

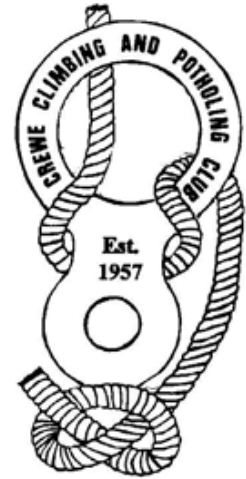


C.C.P.C. Newsletter 156. September - December 2024

Log on to www.ccpc.org.uk

Editor: Steve Knox

.....



Planned Club Meets, etc., from September to December 2024

Sun. 6 th Oct.	Knotlow Mine, Derbyshire.	
Mon. 7 th Oct.	CCPC Monthly Meeting. (Also available to Members via 'Zoom').	X Upstairs at The Red Bull, Butt Lane, Kidsgrove, Staffs. 8.30 pm. X
	White Scar Cave, Chapel-le-Dale, Yorkshire.	Extensive Cave system with long, wet streamway, and good formations
	Peak Cavern, Derbyshire.	One of the great Peak District systems, with multiple route choices.
Mon. 4 th Nov.	CCPC Monthly Meeting. (Also available to Members via 'Zoom').	(? Upstairs at The Red Bull, Butt Lane, Kidsgrove, Staffs. 8.30 pm. ?)
	Waterways Swallet, Derbyshire.	Car park maintenance, and underground trip.
	Easegill, Yorkshire: Wretched Rabbit to Easter Grotto.	Outstanding, extensive system, with many route choices. SRT.
Mon. 2 nd Dec.	CCPC Monthly Meeting. (Also available to Members via 'Zoom').	(? Upstairs at The Red Bull, Butt Lane, Kidsgrove, Staffs. 8.30 pm. ?)
	Gautries Hole, Perryfoot, Derbyshire.	An under-rated cave system with muddy crawls and squeezes.
	Perhaps a good day for the Annual Christmas Walk ? Any suggestions ??	Dove & Manifold area ? - includes Ecton Mines.
Mon. 6 th Jan. 2025	CCPC Annual General Meeting, followed by the Monthly Meeting. (Available to Members via 'Zoom').	(? Upstairs at The Red Bull, Butt Lane, Kidsgrove, Staffs. 8.30 pm. ?) We are seeking a better venue.

Please Note: Re use of material from issues of the CCPC Newsletter - all rights are reserved, and no part of this Newsletter may be reproduced in any form, or reposted, without the prior permission, in writing, from the editor, and/or original copyright holders. **Steve Knox, Editor.**



Derbyshire Cave Rescue Organisation: DCRO team members including a number from CCPC, continue to be ready to assist whenever required, and regular team training continues.

<https://www.facebook.com/DerbyshireCaveRescue>

Latest Call-out: Friday/Saturday, 13th//14th September :-Search and recovery of two cavers in P8, following a fall by one. Both recovered safely. Brilliant work by the team !

Petzl Duo - Lithium Battery Conversion:

Jenny Drake

The Petzl Duo head torch was introduced in the early part of the century and was sold for many years. It was eventually replaced by a much-altered version, which never had so many sales to cavers. The original Duo provided cavers with a basic, but robust lamp, powered by four AA batteries in a rear battery box and many are still in use. Initially, the lighting was provided by two incandescent bulbs. As white LED lighting arrived, both Petzl and other manufacturers provided replacement LED options with increased light output, reduced power consumption and user selectable light levels, from “tired glow worm” to “vaporise bulldozer at 20 paces”.

I've had several Duos. In general, they are very good lamps, but have a few weak design features. In particular, the way the wires between the battery box and lamp housing are attached to the stainless-steel conductor strips at each end. These use insulation displacement to connect to the wire strands inside. The joints degrade over time and eventually go open circuit. The Duo isn't designed for easy repair and making a replacement joint isn't simple. Soldering to stainless steel is hard. Getting access distorts and damages parts, making them tricky to get working again, particularly the switch on the left-hand side of the light housing. The yellow plastic lamp and battery housings however are seemingly indestructible, so these are the bits worth retaining in an upgrade. I don't know what the plastic is, but if cars and aeroplanes were made out of it, instead of metal, we would no longer worry about crashes!

