

University of Leeds Speleological Association

Investigation into incidents at Diccan Pot, North Yorkshire 3rd and 4th November 2007

Background

During the weekend 2nd/3rd/4th November 2007 some 50 cavers attended an event at the 'Pennine Hut' in Selside. Several different caving trips occurred over the weekend. Diccan Pot had been pre-rigged on the Friday night. Two separate trips to Diccan pot on the Saturday and the Sunday resulted in moderately experienced cavers being 'strung up' on wet pitches for considerable periods of time. The incident on Saturday resulted in a call out by the Cave Rescue Organisation and the caver involved was escorted to the surface.

Aims and Objectives

To establish the facts concerning the incidents.

To identify the factors which caused the adverse incidents.

To analyse how those factors may have been overcome.

To establish what reasonable measures could be put in place to prevent similar incidents from reoccurring.

To enable these measures to be implemented within the club.

To promote a learning culture within the club and a template whereby adverse events can be objectively analysed in a non-threatening way.

Ground Rules

The analysis shall focus on identifying processes that went wrong (or right!) and to avoid blaming individuals.

It shall be acknowledged that individuals involved may be upset by the incident and efforts be made to support them.

The editor reserves the right to seek clarification about the meaning of submissions and edit them accordingly.

A summary of the report may be published by the club and made public as an educational resource for the wider caving community

Information made public will be edited to protect the identity of the individuals involved

