a sloping ledge of loose boulders perched above another yet another pitch falling away into blackness.

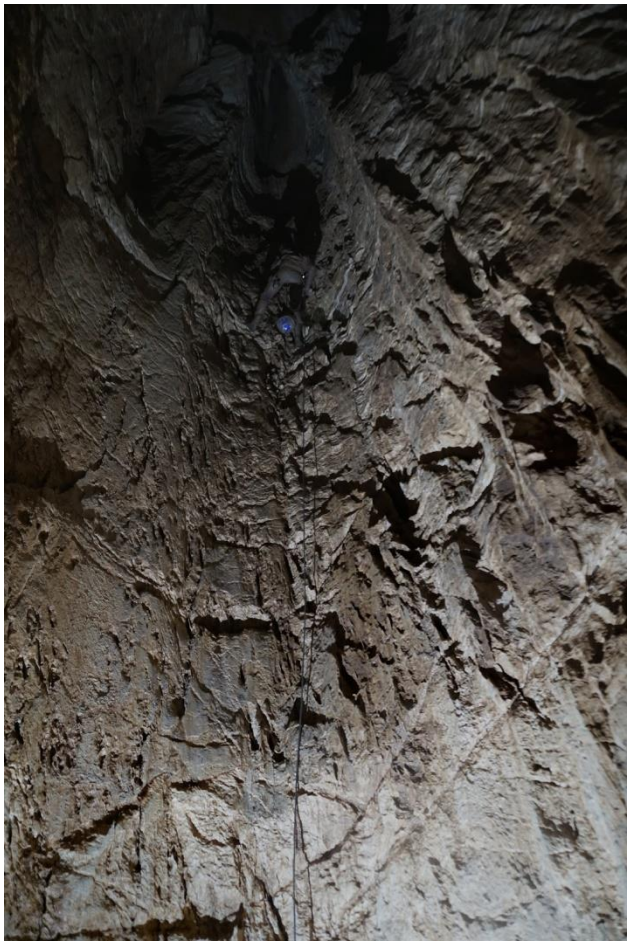


Figure 33 Andy V descends the Long Drop (Mark)

The bottom section of cave was described by Mark in the logbook entry after AJV and MTS's final pushing trip:

"We were feeling pretty eager on our way to what we knew would be the last push this year, but as always with these longer trips we didn't know what to expect, since the preceding team (Mandy & Walmslers) were still underground. We optimistically took 15 bolts & assumed the battery down there would be sufficient.

On the sunny walk over we bumped into a sleepy looking Mandy & Walmslers who eagerly told us we'd need all our rope because it had suddenly got big again - JIM scale proportions according to Walmslers. Excitement levels were high!

The descent was now seeming all too familiar, but we were a little concerned by Andy's arm that was giving him a fair bit of pain, but he seemed to be coping OK. I decided not to mention it in the hope he may forget it. After stopping for a fair few photos on the way down we were soon into unknown territory as we reached Déjà Vu All Over Again. We were quite impressed with all the subsequent cave that had been discovered and it was certainly starting to feel a bit further from home.

Pure Lube lived up to its name. I'm not sure I've ever known 10.5 mm rope to be quicker. After the mud traverse it was great to see the clean washed Dales-style section that Sandy & Cat had explored.

At the subsequent pitch head Andy headed down and as I traversed towards the Y-hang the sizeable mud bank on my left shifted towards the pitch head. There was no stopping this... "Andy! Can you get out of the way?" I shouted down. "Erm... I can try..." came the reply. Splat. The first of the mud hit the wall of the shaft about 10 m down, swiftly followed by a shout from Andy saying it had ended up all over his glasses. "Sorry, There's quite a bit more where that came from" I shouted down. The rest of the mud bank subsequently followed, apparently causing havoc below and the pitch clearly had a name. Drama over and we abseiled down the final

pitch that Walmslers & Mandy had rigged on the 8 mm that was frankly slower than the 10.5 mm further up. They hadn't lied - it really did get big again.

The water had returned and there was quite a lot of spray around as we stood on a 10 - 15 m wide ledge with the walls disappearing off into the darkness above, ahead and below us. What a privilege. We excitedly pulled the drill out and set about deciding the best route down. A few bolts later and we'd got to the end of the 8 mm rope at a ledge another 8 or so metres down, our lights struggling to pick out the walls, ceiling or floor ahead of us. After a rope change I swapped with Andy and set about attempting to get a picture that would give some idea of the scale of the place.

Figure 34 Andy V bolting the final pitch of Bunda Jama in The Minster (Mark)

Before long both Andy and I had finished our tasks and we could drop the 20ish metres to the descending boulder floor below. We were more than a little surprised to see that this pitch was actually just formed by an enormous (house-sized) chockstone wedged across the rift. It was a lot wetter here, with several inlets coming in from the blackness above, so we pressed on downwards over the boulders.

In hindsight, I don't know what i was expecting to find around the corner, but it wasn't the long deep blue pool that awaited us. Our first sump, both for me and Andy individually, and for YUCPC, in Durmitor. But not as

we'd ever envisaged. The only sump any of us had seen in Durmitor was the gravelly termination of JVB, but this one was about 3 m wide, 10 m long, crystal clear and seemed to be of quite a significant depth too. Most intriguingly at the time was the pile of boulders ahead of us with a bend in the open passage beyond. It appeared our silly traverse bolting in YF1 was going to come in handy as a practice for this.

Knowing there wasn't loads of gear left we counted our hangers; 7 plus the obvious thread looked like it ought to be just enough to reach the boulders. Fingers crossed there was still enough juice in the battery. We did a few bolts each, paranoid about dropping any of our gear into the inky water below, and before long I was reaching at full stretch for the final bolt that would let us drop into shallow water at the base of the boulders. I'm not sure what we'd have done without Mandy's skyhook.

Once we reached the boulders it was clear this was where we'd be stopping for 2014, and maybe as far as Bunda Jama would ever be explored. The disto told us that the sump extended another 15 m beyond us before the roof looked to come down close to the surface water.

Strangely, I didn't feel as disappointed as I thought I would. Despite the apparent conclusion of Bunda Jama, the YUCPC expedition to Durmitor could now be considered a real success, having found, explored and surveyed Bunda Jama to a depth of over 600 m, we believe making it the second deepest cave in Durmitor, the fourth deepest cave in Montenegro and the deepest YUCPC find since the expeditions to the Picos in the '80s. And let's not write Bunda Jama off quite yet: the disto only gave errors when we tried to measure the height of the final chamber, and it's certainly still a breezy place. On top of that, the sump is probably one of the more inviting ones I've ever seen, so perhaps if we can persuade a diver to have a paddle around the story may yet continue.”

Figure 35 Andy V bolting the traverse over The Blue Lagoon (Mark)

The Doyle Dig

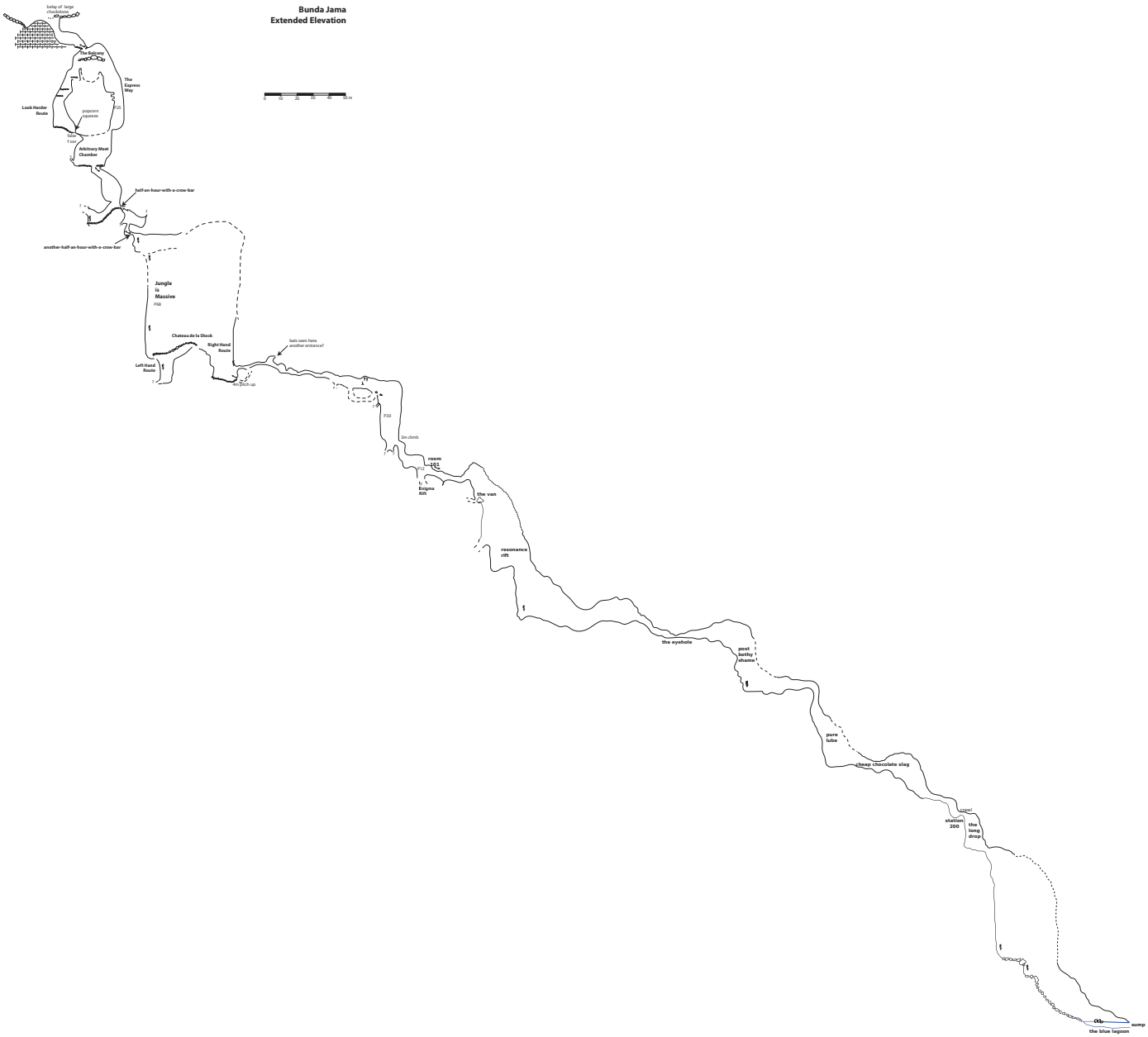
In 2013, a side passage was found in the high rift between Château de la Shock and the 30 m shaft. This contained the only speleothings found in the cave up to the 2013 limit. Beyond the pretties, the passage shrunk to a descending tube and became too tight, though it was thought to have digging potential. Come the 2014 expedition, this passage attracted the attention of a certain Doyle Scott, Esq. (WGS), instantly earning itself the name 'Doyle Dig'.