After my Duo failed on a couple of trips, I decided to attempt both a fix and an upgrade to using Lithium batteries, instead of AA cells. This would give more battery capacity and a longer run time. I would also replace the now dodgy Petzl switch with a new external one, between the battery case and lamp.

The first step was to remove all the internal parts from the lamp housing. A mixture of brute force and care was needed here. Although you have to pull quite hard to overcome the clips that hold everything in place, you mustn't damage the housing. Similarly, the yellow battery box is stripped of the internal black plastic AA battery housing and stainless-steel battery to battery spring connectors. Some of the projecting yellow plastic clips and locating posts in the bottom of the case were ground down with a Tungsten Carbide burr in an electric drill to give more space for the new batteries. Again, taking great care not to damage the case itself. While everything was in pieces, I polished the front lens with Brasso metal polish to remove years of scratches and improve light transmission. This is something worth trying on any lamp with a plastic lens that is a bit scratched. It can make an amazing difference to the light output.

I replaced the four AA NiMH batteries with a pair of new 18500 2000mAh cells. It is possible to use a pair of unprotected 18650 batteries, but they will only fit in at an angle. 18500's are a neater solution, as being only 50mm long they will fit in the Duo case vertically. It is possible to fit in three 18500 cells and still leave space for the necessary electronics. The cells were wired together in parallel (1S2P), giving a nominal 3.7V output. If possible, get cells with

nickel steel tabs already spot welded on to each end, as these are much easier to wire up and you don't risk damaging the cells with soldering heat.

Lithium batteries must be treated with care, as overcharging, excessive discharging, taking too much current, or physically damaging the case can permanently harm them and even cause a fire that is very difficult to extinguish. Not something to risk when it is on your head! I used a self-resetting fuse in the positive lead from the battery pack to protect against short circuits. The charging and discharging are handled by a simple circuit board module, based around the 4056 integrated circuit, that has a micro-USB socket for charging at 1A. This takes around 4 hours to fully charge the two cells from flat. The module automatically disconnects the batteries when charged, with an LED indicator of the charging state. It will also disconnect the lamp unit if the voltage from the batteries drops too low when discharged. The lamp must be off when charging, as otherwise the module may overcharge the cells, but that is the way that lamps are usually charged.

In the lamp unit, I have a Custom Duo twin LED module, which has given years of reliable service. This is designed to work with either NiMH AA batteries, four of which give 4.8V, or alkaline cells that can give up to 6V. The output from the Lithium batteries is lower than this at a typical 3.7V and the Custom Duo module will assume the batteries are going flat and switch itself to power saving mode, that gives only a dim "get you out of the cave" glow from one of the LEDs. To get round this, another circuit board module was used to boost the voltage from the Lithium cells up to around 5 to 6V. With much of the internal components removed from the headset, the boost circuit board can be fitted there instead, behind the Custom Duo module. The leads out of the voltage boost board are soldered to the input pins for the LED module. Removing all the internal gubbins from the lamp housing means that the Duo switch will no longer work. I experimented with trying to actuate a small microswitch from the internal switch spindle, but eventually decided to replace the lot with a small toggle switch in the lead between the headset and battery box. A length of old cycle inner tube is used to provide some degree of water proofing, sealed at each end with cable ties. The switch lever can be felt with fingers through the tube. With practice the switch can be toggled off and on with quick flicks that are sensed by the Custom Duo module to change lighting modes.

The converted Duo has been tested in a spectacularly wet Giant's round trip, where we saw flowing water in the upper series in places we've never seen it before!