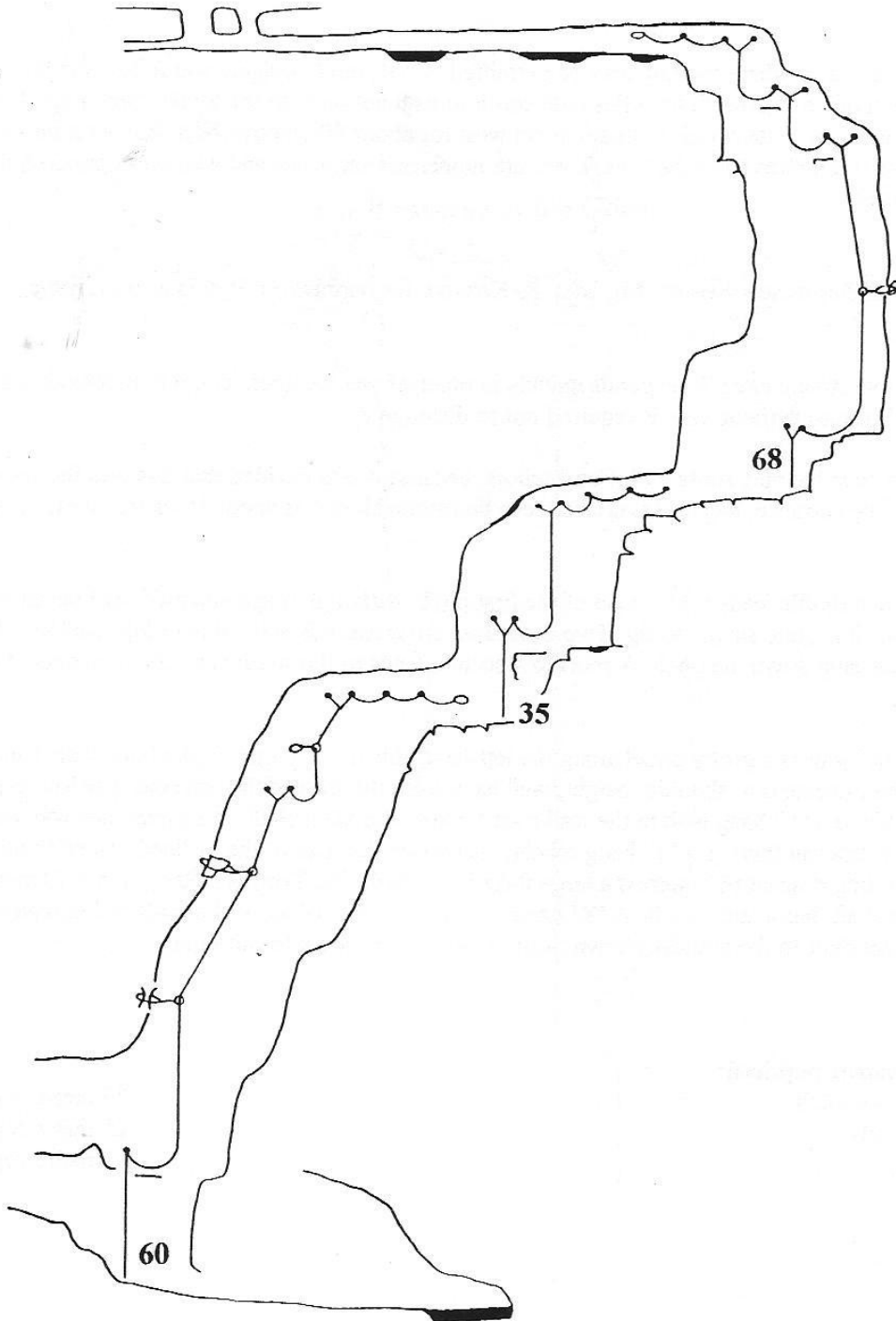
Description of the cave

Diccan Pot is part of the Alum Pot system. There are four pitches separated by very little caving passage giving a total length of 91 metres and a depth of 108 metres terminating at the Alum pot sump. It takes a large stream which is very noisy throughout the cave. The SRT is technical in order to keep out of the water. The cave is very draughty and there is lots of spray from the waterfalls providing so cavers can get quite cold.

Rigging Toppo from CNCC vol 3:



Diccan Pot



Rigging Trip 2nd November

Members

Caver A [Caving for 6 years has done reasonable amount of caving and SRT previously. Have descended Diccan Pot once before in wetter conditions 4-5 years ago. Has not attended any ULSA club trips in last two years]

Caver B [15 years caving and potholing experience. Extensive experience in other roped environments]

Brief Summary of the trip and/or key factors

Caver A:

Forecast was checked before weekend and was predicted to remain dry.

CNCC rigging guides were checked for rope lengths and number of anchors needed.

Arrived at entrance and rigged first pitch to thread and four P-bolts; two of these were used in the roof for a Y hang which hung the rope directly in the line of the water. Caver A clipped fixed traverse line and continued placing two deviations both in awkward positions but kept the rope out the water. Re-belays were considered but not used. Caver B pointed out that it was re-belay rather than a deviation in the CNCC rigging guide but both continued without the rigging needing any change. The rest was rigged high and tight- the last pitch having two re-belays rather than deviations.

On returning up the pitch caver A placed a third lower deviation, to help keep caver B dry. Caver A ascended pitch, unclipped the last deviation and swung into the waterfall, then pushed out again re-clipping the fixed traverse line to keep dry.

Caver B ascended and immediately clipped into the fixed traverse line, preventing a swing into the waterfall.

Caver A commented on 'getting a pasting' on first pitch to Caver G later that evening.

Potential Risks identified.

There is some controversy regarding the suitability of the rigging as the following comments illustrate.

“Fixed traverse line must be used to descend to first deviation and on returning back up pitch when rigged in this way, information was not passed on. All deviations were difficult to pass.”

“I’ve heard some ranting about the rigging of Diccan. As far as I’m concerned, the cave was rigged adequately. There has been some criticism of the rigging of the first pitch where the fuck-up on Saturday started to unfold. With aid of the retrospectoscope, if I knew that someone with limited experience was going down the cave, maybe a more conservative approach to the rigging of the first pitch would have been appropriate, but see point made above – that person should not have been down Diccan in the first place. I also gather the rescued individual had problems lower down the cave where long pendulums are required to get to get to rebelays/deviations, so putting all the rebelays/deviations in the first pitch may well have not averted a callout. Maybe [the rigging team] should have communicated the rigging better, so people could have made better judgements”