Figure 36 Andy H admires the formations in the passage just before The Doyle Dig (Martin)

One day, when there wasn't much doing, WGS and AJW decided to go and give it a bit of a diggywig. On the way they checked out the so called Bat Inlet, which was rather more vertical and exposed than had been reported. No progress was made. They moved on to the main event. In the Doyle Dig, there was only really space for one body so WGS went first. The main obstacle was a small column of muddy calcite in a narrow constriction. The floor about the digging area was littered with hundreds of tiny bones which seemed to belong to some sort of rodent. As predicted in the 2013 expo report, this dig did actually take about half an hour with a crowbar, after which they were able to squeeze through the gap. Beyond was a short section of larger passage followed by another small descending clay-floored tube which became too tight to pass. At that point the dig was abandoned for the day. Some days later during a pushing/surveying trip, MF was able to pass this second constriction only to find more tight passage requiring digging. The Doyle Dig isn't giving up easily, but she's still going and awaits future intrepid explorers to probe her depths.

"Bunda Jama is not a rabbit; it will not run away"
- Voja, 17th August 2014


Bunda Jama
Plan
Durmitor Mountains, Montenegro
Surveyed Length: 1433 m
Depth: 622 m
Surveyed by YUCPC in August 2013 and 2014
by Laura Bennett, Mandy Fu,
Catherine Moody, Joanna Burden,
Mark Sims, Andrew Vick,
Jonathan Booth, Toby Buxton,
Andrew Wright, Will Scott,
Vicky Bailey & Chuck Holder
to BCRA grade 5
Compiled by Mandy Fu
N
0 5 10 15 20 m
water disappears down narrow rift
Yorkshire Gold
cascades
P10
P8
Blunder Pot
waterfall inlet
small phreatic window to dry pitch-head
tall aven?
P20
The Long Drop
rocky ledge
P30
P11
muddy traverse
Cheap Chocolate Slag
The Cake
P25
waterfall
The Minster
P11
P9
inlet from above
station 233
chocked boulders
The Blue Lagoon
roof descends to water level
?
Pure Lube
P50
Deja Vu All Over Again
higher route rejoins pitchhead
traverse along rift under boulders
high traverse above stream
P42
Post-Bothy Shame
flowstone
Cold Hard Smash
the eyehole
c3
flowstone
waterfall inlet
flowstone & calcite crystals
Resonance Rift
(pitches 80 m)
cascades
deep rift
climb ?
The Van
P19
2 m pitch over small hole
complex rift passages connects to pitch beyond
Enigma Rift
06/08/2013
Room 101
2013 limit of exploration
286 m depth
P12
rift
too tight
high level continuation
P30
Doyle Dig
guano
small chamber of choss
2m climb up
bats seen here
possible entrance?
fixed rope pitch up 4m
06/08/2013
+60
rift
Right Hand Route
Left Hand Route
too tight
continues narrow
Jungle is Massive
P68
Chateau de la Shock
belay from chockstone
entrance pitch
1.5 m climb
inlet
06/08/2013
The Balcony
Look Harder Route
The Express Way
P25
half-an-hour-with-a-crow-bar
another-half-an-hour-with-a-crow-bar
06/08/2013
06/08/2013
rift continues
popcorn squeeze
Arbitrary Meet Chamber


Bunda Jama
Extended Elevation
0 10 20 30 40 50 m
belay of large chockstone
The Balcony
The Express Way
Look Harder Route
popcorn squeeze
P20
false floor
Arbitrary Meet Chamber
half-an-hour-with-a-crow-bar
another-half-an-hour-with-a-crow-bar
Jungle is Massive
P30
Chateau de la Shock
Right Hand Route
Left Hand Route
bats seen here, another entrance?
ex-block up
P30
3m climb
room 101
P12
Enigma Rift
the van
resonance rift
the eyehole
post bathy shame
pure lube
cheap chocolate slag
crawl
station 200
the long drop
sump
the blue lagoon

Braon Prst Jama

A brief trip was made to Braon Prst Jama. The entrance was rigged with the use of naturals; however, beyond that any previous anchor points could not be found and spits had to be installed to proceed, possibly due to lower snow levels this year.

From the entrance shakehole was a drop into a small but largely snow-filled chamber; on the far side a narrow window led to a 3 m pitch (rigged on spits) into a further snowy chamber. A clamber around the snow heading in the same direction led to a squeeze over the snow to a 6 m pitch rigged off a sling over a small flake of rock on the right hand wall. This pitch landed on a snow mound with a snow column in the middle of the chamber. Rigging from spits on the far wall the snow mound was traversed in the reverse direction, around the column, and headed off down a round passage through the snow with blackness beyond…

Walmslers' Durmitor Ridge Guide

Brief Descriptions of Three Excellent Ridge Walks Starting from Camp in Gornja Ališnica

Bezimeni Vrh

A spectacular ridge and stunning views from the top. Bezimeni Vrh means 'nameless peak', but is best left untranslated. From camp walk west to the col on the ridge, then turn left and continue along the ridge. Several parts of this ridge look impassable from a distance but are generally fine. Take care – some areas are very loose. Pride Rock is a nice little detour to the west of the ridge, and the Rock Bridge of Death makes a fun challenge, not for the faint-hearted. Pick up the way-marked path leading down from the summit, then pop over the col 'Struga' to take you back to camp. Alternatively, traverse the scree slope beneath the summit and continue up the ridge, following an old way-marked route to the summit of Bobotov Kuk, the highest peak in Durmitor.

Rbatina

An imposing vertical limestone cliff – the most striking feature seen from camp, to the left of Bobotov Kuk. The best way of walking this ridge is from the 'Struga' – the col between Rbatina and Bezemini Vrh. From here it is easy walking/scrambling all the way along the ridge, which is a sharp vertical drop to the left and a steeply sloping limestone slab to the right. Look out for Alpine choughs and wallcreepers. At the end of the ridge is an impassible vertical cliff. Here, either return via the route you came or backtrack part-way along the ridge and bypass the cliff on the grassy slopes to the south. From the foot of the cliff, continue along the ridge, up to a viewpoint overlooking both Gornja Ališnica and Korita. Turn north and return to camp via the grassy crest leading to the K-Do path.

Obla Glava

This iconic 'Round Head' peak towering over Korita is at the end of a fine ridge walk with some sporting moments. Start this walk from the 'secret' K-Do path and head south up the steep grassy slope towards Rbatina. When you meet the adjoining ridge, turn left and continue along this course, hitting several mini-peaks along the way towards Obla Glava. The main feature of this route is a steep, loose climb down which is a fairly serious undertaking. A narrow traverse across a bunda-covered gap also provides additional interest. Pause a while on the top and admire the fine panoramic view of the mountains, the plain, Žabljak and the Tara Canyon. Return the way you came; there is no alternative.