Advantages of the Conversion

- Gives an old Duo a lease of life and more caving!
- Nearly 50% greater run time at any light setting. 14.8Whrs, compared with 10Whrs of available energy with a set of rechargeable NiMH AA cells. I can get over 7½ hours run time on my usual higher setting with both Custom Duo LEDs lit. Longer for less bright settings. There is space for a third 18500 battery in the Duo case, so another 50% jump in run time is easily achievable. Higher capacity 18500 cells are available too. The batteries are removable, so a spare set in a waterproof case could be swapped underground.

- Reliable switching.

Disadvantages

- When the batteries are nearly flat, the light will go out, rather than fall in to a dim power saving mode. In practice, when the voltage from the cells is starting to fail, the buck boost converter used to provide 5 to 6V to the Custom Duo module falls below its minimum operating voltage, leading to the LEDs flashing on and off, which gives you some warning.
- The toggle switch takes a little getting used to initially.
- You can buy AA batteries in almost all places on the planet. Lithiums need a power source to recharge, but this could be solar, from a power pack, a vehicle, or any source of 5V USB power, so expedition use should be fine in most locations.

Parts list:

- Batteries: 2 , or 3 of 18500 size cells, with welded tabs. For example:
<https://www.ampsplus.co.uk/ampsplus-18500-2000mah-5a-3-7v-battery>
- Charging module:
https://www.bitsboxuk.com/index.php?main_page=product_info&cPath=347&products_id=3538
- Voltage boost converter:
https://www.bitsboxuk.com/index.php?main_page=product_info&cPath=347&products_id=3219
- Self resetting fuse (this is 2.5A, which would be better than the 5A one I used):
https://www.bitsboxuk.com/index.php?main_page=product_info&cPath=214_215_222&products_id=3548
- Toggle switch:
https://www.bitsboxuk.com/index.php?main_page=product_info&cPath=116_127&products_id=872
- Small piece of Veroboard to mount the battery connector and the fuse:
https://www.bitsboxuk.com/index.php?main_page=product_info&cPath=238_244&products_id=1855
- Three pin right angle PCB header for the battery connection. Remove one pin at the end for some reverse polarity protection:
https://www.bitsboxuk.com/index.php?main_page=product_info&cPath=225_230&products_id=2542
- Three pin socket for the battery connection. 3 pins are used to give some reverse polarity protection. Use the centre pin for positive and one of the outer pins for negative:
https://www.bitsboxuk.com/index.php?main_page=product_info&cPath=225_230&products_id=1638



There is a toggle switch hidden inside the length of cycle inner tube. Easily operated.



The lamp housing, emptied of almost all the original gubbins, except the cable gland and the operating rods on each side for switch control and incandescent bulb beam focus. These are retained for their built-in waterproofing. The buck boost voltage step-up module is soldered to the input wires from the battery pack. The Custom Duo module was wired up to the output pads on the right-hand side of the circuit board. If the Duo switch and power distribution stainless steel stampings were still working well, then they could continue to be used, but the step-up module would need to be moved to the battery case, and this would take up the space needed for a third cell.



The new batteries on charge from a micro-USB lead. The electronics have been pulled up to show the connection for the battery pack on the left, the charging module on the right and the self-resetting fuse sandwiched between. You can see the space available for a third cell.

As someone who struggles to put LEGO kits together, I'm not sure I would dare to try this, but I know we have some very technically-bright Members out there. Please give this a go if you have a duff 'DUO' lying around, and let us know how you get on. It sounds amazing !!!

Ed.

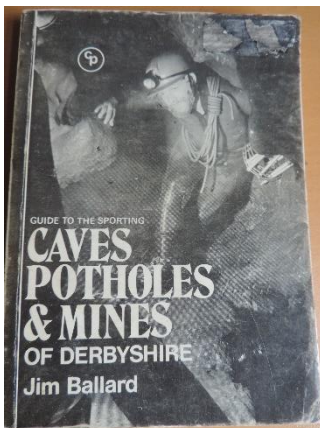


Knotlow Cavern : 1982

Alan Brentnall

Before I start reminiscing, I'd like to report (to them as don't yet know) that four weeks ago I finally came face-to-face with Eric Bloodaxe, at the Royal Infirmary in Edinburgh, and had all my coronary arteries re-plumbed with new by-pass vessels. I'm now back home in Strathpeffer, recovering well. In two weeks I should be OK to drive again, but it will be at least another eight weeks before the bones of my thorax will be healed enough to even think about easy caving. Until then, I'm more than happy to read all the trip reports you lads and lasses send in to Steve Knox every month – it's what keeps my flame alight!