Diccan Pot trip 3rd November 2007

Members

Caver C [Intermediate level. Has been caving for 2 1/2 years and completed trips of all grades, mainly in Yorkshire Dales. Basic rigging experience but no training in rescue techniques. Has not been in Diccan Pot before this trip]

Caver D [Caving for about a year, moderate experience plus SRT experience]

Caver E [Started September 2006 caved weekly for that university year, comfortable with SRT]

Caver F [Caver new to the club with experience in Fell Rescue and Caving]

Brief summary of the trip and/or key factors

Caver C:

Caver F and I developed the plan to do a trip down Diccan Pot on Saturday morning. The route had been rigged the previous day so an exchange trip with Alum Pot was possible. In order to exit Alum Pot (in case that the group that was rigging Alum Pot on ladders would for some reason, not reach the bottom) we planned to rig the SE direct descent before we went into Diccan.

While we were preparing the gear, we were approached by cavers D and E which asked to join us on the trip down Alum Pot because they had done the route through Long Churns previously. I knew cavers D and E from the previous academic year and had been on some club trips with them, so I did not see that they should have any difficulties with the Alum Pot trip.

We set off to rig the SE route (I rigged) but noticed that our slings were not long enough in order to avoid rubbing on the second tree which is commonly used as a belay. Also, the tree seemed to have been attacked by wood boring organisms so that the whole approach was seen as unsafe and we abandoned this part of the trip.

By then, we were thinking what else we could do since cavers D and E were still with us.

Both were equipped with PVC oversuits so I saw no problems for them getting cold during a trip down Diccan, especially since we only planned to descend; we reckoned the trip should not take more than 1 – 2 h to complete, so I offered cavers D and E the opportunity to join us. Caver F shouted down to the group rigging the ladders in Alum to make sure they would rig the bottom pitch of Alum for us to get out (originally we were supposed to leave an SRT rope on that pitch).

I showed cavers D and E a hand-drawn copy of the rigging toppo and described re-belays and deviations and pointed out that the cave was both technical and cold/wet. However, I did not expect them to have any fundamental problems with the SRT.

I descended first, leaving caver F to deal with any difficulties that might emerge since I expected communication from the bottom upwards to be impossible. I arrived quickly at the bottom of the first pitch and waited for caver D to follow me. After waiting for 10 min I started looking out for caver D and saw D's light on the top of the pitch. D obviously had problems with the descent and did not arrive on the bottom until 30 min later. During that time I shouted "rope free" several times to make sure that D was not waiting because D thought that I was still on the rope (before I descended, I told everybody that I would only shout "rope free" at any point they would hear from me because the noise in the cave would make any other communication impossible anyway). I talked to D after her arrival and D told me that she had experienced problems on one of the deviations but that she was fine and could continue.

We shouted rope free several times because we could not see anybody descending from above but was not sure about that because of the poor visibility [I suppose that E and F had already left at that point]. After a further 20 minutes I assumed that E might be in greater trouble on the top pitch. I got the information that probably all deviation karabiners were back in place so I took the risk of trying to climb back out in case that F would not be able to help from the top. I did not want to exit with D straight away in case E would have reached the bottom in the meantime but would not have been followed by F. After a long climb in the water (I did not get to the top) I heard voices so I descended back down. Little later, caver K joined us. Caver D had got cold in the meantime and had very serious problems in tackling the SRT in order to get to the bottom, but finally arrived with interventions by caver K.

Caver D:

About half an hour into the trip there was a pitch down a waterfall, with deviations. I followed Caver C. Cavers E and F were behind me. At the first deviation I got confused over the correct procedure and was unable to get assistance due to the noise of the water. Because of this I went off course into the waterfall but carried on down. I took a while getting down, being a bit disorientated due to the water, again getting confused at the deviations, and having to stop to empty my wellies to stop them falling off! Cavers E and F could not hear me to check I was ok so became concerned and left to get help. I made it to the bottom and waited with caver C for the others, who had presumably already left the cave. Cave rescue were at the bottom of the cave and assisted me out. An Ambulance was available but medical treatment was not needed.