Some observations on the fauna of Durmitor

On first impressions, animal life seems relatively scarce in the alpine zone of the Durmitor mountains. Being a lightweight expedition, we have never had the luxury of having binoculars or field guides with us, so we see only a small fraction of the wildlife present and can identify even less. However, over the course of three weeks living and caving here, a surprising variety of animal life is encountered.

There is a large community of birds closely associated with the bunda (mountain pine, *Pinus mugo*). These include coal tit, siskin, bullfinch, crossbill, linnet, rock thrush and black redstart, as well as numerous other small brown jobs which weren't identified. Willow warblers and chiffchaff were both heard but not seen. One morning, camp woke to a dawn chorus courtesy of a highly vocal group of alpine accentors. Sparrow hawks make occasional passing visits, and sometimes larger raptors can be seen soaring at height. One moonless night the silhouette of an owl was seen drifting silently around the edge of camp. Walking down towards Bunda Jama we were surprised to flush a pair of rock partridge from the scree in front of us. Higher up on the cliffs and rocky peaks, wallcreepers creep around on walls while alpine choughs and ravens swoop about overhead. Brief glimpses of rare and peculiar birds were seen, and many an hour could be spent chasing them through the bunda.

On the mammal side of things, the only diurnal animals to be seen were the Chamois. Usually seen at a distance, having already clocked us and running away quickly but effortlessly over the rough and steep terrain. One individual however, seen in Donja Ališnica, stood its ground and kept us in view as if it had a calf nearby. These are the Balkan subspecies (*Rupicapra rupicapra balcanica*) which are much scarcer than their Alpine cousins and thought to be declining. This year, we became aware that the mess tarp was being visited during the night by creatures unknown, who were taking little bites of any easily accessible food. Later, these little rodents were seen scampering around after dark by people's headlights, and became variously known as mountain mice, squirrels and chinchillas. We now know them to be edible dormice (*Glis glis*). Perhaps these would be a useful source of protein should hard times ever fall on future expeditions. Also seen occasionally are weasels and unidentified small rodents. Black scats are commonly found by paths or on rocks signifying the presence of other carnivorous animals. It could be very interesting to bring a small camera trap on any future visit.

Since exploration of Bunda Jama began in 2013, bats have regularly been seen and heard in the upper parts of the cave. They have been observed at all points between the surface and the abandoned passage, beyond Bat Inlet and the formation junction. The bats appear to be most active in the early night time, between dusk and midnight. Unfortunately it wasn't possible to bring any detection or recording equipment with us. Luckily, one mating pair on the wall of the Express Way presented a good photo opportunity, allowing an identification of Brandt's bat (*Myotis brandtii*) to be made. This doesn't preclude other species of bat using the cave. Bats seen flying around the entrance of Bunda Jama seemed to be in two distinct size classes, suggesting at least one other species is present. Very little bat monitoring has been carried out in Durmitor and none in the high alpine zone, so any information we can provide to local scientists is valuable.

Figure 37 A pair of Brandt's bats on the wall of The Expressway in Bunda Jama

A variety of reptiles and amphibians have also been seen or our expedition. Snakes are occasionally stumbled across. These are either the meadow viper or the adder (Balkan ssp.) which are both similar in appearance and syntopic on Durmitor. Horned vipers are also probably present but less abundant at altitude.

Lower down the mountain in the beech woods sand lizards have been seen. A small shallow pond near the path through Donja Ališnica is packed full of alpine newts. Newts have also been found in camp, and rescued from the bottom of the YF1 shakehole. At night, frogs and big fat toads can be seen loitering in the wet grass.

Figure 38 A newt that invaded camp one evening

As for invertebrates, the mountains are buzzing. The richness and abundance of alpine flowers results in a similarly diverse assemblage of insects. Some easily recognisable species include the hummingbird hawk moth, common swallowtail, Apollo butterfly and five-spot burnet. The relative abundance of different insects has changed markedly from year to year. 2012 was the year of the blue butterfly (possibly Damon Blue). 2013 was the year of the watching hoverflies. In 2014 however, there were very few hoverflies or butterflies of any sort. Instead, a great multitude of grasshoppers and crickets chirruped away in the sun-drenched meadows. On occasion, glow worms were seen briefly lighting up in the bunda bushes at night. Down at Crno Jezero (the Black Lake), where we traditionally swim on the last day of expo, the waters are inhabited by the noble crayfish (*Astacus astacus*).

Figure 39 The crayfish found in the Black Lake

Summary of Accounts

The table below shows the expenses for the expedition. Individual expenses are shown for 3 week participants and in brackets for 2 week-ers.

N.B. The relationship between individual costs and total costs depends on how it was split between people and is therefore not consistent.

	Approximate individual cost	Total cost
Insurance (Dogtag)	£82 (70)	1193
Travel		
• Flights	£328 (£269)	£3,519
• Taxi	£55	£857
• Extra bags	£13	£198
• Total	£396 (£337)	£4574
Gear	£87	£1658
Food (bought pre-expo)	£14	£257
Shopping during expo	£54	£980
TOTALS	£633 (£562)	£8662

Total donations to the expedition (see intro) of £2112 (£650 - GPF, £1462 - YuStart, £28 - Trevolta) and the expedition making a slight loss this year meant that the final costs per person were a little over £100 lower than those in the table above.

Future expedition plans

We do not intend to run an expedition in 2015, but anticipate a return to Durmitor in 2016. There are still large and promising areas to prospect and many entrances to shaft bash. Several divers, including Tony Seddon, have shown a keen interest in probing the Bunda Jama sump so it is likely that our next visit will once again see a big logistical change towards a diving-focussed expedition.

Having only just squeezed the exploration of BJ into this trip, it is unsurprising that little attention was given to anything other than the obvious way down. Having the cave rigged for a push at the sump during the next trip may enable dry cavers to look elsewhere for dry leads in the bottom half of the cave.

Intriguingly in YF1 there is a draught evident in the area around Tectonic Chamber, but this is lost in the passages below Inferno Shaft. Given the proximity of the cave to camp, it may well be worthwhile rigging the cave with a view to looking for slightly more obscure ways on than those we followed this year. In addition, the original route down from the very top of The Real Frozen Deep (i.e. not doubling back under the Tip Of The Iceberg) has not yet been pushed to a conclusion.

The hydrology of Durmitor is complex, but resurgences are known to exist in the Tara Canyon, some 10 km horizontally and 1.5 km vertically. One of these resurgences is shown in Figure 40, which is a photo taken after a period of dry weather in August 2010. The resurgence was described as choked, but with a soaring chimney in the cliff above, with the potential to contain an entrance.

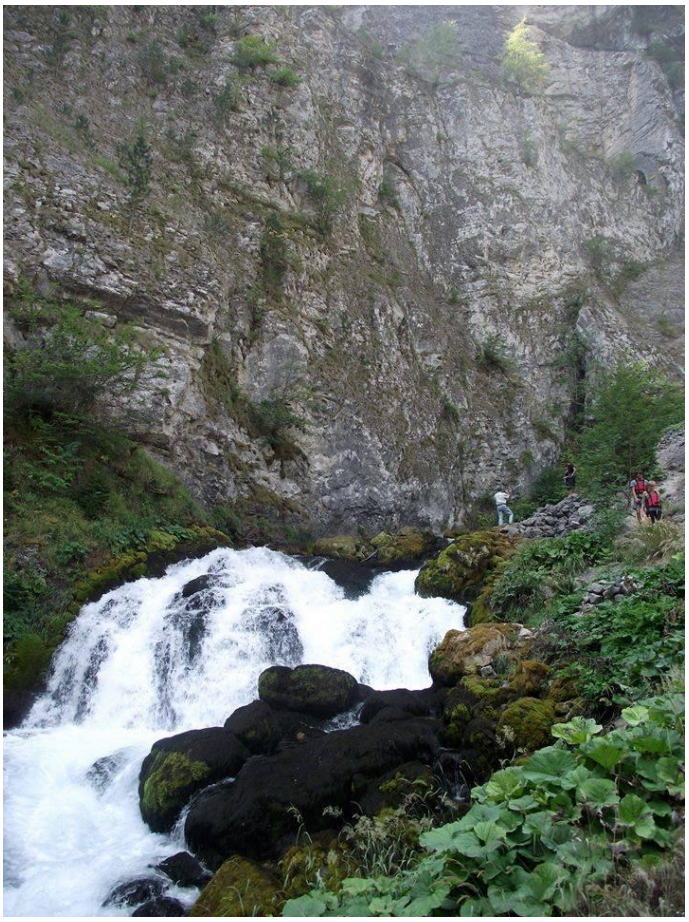


Figure 40 A resurgence in the Tara Canyon (David Rose)