And reading Gaz's un-put-downable write-up about his solo trip to the dreaded Crimbo Swallow in Knotlow brought back quite a few memories – not about Crimbo (Pipe or Swallet) as that is probably fixed on my to-do list, or should I be more accurate and honest and say my probably-never-to-do list. No, Knotlow was my first ever foray into caving in the Peak District. It was July 1982, and all my caving experiences over the previous seventeen years had taken place in the Yorkshire Dales – after all, I was born and bred in Bradford – where else would I go? Yes it was July 1982, and it was my son Kevin's first birthday, and the plan was to have a family camping weekend in the Peak District with my caving mate, Pete and his wife. We were to camp behind a pub in Bradwell which is called the Bowling Green nowadays, but, back then, I'm sure that it was called the Thatcher's Arms, and, while most of the weekend was dedicated to walking trips, Pete and I were granted an afternoon's caving on the Saturday.



It would be another couple of years before Trevor Ford and Dave Gill's "Caves of Derbyshire" was published, so we were relying on an old copy of Jim Ballard's "Guide to the Sporting Caves, Potholes & Mines of Derbyshire" (1974) for information – and, looking at my old copy of this book, it was very thin on caving venues in the Peak District, but caves and mines which were included were reasonably well documented. A quick read of the book revealed that we should be able to "bottom" Knotlow Cavern with the four ladders and three ropes which we had borrowed from the Outdoor Club of our employer (Provident, in Halifax) on a more-or-less permanent basis. The only other pre-requisite in those days was a visit to the Sweet Shop in Monyash to pick up an extremely odd-looking device which we were assured would "unlock" the lid of the mine – absolutely

nothing like the Derbyshire Key which all Peak cavers carry these days, in fact absolutely nothing like anything I've ever seen before or since.

In 1982, we had yet to start using SRT (that would occur at a Whernside Manor course, two years later) so we were still using electron ladders. But we had moved forward slightly on the tech front by adopting a self-lining method for vertical pitches. Later discussions with the 1980s SRT expert, Dave Elliott, on the subject of self-lining, revealed that descent was usually done by abseil, but we didn't know this at the time. Our harnesses were the standard caver's belt, to which a Clog ascender (you know, the one where you have to un-krab the device your life depends on to pass a knot!) was attached with a short length of Perlon – going up or going down was achieved by making the ladder-move, and then sliding the Clog to a new position.

So, having unlocked the only lid which would fit our peculiar device, we fastened together the first two ladders and lowered the resultant length into the mine shaft. The pitch proved pretty straight-forward, and we were soon down to the foot, having lowered the other ladders and ropes. It says in the guide that the Pearl Chamber pitch which follows can be belayed to a thread, but I'm pretty sure that we

clipped the third ladder to the bottom of the second and carried on down a fairly “lumpy” pitch which could be mostly scrambled until the final, short, free-hanging section. Unfortunately, Ballard’s book contained very few rigging diagrams or surveys, but it did say, and I quote, “The route from here is obvious, and runs through an area of stacked deads.” Little did I know that twenty years later I would spend at least two long sessions on these stacked deads helping other DCA volunteers to preserve their integrity and the safety of the passage. Ballard’s text goes on to say, “Climbing down again, several descents lead to a level. The sound of a waterfall can now be heard, and it is a relatively easy job to locate the head of Waterfall Pitch”.