Caver E:

SRT trip down Diccan then out of Dollytubs following a failed attempt to rig the Alum Pot main hang due to lack of sling.

(The original plan was that D and E would go down and up Alum with C and F, then decided whether to do Diccan or not – since we knew it was a harder cave. We probably would have done Diccan but the original plan would have meant any problems with SRT would have been identified before being in a situation in which people could not communicate)

D had not done SRT for approx. 6 months and deviations and re-belays were discussed at the top of the first pitch. C descended Diccan first. D followed but struggled with and took out the first deviation due to forgetting the technique? F called instructions but, due to the noise of the water, it was very difficult to hear or be understood. F put make-shift re-belay in with sling and krab in place of first deviation. E and F believed D had needed a deviation 'practice' and would be fine after this. D took out second deviation at which point E and F were totally unable to communicate with D. Following this E and F could no longer see D. E and F believed D was possibly under the waterfall. E went out of cave to look for cavers to help. Unable to find anyone, E went to call CRO although on the way E met K and another caver.

(Although no-one on the trip had been down Diccan before C did have a plan of the pot and we went over it before and knew what to expect also that we wouldn't be able to talk and planned to meet at the traverse section— and knew that this was a very wet cave— this definitely had some effect on our conclusions that D was probably under a waterfall.)

Caver F:

Myself and one other caver (C), who I had caved with several times before decided that due to time constraints we would do a quick trip down Diccan. We decided to rig the main pitch of Alum as an exit route. We collected the kit and proceeded to rig the main pitch. On route we were joined by two other cavers who I had not met before (D & E) who said they wished to join us. D and E initially wanted to descend the main pitch of Alum. We couldn't do this as we didn't have a sufficiently large enough sling to avoid a rub point. We therefore ascertained that Alum was rigged from the bottom up to and out via Dollytubs so we could exit this way.

C and I discussed alternatives and settled on Diccan knowing that it had been rigged the previous evening. We asked D&E if they wished to join us and they agreed.

I was aware that Diccan was a wet cave and potentially very committing depending on the amount of water. I was fully satisfied with my own ability to cope with this based on previous committing SRT trips but was concerned about the two cavers I did not know. I therefore stopped the group before pitch head to discuss the trip. I described what I knew about the cave and said that we needed to discuss our plans given that this might not be possible during the descent due to the noise on the pitches. Caver C agreed and produced the schematic and suggested we would need to descend all the pitches quickly. I asked the two cavers who I didn't know if they were competent in SRT under the described conditions - deviations etc. They both said that they were and that they were happy to proceed. We reviewed schematic again and decided C would lead and I would go last.

C descended the first pitch and shouted rope free. D followed, reaching first deviation where they started to encounter problems. They seemed to spend a long time at this deviation and finally unclipped the deviation and swung under waterfall. I anticipated this as potentially dangerous for any length of time and pushed rope from under water and attached temporary deviation to support weight in this position (sling & Krab - assisted at this stage by E). When clear of water I shouted D to check whether they wanted to come back up or continue. I was not sure if I was heard and D started to proceed to the next deviation. D then unclipped the next deviation which resulted in another swing below waterfall, this time out of sight. At this stage I became concerned and asked E to go and get help recognising that D was now potentially in a serious position which may need more than two people to resolve. E left. Several minutes later D shouted rope free. I was

very relieved. I immediately exited the cave to find E and cancel the call for assistance.

On exiting the cave I found three ULSA cavers who I had met that morning, all unknown to me. I explained what had happened and asked if one of them could help me re-rig the pitches. One caver (A) followed me into the cave. When we reached the pitch head the rope was weighted. A left the cave immediately and I followed to the entrance at the entrance he explained to the others that he thought D was still on the rope. He explained what he intended to do to the group. At this stage another caver arrived and said he would go into the system from below to check. A went back into the cave with two others and myself and then went down the pitch....

At some stage later we learnt that D had in fact reached the bottom and the weight on the rope discovered earlier was C trying to re-climb and re-rig the pitches.