Appendix 1: Expedition Diary

What everyone did each day - from the log book

Date	Activity	Personnel
Sun 3rd August	Walk up to camp	LO, RvdA, APW, WGS
	Camp at start of Donja Ališnica	CLM, AJV, MH, SJ, TFB, MF, AJW, RADH
	Return down mountain	AMH, LDB, VG
Mon 4th	Autocamp	AMH, LDB, VG
	Setting up camp	CLM, AJV, MH, SJ, TFB, MF, AJW, RADH, LO, RvdA, APW, WGS
Tues 5th	Shopping	MH, CLM, AJV, SJ, MF
	Walk up to camp	LDB, VG
	Hospital	AMH, LO, RvdA
	YF1	APW, AJW
	Bunda Jama	WGS, AH, TFB
	Camp	MTS
Weds 6th	JVC pushing	CLM, MTS, APW, WGS
	JVC bolting/photos	LDB, MH
	Bunda Jama	MF, SJ, AJV
	Prospecting	VG
	Walk up to camp	LO, RvdA
	Walk down to AutoCamp	AJW, AH
	Camp	TFB
Thurs 7th	BJ rigging to JIM	MTS, SJ
	BJ re-rig expressway/photos	LDB, MH
	YF1	LO, RvdA, AJV, TFB
	Shaft Bashing (YF4, YG1)	CLM, WGS
	AutoCamp	VG, MF
	camP	APW
Fri 8th	YF1	AH, APW

	Bunda Jama	AJW, WGS, LO
	Shaft Bashing (K-Do)	LDB, SJ, RvdA
	Walk down to Autocamp	MH, TFB
	Walk up to camp	MF, VG
	Camp	AJV
Sat 9th	Bunda Jama (pushing)	MF, CLM
	Bunda Jama (bolting)	WGS, AJW, AH
	YF1 (pushing)	RvdA, VG
	YF1 (surveying)	LDB, AJV
	Walk down to Autocamp	MTS, APW
	Walk up to camp	MH, TFB
	Camp	SJ, LO
Sun 10th	Bunda Jama	AJV, TFB
	YF1 (surveying)	LO, LDB
	YF1 (photo trip)	MH, SJ
	Shaft Bashing (Hello Apple, Whoppa)	AJW, RvdA
	Arrive at camp	AW, CH, VB, MTS, APW
	Geology	VG
	Camp	AH, MF, CLM, WGS
	Fly back to UK	AMH
Mon 11th	YF1 (pushing)	LO, AH
	YF1 (re-rigging)	CLM, CH
	YF1 (surveying)	MF, WGS
	BJ Pushing	MTS, AW
	BJ Pushing	AJW, APW
	BJ dig rebuild	MH
	Shaft Bashing (YK30)	SJ, VB, LDB
Tues 12th	Bunda Jama (Surveying)	AJV, MF
	YF1 (pushing)	VB, TFB

	YF1 (surveying)	LDB, CLM
	Shaft Bashing	CH, RvdA, MTS
	Walk up Bobatov Kuk	MH
	Shopping	WGS, SJ, AJW
	Camp	AW, APW, LO
Weds 13th	Bunda Jama (pushing)	MTS, WGS
	Bunda Jama (photo trip)	TBF, MH
	YF1 (pushing)	AW, CLM, AJW
	YF1 (surveying)	APW, SJ, AJW
	Prospecting	LDB, VG, RvdA, LO, AH
	Walk down to Autocamp (pm)	LDB, AJV
	Camp	AJV, MF, VB
Thurs 14th	Bunda Jama (surveying + pushing)	MF, VB
	Shaft Bashing	RvdA, LO, CH
	Prospecting (Gologlav)	AW, APW, AH
	YF11 photography	MH
	Back to camp after hanger collection	AJV
	Camp	CLM, WGS, MTS, AJW, VG
	Canoodling	TFB, SJ
	Leave Žabljak for UK	LDB
Fri 15th	Bunda Jama (pushing)	AJW, AH
	YF1 (photo trip)	MH, LO, RvdA
	YF1 (bolt traverse)	AJV, MTS
	Shaft Bashing	CH, WGS, CLM
	Prospecting/Cuddling	TFB, SJ
	Down to Žabljak and back	VG
	Camp	VB
	Bed	AW
Sat 16th	Bunda Jama (pushing - a.m.)	AW, MF

	Bunda Jama (pushing - p.m.)	TFB, CH
	Food Run / Tent Swap	VB, CLM, WGS
	Camp	MH, AH, APW, AJW, SJ?
	Activity? Bolt traverse #2?	MTS, AJV
	Leave Durmitor	LO, RvdA
Sun 17th	Bunda Jama (pushing - a.m.)	CLM, APW
	Bunda Jama (pushing - p.m.)	MF, AJW
	Bunda Jama (photo trip to Enigma rift)	MH, AH
	YF1 De-rig	WGS, VB, SJ
	Camp	AW, CH, TFB, AJV
	Accompany VG to Žabljak plus return?	MTS
	Leave Durmitor	VG
Mon 18th	Bunda Jama (final pushing trip)	AJV, MTS
	YF1 De-rig	WGS, CH
	Prospecting (K-Do camp)	TFB, VB, AH, MH
	Walk to Ice Cave	MH
	CamP	SJ, CLM, APW, AW, AJW, MF
Tues 19th	Bunda Jama De-rig	SJ, TFB, WGS, AH
	Shopping	MH, CH, AJW, APW
	Camp	MTS, AJV, AW, VB, CLM, MF
Weds 20th	Bunda Jama De-rig	VB, CH, MF, AJW, APW
	Camp/GA prospecting	MH, MTS, CLM, AH
	Other	AJV, AW
Thurs 21st	BJ de-rig from CDLS	CLM, MTS, AJV, WGS
	BJ photos/bag carry	MH, TFB
	Camp/Bag collection from BJ/Frisbee	VB, APW, AW, AJW, AH, CH
	Who the Dickens knows???	SJ?

Fri 22nd	Bobby K walk	AH, MTS, WGS, SJ
	Bezzy V walk	MF, AJW, AJV, VB
	Planinica walk	MH
	Camp tidy-up	CLM, TFB, CH?
	Walk down to Žabljak	AW, APW
Sat 23rd	Walk down to Žabljak	Everyone else
	Pack up Autocamp	AW, APW, CLM, MF, CH
Sun 24th	Fly home	Everyone

Appendix 2: Stash List

Laminated stove instructions

Laminated maps × lots

1 pair digging gloves

Large tub of pens/pencils/markers

Shit map case + 12 pat-used nail varnish

Large pile of prospecting sheets

“Call-out board”

~200 mL alcohol gel (expires Nov ’16)

250 mL alcohol gel (unopened, expires Jan ’16)

5 polypins

3 light blue tarps (small)

2 dark blue tarps (1.5 m × 1.5 m)

2 green tarps (1.5 m × 1.5 m)

2 large white tarps (6 m × 4.5 m)

1 medium white tarp (3.4 m × 3.6 m)

1 green/blue tarp (2.7 m × 3.6 m?)

Tony’s mess tin

1 plastic funnel

2 roll mats

Water purification (~390 × 1 L, 200 × 25 L)

2 empty Eurocreme tubs (2.5 kg, 900 g)

1 brown finger

1 roll gaffa tape

Bag of tent pegs

~200 mL moisturiser

Washing up bowl

Petrol can

Size 9½ bootees (44 Eur)

Size 9 cut-off wellies

Size 5 white wellies

Repair kit (gaffa tape × 2, electrical tape, cable ties , araldite, needle & thread, superglue, inner tube, stiff cable, bulldog clips, jubilee clips)

100 AAs

100 AAAs

9 black slings

~17 red slings

Tutu netting

~200 ml liquid soap

Andy’s snow gaiters

Vango tarp poles

Steel tarp poles & A-frames × 2 sets
Crowbar
Lump hammer
Chisel
2 × 125 mL zippo lighter fuel
CV470 butane (part used)
Type 200 190 g gas cartridge
~50 through bolts
2 dishcloths
~2½ pairs of tights
Cord × lots
Reflective tape/rods
Tarp clips × 30
Water/Bernies bags connectors
1 pair sandals
First aid stuff (see below)

First Aid

Mini scissors
30 × 5 gauze swabs
10 medium melolin dressings
8 small melolin dressings
4 tiny amounts gaffa tape
9 triangular bandages
30 cleansing wipes
1 absorbent dressing pad
12 dressings (various sizes)
16 normosol

Rope

Tat	5 m
2007	23 m
2009	46 m
2005	54 m
2009	32 m
2009	52 m
2008	44 m
2008	20 m
2007	32 m
2006	29 m
2005	15 m

2006	27 m
2007	28 m
2007	14 m
2005	51 m
2007	42 m
2008	22 m
2009	8 m
2009	52 m
2009	16 m
2008	49 m
2009	24 m
Unknown	20 m
Unknown	24 m
Unknown	9 m
Unknown	13 m
Unknown	14m (9mm)
BPC	47 m (9mm)
BPC	17 m (9mm)
BPC	28 m (9mm)
2005	7 m (ridge for tarp) + other ridge ropes

Appendix 3: Recipe Cards

Moroccan TVP stew

Ingredients	16/17 people
TVP chunks (UK)	950 g (2 x Natco, 1 x EastEnd)
Onions, diced (Z)	8
Garlic, chopped/crushed (Z)	1 bulb
Ground ginger (UK)	3 tsp (to soak) + 4 tsp (to cook)
Cinnamon (UK)	3 tsp (to soak) + 4 tsp (to cook)
Honey (Z) or sugar	6 tsp (to soak) + 6 tsp (to cook)
Tomato puree (Z)	6 tsp (to soak) + 9 tsp (to cook)
Ground coriander	2 tsp
Cumin	2 tsp
Aubergines (Z)	3
Salt (Z)	To taste
Passata (Z)	2 (1 L)
Dried apricots (UK), chopped	2/3 kg (1 bag)
Oil (Z)	
To serve	
Couscous (Z) (if available – if not use pasta)	2 kg
Veg stock cubes (Z)	8

Preparation (at start of day)

Put TVP in expo pan.
Add ginger, cinnamon, honey and tomato puree.
Add ~ 5 L water.
Leave to soak.