Well, as soon as we heard the waterfall, a level went off to the right, and we thought, “Easy-peasy yeah!” but I know that you will smile when I tell you that the level had an iron chain stretched across its entrance. But we weren’t to know that there were two routes to the same waterfall, were we? So, we tied on our last rope and chucked it through the short level to the pitch. I uncoiled the ladder and Pete, who was now clogged onto the rope, fed it down the pitch and started to self-line down into the blackness. After ten to fifteen minutes, Pete’s head re-appeared at the top of the pitch. “The ladder’s not long enough – it’s miles off the bottom,” he announced, “And I can only hear the waterfall, I can’t see it. This must be wrong!” So we de-rigged the pitch, rolled the ladder, plaited the rope and returned to the “obvious” route from which we had deviated and followed it down more climbs to the Waterfall Pitch itself.

If you’ve only ever done this pitch using SRT, you will know that the actual waterfall can be successfully avoided by rigging the rope through a traverse line of bolts to a fine descent which is usually well out of reach of the spray. But, in 1982 (and the several decades prior) such traverses had yet to be invented. “Wet pitches” were what proper pot-holers did! No ifs, no buts! Just get on with it! So we hung the ladder straight down through the water, and Pete started his descent, painfully slowly, self-lining his progress downwards. His lamp, a NiFe cell, if I remember correctly, dimmed ominously and, as I watched it getting lower and lower, I thought to myself, “By ‘eck! That looks cold!” Progress suddenly stopped, and the light shone upwards and began moving in the same direction, until a very shivering Pete reappeared at the pitch head. “Sod that, for a game of soldiers! I can hardly see through these glasses.”

Just to remind you, we were still in the habit of caving in boiler suits over woolly rags, and Pete was now frozen to the bone, carrying at least his own weight in sodden woolly jumpers. “Shall we give it a miss?” I suggested, hopefully. “Well, you can,” said Pete, “I think I’ve done as much effing Waterfall Pitch as I’m going to do today. Let’s call it a do!” I readily agreed to the new plan, and, while Pete cleaned the water from his glasses, and started jumping up and down to get his body back up to heat, I re-coiled the ladder and re-plaited the rope for the second time. Retreating, we soon warmed up, and very quickly arrived at a small chamber below a blocky climb. Pete pointed out that this was, according to the guidebook, where the Bung Series goes off, and might it be worth a quick look-see? Leaving the rope and ladder in the chamber, we set off into a small-ish crawl, and, as ever, Pete went first and, after a short pudgy bit, the passage rose up and he crawled over a short bulge, stopped and reversed to where I was. “It’s a caver’s nightmare!” Pete said, “Low, tight and very wet. I think that you really should have a look!” Well I couldn’t really refuse, could I? Not after everything Pete had been through.

The bulge, which I later knew as the Bung, was smooth, but a little tight at the top. I was a wee bit slimmer than Pete, and the squeeze wasn’t too bad, and I was soon sliding forward into the water on the other side of the Bung, where I needed to turn my head and helmet through 90 degrees as it was quite low, and the result had one of my eyes and one of my ears under water. But, thankfully, it didn’t last for long and soon I was in (marginally) bigger stuff and turning right and crawling as far as what I think is called the Standing Room. By this point, Pete caught up with me, and we agreed that “It were nowt!” but we decided that it would be better to turn back now, while we could, and leave the Bung for future forays.

So ... that was my introduction to Derbyshire Caving. In those days I was still living in Midge Hole, at the foot of Hardcastle Crags above Hebden Bridge, and little did I know how much of my future life would be spent living and caving in the Peak District. Since then I have had so many varied trips into the Monyash Mines – including a bleak winter spent trying to dig through Matt Ryan’s old dig (the one with the aerial glide) at the bottom of the Wharf Climbing Shaft – and each trip has been different and, in its own way enjoyable. Many thanks to Gaz for his trip report and photographs which kindled these old memories of mine!

Alan Brentnall

.....
It's good to know that Alan is making such good progress with his recovery. We all wish him well. Ed.
.....



Notts Pot II

Saturday, 24th July 2024

Only three out for this one, Neil, Rob and myself straight off a night shift but unwilling to miss out on another Dales experience after missing out on the Ghyll to go looking for waterwheels.