Upon leaving the cave CRO and the police were in attendance and a number of us briefed them on the situation. They were most concerned that we couldn't give an account of which other cavers, a part from the party in questions, were currently underground.

I later left and proceeded back to the hut to check on E who I had heard earlier was quite upset.

Potential risks identified

“As with a lot of near-misses, the reason for callout was multifactorial. Communication is probably the key to avoiding in the future.

No-one took overall control of trips – this must be someone experienced, as the vetting of inexperienced potholers is required. If asked, I don't think that I would have recommended that Caver D went down Diccan, given her lack of exposure to difficult, strenuous, wet SRT.

Other aspects to consider – not only training in SRT should be documented, but caves using SRT completed should be documented, for first year? Discuss.

No list of cavers underground, vital statistics e.g. novice/experienced, car number plates, callouts, contingency etc. Again, basic. This is what made us look like a tit with CRO more than anything. This is essential.”

“Deviations were taken out for following cavers and Caver D was left in a vulnerable position in the waterfall's path.”

And similarly

“D could have swung under waterfalls and not been able to breath after taking out the first two (and subsequent) deviations.”

“Caver C failed to recognise that caver D had not had enough practise in SRT in the previous months for managing this technical trip right away (although in my opinion she had had enough experience).”

“Caver C failed to make sure that the Alum Pot rigging group had full knowledge of our change of plans.”

“The cancellation of our rigging trip down the SE route meant that D and E could not practise their SRT prior to the Diccan descent. Possibly, D should have been taken on another trip instead of Diccan which to our full knowledge was difficult, but water levels at the time were low so that I did not see it as more dangerous than other SRT trips D and E

had been on before.”

“The attempt to climb back up the rope was dangerous because I could not make absolutely sure that all deviations had been put back in place. Also, it would probably not have been of much help had E really been on the rope, although I saw a dilemma there between the real risks of climbing up and the potential consequences of doing nothing.”

Suggested learning points.

Nominated experienced caver to orchestrate underground activity for each official club trip.

For a club weekend meet of this size (4+ trips going on), a list should be left in the hut with names/trip to make sure that no party ends up stranded and without callout.

Mobile whiteboard for those underground. (if you were going to do this properly would have list at cave and minibus, as navigating across the open fell is also a hazard!)

Cavers without recent SRT practise should refresh their knowledge on a trip during which the more experienced cavers can give instructions at critical points (that was impossible in Diccan due to the nature of the cave).

And Similarly

Caver D- I should have checked I could remember all the SRT techniques before descending.

In retrospect, D, being slightly unsure of SRT after a lengthy gap should not have attempted technical SRT in a situation in which no-one was able to communicate with D, to give help if needed, due to the noise of the water. Also, not in a situation in which the taking out of deviations could potentially result in said caver swinging into waterfalls.

(I don't mean to blame D but can't find any other way of saying this!)

Maybe there could be an SRT refresher for those who haven't done SRT for a while.

Cavers without rescue training should not take less experienced cavers with them unless such practise has been done or possibly not at all?

These cavers should seek prior advice from older members about the nature of the trip taking into account all people on the trip not just themselves.

Need to discuss later in year. ?need a safety officers, need to determine required experience for planned trip and vet those wanting to go underground accordingly. If are going to chart SRT experience, this needs to be a maintained + recorded regularly – taking advice from the Leeds Subaqua club could be appropriate. ?crossover with tackleofficer (could also record state of ropes/SRT kit (will need more rigorous labelling system for kit))

Initial Rescue Party

Members

Caver K [Caved regularly since joining ULSA in 2000. Good SRT knowledge (including rigging and rescue techniques). Have taken part in organised rescues in both the Dales and the Spanish Pyrenees.]

Caver A [Caving for 6 years has done reasonable amount of caving and SRT previously. Have descend Diccan Pot once before in wetter conditions 4-5 years ago. Has not attended any ULSA club trips in last two years]

Brief summary of the trip and/or key factors

Caver K:

Before entering Diccan Pot, caver A and I discussed the best course of action. Based on the information we had received from Caver E (I received no information from Caver F although he was on the surface when I arrived) we were both fully expecting a caver on the rope who would need rescuing without any assistance from themselves.