Preparation (prior to dinner)

Transfer TVP and stock to the pressure cookers. Do not fill more than $^{1}/_{3}$ – ½ full.
Bring pressure cookers up to pressure.
Cook for 2 minutes.
Turn off heat and wait for pressure to reduce so that lid can be opened.

Fry onion and garlic in oil in the expo pans for 5 minutes.
Add aubergines and fry for 5 minutes.
Add TVP (including cooking liquor), passata, apricots, honey, ginger, coriander, cumin, cinnamon, tomato puree, salt.
Add more water if required to give desired consistency (approx. 1.5 L total including TVP liquor).
Bring up to the boil and simmer for 10 minutes. Add more spices to taste if required.

Boil water in one of the pressure cookers (approx. 2 L per kg of couscous). Add stock cubes. To the other pressure cookers, add couscous then add the stock, replace lid and stand for 5-10 min. Stir then serve.

NB. If Avelina has arrived, you will need to ensure that there are some leftovers for her to eat the following day.

Spanish Lentils

Ingredients	16 people	Veggie version (for 2)
Brown lentils (UK)	2 kg (4 bags)	300 g (over ½ bag)
Bay leaves (UK)	9	2 small
Kulen sausage (diced) (Z)	1 ½ large	-
Oil (Z)	24 tsp	3 tsp
Garlic (Z)	1 bulb	3 cloves
Onion (chopped) (Z)	5	1 small
Veg stock cube (Z)	3	1
Paprika (UK)	4 tsp	1 tsp
Cayenne (UK)	-	½ tsp
Chilli flakes (UK)	-	½ tsp
Cornflour (UK)	6 tsp (mix with a little cold water)	1 tsp (mix with a little cold water)
Salt (Z)	2 tsp	¼ tsp
Water	4 litres	¾ litre
To serve		
Rice (Z)	2 kg	
Salt (Z)	1 tsp	

Preparation (at start of day)

None

Preparation (prior to dinner)

In expo pans, fry onions and garlic in oil.
Add lentils, diced Kulen, bay leaves, salt, water and stock cubes and simmer until lentils are cooked (at least 30 minutes). Add paprika and cornflour at end of cooking. Add more water if required to reach desired consistency.

For veggies if required, fry onions and garlic in oil in large trangia pan.
Add lentils, cayenne, chilli flakes, bay leaves, salt, water and stock cubes and simmer until lentils are cooked (approx. 1 hour). Add more spices to taste. Add paprika and cornflour at end of cooking. Add more water if required to reach desired consistency.

Cook rice in batches using the pressure cookers.
Place 1 kg rice and ½ tsp salt in pressure cooker.
Cover with water (1.5 L).
Bring up to pressure and cook for 2 – 3 minutes.
Turn off heat and wait for pressure to reduce so that lid can be opened.

Cannellini Bean & Polenta Stew

Ingredients	19 people
Cannellini beans (UK)	2 kg (4 bags)
Onion, diced (Z)	10
Garlic, chopped (Z)	20 cloves
Cabbage (or spring greens), shredded (Z)	2 kg, approximately 1-2 cabbages
Veg stock cube (Z)	20
Fine polenta (UK)	1 kg (1 bag)
Salt and pepper (Z)	To taste
Oil (Z)	~ 300 mL
To serve	
Smash	1 kg (2 bags, make up with 5 L water)
Extra virgin olive oil	Small bottle

Preparation (at start of day)

Put 1 kg canellini beans into each of two pressure cookers.
Cover with water.
Soak during the day.

Preparation (prior to dinner)

Drain beans and just cover with fresh water.
Bring pressure cooker up to pressure.
Cook for 15 minutes.
Turn off heat and wait for pressure to reduce so that lid can be opened.
Check if beans are cooked; if not, put back on.

In expo pans, fry onions and garlic in oil. Add beans, stock cubes and 8.5 L water and bring to the boil. Add cabbage and cook until tender (~5 mins). Add polenta (very slowly, as it goes lumpy very easily), stir and cook until thickened (~4 min). Season to taste. Serve with extra virgin olive oil on top.

Boil water to make Smash in the pressure cookers.

NB. This recipe created quite a wet mix, perhaps use less water next time.

Appendix 4: Adam's Accident

On the first walk up to camp Adam Hughes fell over on the steep path up from Crepulj poljana to Donja Ališnica and had an accident that required external assistance and a premature return to the UK. See Figure 42 for a timeline of the accident and below for a first-hand account by Adam and some notes on the logistics of the rescue.

Figure 41 The scene of Adam's accident (left) and the rescue team arrive (right)

My experience

by Adam Hughes

"Firstly, a massive thanks must go to all involved in my rescue, both in terms of members of the group and the Durmitor Mountain Rescue Team as well as the Žabljak Ambulance Service and Hospitals.

The final diagnosis was a severe left ankle sprain as a result of hyperextension of the ligaments around the ankle joint. In terms of the accident itself, I slipped off a rock ledge on the path which resulted in a fall of approximately 30-50 cm, landing on my left ankle, which rotated on impact causing immediate excruciating pain. I can't say lying with my face in a pile of Bunda was particularly pleasant so it was with great relief that Mark was close behind me and having seen me fall came to my aid very quickly. Team members in front and behind us were alerted to the incident by means of whistle signals - thankfully I had one on my rucksack strap!

Fairly soon we were joined by Voja, who proved an invaluable asset in terms of being able to translate and liaise with the local rescue services. Help was quickly summoned and as more team members following behind us arrived on the scene I was able to give guidance on what needed to happen in terms of a medical response. Luckily I had a group first aid kit with SAM Splints and pain relief at the top of my rucksack. I took on pain relief before being helped into a more comfortable position, before we were able to remove my boot and sock in order to examine the damage and apply SAM Splints. As more people arrived we were able to organise a bothy, food, and lighting which was essential since the light was fading. Team members took it in turns to join me in the bothy (or the sweat box as it became known) to keep me warm. In what seemed like no time at all mountain rescue had arrived, set up a Kong stretcher, loaded me, and begun the trek back down the mountain. I can't say it was the most comfortable ride I've ever had, but the MR team did a fantastic job of getting me down in about two hours. At the end of the stretcher carry I was passed over to the ambulance service for the short ride into Žabljak with Voja and Laura, who had both come down with me. At Žabljak we had to swap ambulances for the ride to the hospital, which meant that Laura couldn't come with me due to a lack of space in the vehicle, so she had a ride back to Autocamp with the local police. I have to say the ambulance ride was worse than the stretcher carry. Unlike in the UK, it would appear the Montenegrin Ambulance Service don't believe in seat belts on ambulance trollies!

The local hospital was an interesting place, staffed by two technicians and a single doctor, who, given it was now roughly 2 am was asleep and seemed quite grumpy that a stupid Englishman had fallen over and required looking at. Some very basic X-Rays were taken (after the X-Ray technician had been brought in from home) which ruled out any major fractures but couldn't guarantee that there were no minor ones. I had a support bandage put on and was advised to go to the main hospital in the capital, Podgorica, in a day or so. Thankfully the ambulance brought me all the way back to the Autocamp where we arrived at about 4am, thoroughly exhausted after being awake for nearly 24 hours!

After spending a day at Autocamp I was taken to the main hospital in Podgorica by Ruud and Lieke where I was examined again and given a backslab plaster cast and told to go home. "

Notes on the logistics of the rescue

The usual route for contacting Montenegrin Mountain Rescue is via telephoning 112. As Voja already had contacts in Žabljak who were part of Montenegrin Mountain Rescue, he made a direct call to them instead. We were fortunate as this resulted in a quicker response. The rescue was coordinated by Zoran Vojinović and involved approximately 7 other personnel, some, but not all of whom, were official Mountain Rescue personnel.