The drive up was really good considering it was a bank holiday weekend but as we passed Lancaster the skies blackened and soon after the road enveloped a cloak of invisibility as the heavens opened and the animals in the fields nearby marched two by two towards the ark sitting nearby in the Morecambe Bay.

Thoughts now turned to the likelihood of the streamway being flooded but after the initial deluge the rain turned to heavy showers and during a gap in one of them we donned our oversuits and hurried to the lid which was fortunately very close to the road.



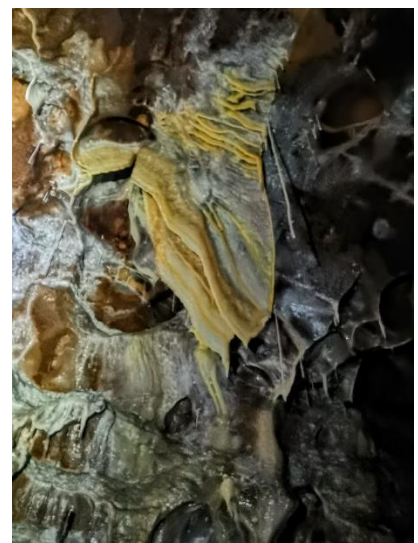
Escaping the midges, we threw ourselves into the ramshackle shaft and down the mosaic of random building and shoring up techniques that hold this wonder of caver engineering together. As an electrician I have seen some interesting uses for oddments of cable but I'm pretty sure it's only ever been used as a scaff clamp in here!



The explore itself was very basic, there are no hidden nasties in this cave, you go down to the streamway turn left and follow it to the sump in Kleine Scheidegg, or right, and up through the Hansel and Gretel like candy-covered water caverns.

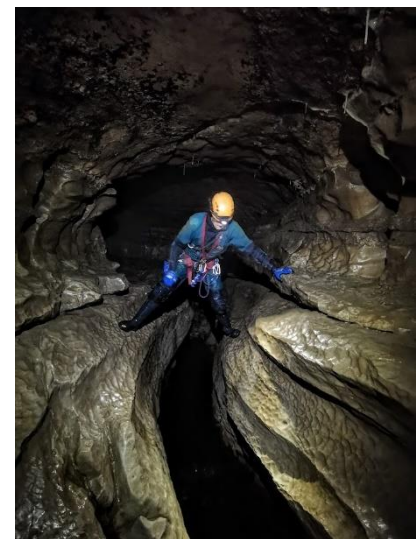


Taking in some of the side passages on the way we totally missed the connection with Lost Johns even though we climbed up to it, and also found some digs, pretty, but mucky avens, and Rob even used up a bit of extra energy by climbing a fixed rope to a promising looking dead end in the roof.



The river in the cave is pretty much a biblical river of blood the deeper it gets the more like a gore fest it becomes but its horror factor is far outweighed by its pretty factor and round every bend and on every level this bad boy is very pretty ! Formations of every description adorn the passages, some resembling tree trunks some erupting volcanoes and one resembling the most radioactive thing in the world currently covered safely under a sarcophagus in the Ukraine.

And then there is Vlad! Possibly the reason the river runs red this six-footer with the wings of a dragon hangs alone in the passage ominously waiting for a victim to impale should it ever choose to release its grip as an unsuspecting caver passes by.



We spent about four and a half hours underground and when we popped up from the hole the sun had come out and the horizon had cleared to reveal the most beautiful vista all the way from Blackpool to the mountains of the Lake District.

A beer before the drive home, most of which I slept through, thanks to the thirty-two hours of sleep deprivation but nothing that I wouldn't do again for a good day below.

Thanks Neil and Rob for a great trip and great company and for the rest of you, you missed a cracker.

Link to the Pretties is here, Niel asked in the pub how many pictures I took, I said not many, about one hundred and fifty, the final tally was four hundred and ninety-five.

These are the best: <https://photos.app.goo.gl/JoTB2vV2dJPw9iwdA>

Gaz McShee