We had obtained a long rope (>100m) enabling us to re-rig the first pitch in Diccan, abseil to Caver D, attach D to ourselves and cut the original rope. This would allow us to abseil safely and quickly to the bottom of the pitch with D.

I entered Diccan to assess the situation for myself from the top of the first pitch whilst caver A packed the rope into a tackle sack. When I reached the top of the first pitch the rope was loaded, and there was no response when I called down the pitch. The pitch looked to have been rigged in an odd manner, with no deviations/rebelays apart from a sling between the rope and the in situ line at the top of the pitch. The rope was rubbing over the edge of the rock lip at the top of the pitch. Later on it became apparent that the rigging of the pitch had been altered by D descending the pitch.

Shortly after arriving at the pitch however, there was a cry of 'rope free' from below (this had come from Caver C, although I could not tell that at the time).

I decided to descend the rope before the arrival of caver A, knowing that he would realise the situation had changed when the rope was not loaded when he arrived at the top of the pitch. On inspection of the rope on the first pitch it was still in good enough condition for me to descend, although there was some wear at the top. As I descended the pitch I re-rigged the rope through two of the three available deviations on the descent providing (as far as is possible in Diccan) a reasonably dry hang.

At the bottom of the pitch I found C and D continuing onto the second pitch. I checked whether both were ok and the both said they were. It seems that D had struggled passing the deviations on the descent of the pitch and had only managed to descend the pitch very slowly and by removing the deviations altogether. This had meant her descending through the water to the base of the pitch. C had tried to prussik up the rope to replace the deviations but had been repelled by the force of the water (as the rope was at that time hanging in the water). I offered a balaclava to D who refused, as at that time she was warm enough.

Both C and D wanted to continue, and so I prussiked to the top of the first pitch to send the message for the CRO callout to be cancelled and give the all clear. Here I met Caver A who duly arranged for the information to be passed to the surface and onto CRO. I decided that if C and D were to continue their descent of Diccan I should accompany them and so descended the pitch once more. At the bottom I met with Caver A who followed me down the first pitch. We discussed the incident and it was decided that Caver A would re-rig the pitch with the new rope (as the original rope was a little worn from the friction over the edge) and I would accompany the others to the bottom of the cave and out of

Alum. A provided me with a spare balaclava, which later on in the trip D accepted.

Continuing on through Diccan it became apparent after another pitch that D was struggling with the SRT at every deviation or rebelay (where another member of the party was not with her to provide guidance). C was in front and at several rebelays did not wait for D to join him before setting off. When D arrived at these fee-hanging rebelays there was often confusion and on two occasions I had to down-prussick to reach D and assist her off the rope, and on one occasion I had to re-rig the pitch I was on to allow enough spare rope for me to abseil to D and assist her off the rope. *This led to CRO cutting the dangling rope on their descent of Diccan later in the evening.*

It is worth noting that D on most/all occasions couldn't put her descender on the rope correctly. However, D was obviously worried about the CRO callout and the effect it had had on her friends by this point and I think that this had some affect on her performance.

We made slow progress until reaching the bottom of Diccan, where we were joined by the two advance party members of CRO. Here we headed up via the Dolly Tubs route out of Diccan.

Further confusion was added when the CRO members complained about the ULSA rigging in Alum, claiming it was inadequate and dangerous. I assume that they thought the ropes were put there for SRT, but the ropes were actually rigged for ladder and line. At the bottom of the second pitch on the way out, several lights appeared at the bottom pitch and it became obvious that CRO had derigged a pitch on members of their team who had followed us down Diccan. (You can probably remove that, it's not really relevant to our exercise, but warmed my cockles none the less).

The cave was exited without further ado, with CRO assisting D on a couple of the pitches (assisted prussicking on the biggest pitch).