We were extremely fortunate to have Voja as the personnel involved in both the mountain rescue and the ambulance journey did not have a very good level of English so direct communication was limited. It may be useful for future expeditions to take a more comprehensive translation sheet for phrases required in an emergency situation.

The first ambulance was able to drive to the point where the walking path meets the just driveable track. This would be difficult in a normal car.

Adam was initially taken to Pljevlja general hospital, approximately 60 km away. This is a very basic hospital, however its proximity to Žabljak means that it is likely to be the hospital of choice for minor injuries. The hospital in Podgorica is better equipped.

Sunday	17:45	The walk up to camp begins	
	20:30	Adam falls over	
	21:00	Voja contacts rescue personnel in Žabljak	
	22:30	Rescuers arrive	
	23:00	Rescuers Voja & Laura depart with Adam in Kong stretcher	
Monday	01:00	Rescuers reach the ambulance	
	01:15	Ambulance arrives in Žabljak	
		Adam & Voja depart in new ambulance to Pljevlja	Police drive Laura to Autocamp.
	02:00	Adam treated at Pljevlja hospital	
	04:00	Ambulance arrives at Autocamp with Adam & Voja	
Tuesday		Laura & Voja return to camp	
		Lieke & Ruud drive Adam to hospital in Podgorica	
Tuesday - Sunday		Adam is joined by 2 different people each day.	
Thursday		Adam moves to a hotel	
Sunday		Adam departs Žabljak by taxi for a return Dubrovnik – UK flight	

Figure 42 Timeline of Adam's rescue

Appendix 5: Emergency Planning Document

Introduction

This document was written as a guide to planning how to respond to an emergency situation on the mountain during the YUCPC 2014 Durmitor expedition. The authors accept no responsibility for an injury resulting from following the guidance contained within this document.

There are some potential rescue scenarios that could be dealt with within the expedition team. Others would require outside help from the Montenegrin Cave Rescue or further afield. In the latter situation, the time delay is likely to be significant and therefore actions taken by the YUCPC team will impact significantly on the success of the rescue.

It is paramount to consider the safety and wellbeing not only of any casualty but also of the rescuers.

Call out procedure

The following call out procedure must be followed by EVERY group leaving camp regardless of the activity being carried out.

- Record the call out on the board in the mess tent.
- Include the **leaving time/date** and the **call out time/date**. Dates are required to avoid confusion due to overnight call outs.
- Include the names of everybody in the party.
- Include the planned destination and route.
- Nominate one person in the group to have their **phone** on all day and write down who this is

When setting your call out, consider the following.

- Avoid setting a call out for the middle of the day (nobody will be around) or the middle of the night (everybody will be asleep).
- Shaft bashing and prospecting teams should set the same call out time so that people will be at camp in case of a rescue. The recommended call out time for shaft bashing and prospecting is 19:00 as this is approximately one hour before dark.

All groups must be back out camp by their call out time otherwise a rescue will be initiated. Do not underestimate the time required for your journey back to camp. Due to the communication difficulties on Durmitor, do not rely on just making contact with camp by your call out time. Unnecessary call outs put everybody involved at risk.

In thick fog call outs cannot be mounted, and teams must therefore sit it out in their bothy. Call out will not begin until the weather improves. Bad weather can be a relatively common occurrence on Durmitor, therefore regardless of the current weather make sure you are equipped for this scenario when leaving camp.

The nominated camp person is responsible for being aware of all call out times and initiating a rescue if required. They must be contactable by radio and mobile phone at all times. If they need to leave camp for any reason, they must delegate this responsibility.

Roles and responsibilities

The specific roles required in different emergency senarios are detailed in the relevant senario section.

Rescue equipment

The following equipment is designated as rescue equipment and MUST remain at camp except in the event of an emergency.

- 100 m rope
- 30 spits
- 30 through bolts
- Thermos
- 4 roll mats
- Emergency first aid grab bag (see Appendix 1 for contents)

It is expected that parties leaving camp for prospecting, shaft bashing or caving take the following emergency equipment as a minimum in addition to personal equipment.

Prospecting	Shaft Bashing	Caving
Andy V to add		

The closest rescue service with an underground “caving” style stretcher is Montengrin Cave Rescue (based in Nikšić).

Communication

There is mobile telephone signal on Durmitor, however it is unreliable with text messages frequently being received only hours or days after they were sent. For the 2014 expedition be a limited number of communal Montenegrin SIM cards will be a purchased to enable communication in the event of an emergency.

Radios work well within the line of sight. Radio communication between camp and K Do requires relay station(s) at the top of the ridge. Camp can be contacted from the camp end of the secret passage. Bunda Jama can be contacted from the K Do end of the secret passage. From this end contact can usually be made with camp but speech is unintelligible.

Radio relays are required for contact between camp and other areas to the north, e.g. Kotac and Škrapa. Precisely where these would need to be located is currently unknown.

Scenarios

The main activities for the YUCPC Durmitor 2014 expedition are prospecting, shaft bashing and caving. The two main emergency situations presented by these activities are (1) the failure of a group to return to camp for reasons unknown (overdue party) and (2) an accident.

Overdue party

Any group that is not back at camp by their callout time will be classed as an overdue party and a rescue will be initiated. The exact procedure followed will be dependent on the group's activity.

Prospecting

(1) Assign the following roles:

- A surface Controller (1)
- Runners (number dependent on situation, recommended minimum of 2) **= Team 1**
- Follow up team (minimum of 2, one must be prepared to be the casualty manager) **= Team 2**

(2) Surface controller remains at camp and coordinates the surface teams.

(3) Runners (Team 1) depart.

Aims:

- To establish radio links between camp and the search site. These must be maintained for the duration of the rescue.
- To try to make radio contact with the overdue party.
- To cover as much ground as possible whilst maintaining in radio contact with camp.

Equipment: personal gear and radios only (fast and light)

NB Separate runners may also be required to call back any groups who are not currently at camp.

(4) Assemble gear for follow up team (Team 2):

- Food and hot drinks
- Bothy and sleeping bag(to leave at radio station)
- Emergency first aid kit grab bag
- Lots of radios

(5) Follow up team (Team 2) depart

Aims:

- to work with any available runners to locate the missing group as quickly as possible.
- to treat any casualties.

(6) Runners/follow up team communicate to camp if more follow up teams (Team 3, etc.) are required and if so what equipment is required.

Shaft bashing

(1) Assign the following roles:

- A surface Controller (1)
- Runners (number dependent on situation, recommended minimum of 2) **=Team 1**
- First follow up team (minimum of 2, one must be prepared to be the casualty manager) **= Team 2**
- Second follow up team **=Team 3**

(2) Surface controller remains at camp and coordinates the surface teams.

(3) Runners (Team 1) depart.

Aims:

- To establish radio links between camp and the search site. These must be maintained for the duration of the rescue.
- To try to make radio contact with the overdue party.
- To cover as much ground as possible whilst maintaining in radio contact with camp.

Equipment: personal gear and radios only (fast and light)

NB Separate runners may also be required to call back any groups who are not currently at camp.

(4) Assemble equipment for follow up team 1:

- Food and hot drinks
- Bothy and sleeping bag (to leave at radio station)
- Emergency first aid kit grab bag
- Lots of radios

(5) First follow up team (Team 2) depart

Aims:

- to work with any available runners to locate the missing group as quickly as possible.
- to treat any casualties.

(6) Assemble equipment for second follow up team (Team 3):

- minimum two full personal caving gear kits
- minimum 60 m length rope (can be cut if required)

(7) Runners/follow up teams communicate to camp if more follow up teams are required and if so what equipment is required.

Caving

(1) Assign the following roles:

- A surface Controller (1)
- Runners (number dependent on situation, recommended minimum of 2) **= Team 1**
- First follow up team (minimum of 2, one must be prepared to be the casualty manager) **= Team 2**
- Second follow up team (one must be prepared to be the underground controller) **= Team 3**

(2) Surface controller remains at camp and coordinates the surface teams.

(3) Runners depart.

Aims:

- To establish radio links between camp and the search site. These must be maintained for the duration of the rescue.
- To try to make radio contact with the overdue party.
- To cover as much ground as possible whilst maintaining in radio contact with camp.

Equipment: personal gear and radios only (fast and light)

NB Separate runners may also be required to call back any groups who are not currently at camp.

(4) Assemble equipment for first follow up team (Team 2):

- Personal caving gear
- Group first aid kit
- Radios for use underground if sufficient available
- Spare batteries for lights
- Food and hot drinks (small amount)

(5) First follow up team (Team 2) depart

Aims:

- to locate the missing group as quickly as possible and communicate back to camp.
- to treat any casualties.

(6) Assemble equipment for second follow up team (Team 3):

- Personal caving gear
- Rigging equipment
- Hauling equipment
- Drill (dependent on situation and availability)
- Emergency first aid kit grab bag
- More food and hot drinks
- Bothy and sleeping bag (to leave at radio station)

(7) Runners/follow up teams communicate to camp if a more follow up teams (Team 4, etc.) are required and if so what equipment is required.

Accidents

There are two ways in which personnel at camp could be informed of an accident: (1) the accident could be discovered as part of an overdue party search, or (2) the accident is reported by one of the individuals involved.

Accidents above ground are less complex, and in many situations minor accidents can be dealt with independently by the personnel involved. More serious accidents, and those occurring below ground, will require a rescue involving every expedition member.

Accident discovered as a result of an overdue party search

The accident is likely to be identified by the first follow up team (Team 2) who then assume the following roles.

- **Casualty manager** (permanent companion to the casualty, responsible for their welfare and keeping them happy and informed)
- **Other** (responsible for informing camp/subsequent follow up teams and escorting out non-injured parties of original team)

Accidents within a cave will also require an **underground controller** (from Team 3) who will coordinate all further underground efforts. They are responsible for equipment and underground personnel.

Further actions are dependent on the type of accident.

Accident reported by individual(s) involved

This scenario may occur at a time of day and therefore may be when there is only the designated camp person at camp.

If in a pair, the non-injured party must make the decision whether to leave the casualty or stay with them and await call out

This situation is more favourable if there is another team is in the same cave. In this case, either the non-injured party or the other team leaves to raise the alarm.

Whoever remains with the casualty becomes the **casualty manager**. If the casualty must be left alone, at least one person returns to them and becomes the casualty manager.

When the alarm is raised the following roles are assigned.

- **Surface controller** (located at camp, coordinates teams)
- **Underground controller** (coordinates underground teams, likely to be a member of Team 3)
- **Radio operators/runners** (to relay messages between the accident site and camp)
- **Underground teams** (role varies dependent on accident)

At certain times of the day this will involve recalling all other parties. In extreme circumstances there may be no choice but for the designate camp person to leave camp to get in radio contact.

The exact procedure followed will depend on the nature of the accident involved, however the following factors need to be considered by the **Surface Controller**.

- **Welfare of everybody involved as rescue may take a long time**

Food, drink, rest

- **Is a camp at the entrance required?**

If so, should the Surface Controller be located there?

- **Communication with Underground Controller**

Essential as it is hard to plan in advance for every scenario.

- **Liase with Underground Controller regarding re-rigging/re-bolting and enlarging constrictions**
- **Is outside assistance required?**

Monenegrin cave rescue, ASAK, UK cave rescue?

- **Surface Controller to inform UK contact/insurance company**

They must remain contactable for the potential duration of the rescue.

Specific Difficulties for YUCPC Durmitor caves

The two main YUCPC caves in the Durmitor northern region are Bunda Jama (YG20) and JVC (YF1). These two caves vary in character and a rescue scenario in each would need to be approached differently. Some important points to consider are covered in this section. See Appendices 6 and 7 for surveys of these caves.

Bunda Jama

Distance from camp

Bunda Jama is located in K Do, a significant distance from camp (approximately 45 minute walk carrying no weight). There is no line of sight between camp and the cave and therefore no direct radio contact. Therefore, a relay communication station would be required at the top of the ridge (see communication section).

Environment

The temperature is around 0 °C. The cave is almost entirely dry until Enigma Rift. The pitch following Enigma Rift is likely to be wet.

Large pitches

As of 2013, the are two large pitches: JIM (~ 68 m) and Expressway (~ 40 m). The Expressway is split by multiple rebelays. It is intended to rebelay JIM in 2014.

Constrictions

The two digs are too small for a stretcher to pass. Additionally, any injured caver making their way out under their own steam would be severely inconvenienced

Certain parts of Enigma Rift are too small for a stretcher.

Navigation

Navigation is confusing in Enigma Rift. There are arrows on the walls showing the way through.

JVC

Distance from camp

YF1 is located only a short distance from camp (approximately 5-10 minutes walk).

Environment

The entrance to the cave is filled with a large snow plug and the cave itself is filled with ice (to the 2012 exploration limits). Cavers are in constant contact with the ice, resulting in this being a very cold and wet trip. The risk of hypothermia is much higher than in most of the other known caves in the region.

Ropes

Progress throughout the cave (to the 2012 limits) is entirely on the rope. Issues have been observed with iced up ropes.

Contact details

Montenegrin Cave Rescue: (Tel. 112). Direct contact: Miloš Pavićević, tel: +38 **********
http://www.gss-cg.me/english/information.html
https://www.facebook.com/groups/105626209470427/

UK Contact (Mike Rippon): Tel. +44 **********

ASAK:
Peca: +38 **********
Voja: +38 **********

UK Cave Rescue:

Other caving clubs on Durmitor at the same time: None that we know of

First Aid Kit Contents

Personal First Aid Kit (minimum expected contents)

Plasters (10?)
Gaffer Tape
Antiseptic wipes (10)
1 blister pack of paracetamol
1 blister pack of ibuprofen
1 pack Imodium (loperamide)
1 pack antihistamines, e.g. loratadine/piriton
Oral rehydration solution powder/tablets

Group First Aid Kit (to be taken on all types of trips)

Dressings (4)
Bandages (4* no9)
Gauze (5 packs)
Normasol (sterile electrolyte solution for washing wounds) (5)
Steristrips
Water purification tablets
SAM splints (2)
Gaffer tape
Candles
Lighter
Cas cards
Paracetamol (1 blister pack)
Ibuprofen (1 blister pack)
Codeine phosphate (1 blister pack)

+ Bothy

Emergency first aid grab bag (to remain at camp unless required)

Dressings (10)
Bandages (4* no 9, 4* no 8, 4* no 7)
Gauze (10)
Normasol (sterile electrolyte solution for washing wounds) (10)
SAM splints (2)
Gaffer tape
Burnshield gel/dressings (5 gel packs, 4 dressings?)
Cas cards
Paracetamol
Ibuprofen
Codeine phosphate

Camp first aid kit (for replenishment of group first aid kits)

Dressings (10)

Bandages (4* no 9, 4* no 8, 4* no 7)

Gauze (20)

Normasol (sterile electrolyte solution for washing wounds) (20)

Steristrips

Water purification tablets

SAM splints

Gaffer tape

Candles

Lighter

Cas cards

Paracetamol

Ibuprofen

Codeine phosphate

Bunda Jama Brew Stop Kit

2 x roll mat

1 x stove

1 x pan

2 x mug

Food

Water

Water purification tablets

Bothy

Candle

Spare batteries

Drug Instructions

Paracetamol

For: Pain relief

Dosage: 2* 500mg Tablets every 4 hours

Contraindications: Allergy, had daily dose, liver problems, alcohol in last 6 hours

Ibuprofen

For: Pain relief/anti-inflammatory

Dosage: 2*200mg tablets every 4 hours

Contraindications: Allergy, daily dose exceeded, taken anything similar in last 12 hours (e.g. diclofenac), bleeding disorders, renal issues, alcohol in last 6 hours.

Codeine Phosphate

For: Pain relief

Dosage:

Contraindications:

Ideal combination:

2*500mg paracetamol + 2*200mg ibuprofen + xx mg codeine every 4 hours

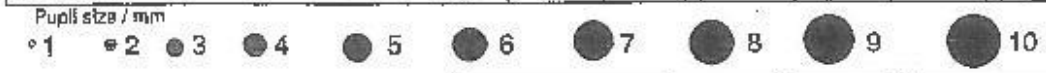
Casualty Card

CASUALTY CARD

NAME	AGE
History / Mechanism of injury	

PRIMARY SURVEY		TIME						
AIRWAY	Clear ?							
	Needs suction							
	Needs Guedel/Nasal airway							
	Remember C SPINE							
BREATHING	Rate / min							
	Noisy / Obstructed							
	Shallow / Normal							
	Cyanosis ?							
	Chest injuries							
CIRCULATION	External Bleeding site							
	Pulse rate / min							
	Reg / Irregular							
	Strong / Weak							
	Radial / Carotid							
	Capillary Refill Normal/Slow							
DISABILITY	Alert-Voice-Pain-Unresponsive							
	Pain Score 1 -10							
Pupil Size & Reaction		Time						
R = Reaction	NR = Non Reacting	Right						
C = Closed		Left						

Pupil size / mm



Limb movement & Sensation	Observations
EXPOSE the kill zone Chest Abdomen Any problems with C Spine Extremities	Observations

For Hypothermia - Notes

GET MORE INFORMATION
ALLERGIES .....
MEDICATION .....
PAST MEDICAL HISTORY .....
LAST MEAL .....
EVENTS- history notes

HEAD to TOE – SECONDARY SURVEY - Indicate injury location
Note particularly spinal injury

.....
Diagnosis

RECORD DRUGS & GASES ADMINISTERED

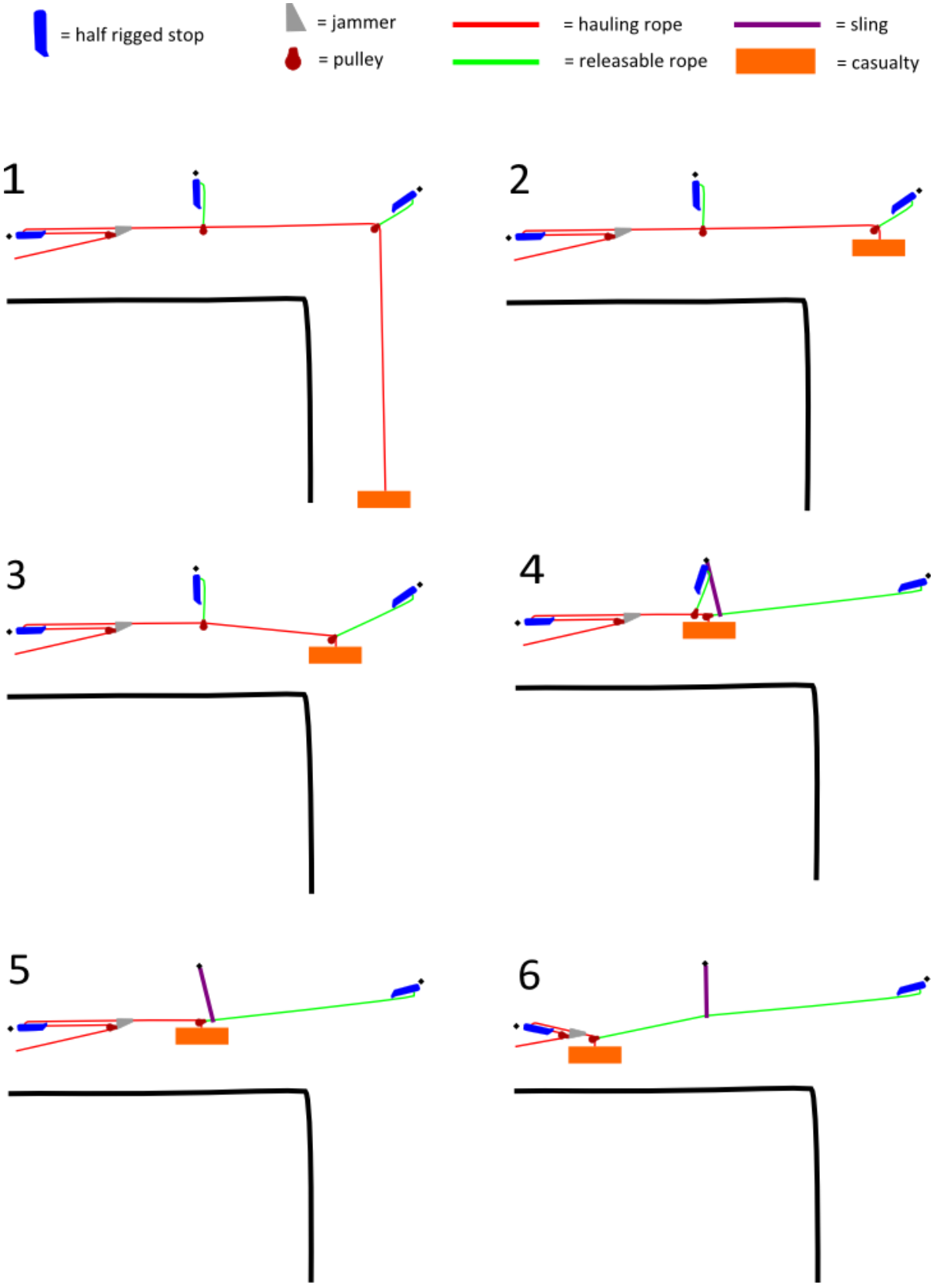
DRUG	DOSE	TIME	DRUG	DOSE	TIME

CASUALTY DETAILS
Address

Phone No
.....
People to contact

Medics name | Phone no | Date

Adaptable Hauling Rig:



Proposed group first aid contents for future expeditions

1 SAM Splint
Ibuprofen
Paracetamol
Codeine
Dioralyte
Imodium
Aspirin (×2)
Diazepam?
Gaffa tape (lots)
Candles (lots)
Lighter
Waterproof matches
Normasol (saline solution) sachets (×2)
Cleansing wipes (×2)
Dressings (×2)
Steri-strips
Tampons
Cas. cards
Pencils
Plasters?
Scissors (toughcuts)
Water purification tablets
Survival bag?

For inclusion with brew kits and at camp:
Burn gels

Appendix 6: Prospecting Data

The following data only covers entrances found this year. For (hopefully!) up-to-date data for all entrances in Durmitor, see http://durmitor.yucpc.org.uk/data.php.

Name	Date found	Personnel	Lat.	Long.	Elevation / m	Acc. / m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draught	Revisit Grade
YN1	13/08/14	RvdA, LO	43.14872	19.0207	2309	3	10	8	YN1	In Gornja Poljica, on top of west slope in rocky bit.	Blocked rift. Good draught, but requires more than half an hour with a crowbar	G	G
YP2	13/08/14	VG, AH	43.14909	19.02397	2231	5	4	7	YP2	2 m wide rift NW of very large boulder	Rift with choss floor and small amount of snow. No way on.	ND	ND
YQ1	13/08/14	LDB, CH	43.1495	19.02399	2252	4	1	2	YQ1	Rock face on N side of bowl (Gornja Poljica)	1m x 0.5 m hole at base of rock face. Blocked by one big boulder and lots of small ones. Would need lots of digging - beyond expo ability.	ND	ND
YQ2	13/08/14	LDB, CH	43.14925	19.02426	2244	7	2	5	YQ2	At entrance to bowl of Gornja Poljica. Bearing to camp approx. 130 deg. In area of boulders at back at base of solid rock wall.	Body sized entrance (50 x 30 cm) widens immediately. Looks like a pitch but cannot see clearly. Can see down to a jutting out rock face ~5 m below entrance and darkness beyond. Extremely loose entrance. Would require a lot of boulders to be removed in order to be able to enter safely.	ND	ND
YQ3	14/08/14	APW, AK, RADH	43.1696	19.04919	2204	15	6	4	YQ3	Just above the northern end of huge shakehole on N slopes of Gologlav.	Triangular entrance seen from top of shakehole leads to several drops down on to snow and/or gravel through large boulders. Cannot rule out way on. Some routes seem to be choked with snow.	ND	ND
YR1	15/08/14	TFB, SJ	43.15671	19.02921	2075	4	5	4	YR1	South side of V. Rutulja, quite high on	Reasonably large hole filled with loose boulders. No way on. Rocks dropped	ND	ND

Name	Date found	Personnel	Lat.	Long.	Elevation / m	Acc. / m	Length / m	Depth / m	Marking	Directions to entrance	Description of potential	Draught	Revisit Grade
										scree slope.	end abruptly.		
YR2	15/08/14	TFB, SJ	43.15672	19.02921	2045	4	4	4	YR2	SSQ side of Vratulja. Sha??y entrance in base of cliff.	Small alcove, no way on. Marker is visually obvious.	ND	ND
YR3	15/08/14	SJ, TFB	43.15815	19.02781	2108		4	0	YR3	SE side of V. Rutulja, high up in cliff. Looks promising from afar	1.5 m wide x 4 m long x 0.7 m high (approx). On LHS passage around 30 cm high and 0.5 m long but doesn't go anywhere. No way on.	ND	ND
YR4	15/08/14	TFB, SJ	43.1577	19.02945	2024	3	7	3	YR4	Bottom of V. Rutulja at S end	Loose shakehole filled with choss and snow. No way on.	ND	ND
YR5	15/08/14	SJ, TFB	43.15845	19.0301	1989	5	12	7	YR5	Near bottom of bowl of V. Rudulja roughly in middle of valley	2 rock bridges over cave around 12 m long. Snow plug in bottom approx. 2 m wide. Could be a way on under a bit of a squeeze but unlikely.	ND	ND
YR6	15/08/14	TFB, SJ	43.16068	19.0302	1939	5	20	4	YR6	Chain of small rifts/holes found on N side of bottom of V. Rutulja bowl. Long chain of 4-5 small entrances ending in rubble shakehole.	Seem choked but cannot descend without gear.	ND	ND
YR7	15/08/14	SJ, TFB	43.16059	19.0307	1946	0	8	6	YR7	Bottom of V. Rutulja bowl next to quite large shakehole which doesn't go anywhere.	Small amount of snow in bottom. Rock dropped bounces off walls and then stops. Hole about 2 m x 1 m at grass level. Goes down about 6 m and along around 8. Seems choked but may be way down. Would need gear.		

Key:

Draught: ND = Not detectable, S = Slight, G = Good, H = Hoolie

Revisiting Grade: 0 = Never come back, 1 = Has slight potential, 2 = Probably worth a revisit, 3 = Got to come back!