Caver A:

Caver A with two other cavers emerged from resurgence for Upper Long Churns cave to find caver F at the Diccan entrance concerned about caver D. Caver F indicated Caver D had called "rope free" after being on the rope for some time and that caver D had removed all deviations. Caver F didn't wish to descend the pitch alone after witnessing the difficulty Caver D had. Caver A put on SRT kit and went to the head of the pitch with caver F to find the rope loaded and no movement. Caver D was assumed to be still on the rope and in serious difficulty. Caver A returned to the surface to get further help. A long ULSA rope was found at SE corner of Alum Pot.

Mean while Caver K went to the head of the pitch. Caver A and F, helped by others, packed rope to remove D from the rope and lower them to floor.

Caver A return with rope and Caver K was not at the pitch head. Caver A rigged the second rope. Caver K reached the second deviation (ascending) as Caver A reached the first deviation on new rope and called that all was well. Caver A passed a message to another caver at the pitch head not sure if they were alone.

Caver K Changed over and went down. Caver A descended to the bottom of the pitch and spoke with Caver K to confirm understanding of the situation. Caver A returned to the pitch head de-rigging the new rope, reinstalling all deviations on original rope and removing the deviation added by Caver F as it created a rub point.

CRO didn't re-rig the first pitch.

Potential risks identified (your thoughts)

“Risk to D (who could easily have become stuck on the rope under the water on the first pitch as we thought had happened, or even lost control of her descent/fallen clear of the rope on any number of pitches following that)

Risk to others (When reverse prussiking on the rope which was loaded by D, I didn't feel as safe as I would usually whilst descending)”

“Level for ability of caver D was not suitable for trip.”

Your suggested learning points.

Diccan is not a place for relative novices/ inexperienced at SRT.

Pre-trip planning is important, so that cavers such as E and D don't end up tagging onto an unsuitable trip for their level of experience.

Good/effective communication is essential - I think we actually did well once we arrived in the cave and assessed the situation for ourselves, but before that we were expecting the worse having only been given very vague details from a near hysterical Caver E.

It is really important to have caved with and experienced the standard of cavers before giving them responsibility on trips/teaching

I think that each trip must have a designated leader (whether that is official or otherwise) and they have to know enough to only allow people to undertake trips suitable for their level of experience. Also they must be able to assist cavers in trouble. Some people are natural leaders and some although adept themselves cannot transfer that to leading situations.

Lists of people going underground, where they are going, call out times should always be completed for busmeets. This is vital where there is one or more group taking part.

Trips (SRT) that people do should correspond with the skills that we have recorded in the chapel logbook. This could be a valuable tool if we apply it, as many of our leaders will often not personally know the novices they are caving with.

Alum Pot/Diccan Pot trip 4th November 2007

Members

Caver G [Member of ULSA since 1992 (15 years). Actively involved up until last couple of years where frequent attendance at trips has diminished due to other commitments. Lead trips for over 10 years. Completed Diccan Pot in and out at least twice before.]

Caver H [Began caving 2004, completed numerous trips (srt and ladders) had a years break and recently returned now caving every weekend]

Caver E [Joined ULSA September 2006 caved weekly for that university year, comfortable with Srt]

Caver I [Approx 2 years caving experience with the club]

Caver J [More than 5 years club experience, including extensive SRT knowledge, veteran of several expeditions]

Brief summary of the trip and/or key factors

Caver G:

Trip planned to descend Alum pot via Dollytubs pitch to the bottom, and for party then to split and derig both Alum and Diccan Pot.

Trip to bottom of Alum involved assisting additional caver and his two sons underground, G and J were also leading H, E and I .

Cavers G went with the family to the sump before they turned round to ascend. G waited for H,E,I and J to reach the bottom. G's intention was that 3 would ascend Diccan and the others would escort the family out of Alum Pot and derig that route.

On returning to the bottom of the last pitch caver J was pulling through the rope the family were now going to derig Alum on their own.

G was unsure about this as the Diccan team was now 5 and was unaware of the exact experience of 3 members of the team.

G ascended the last pitch first and waited at the first rebelay for H to ascend to the deviation and then on to the next rebelay before moving up himself. At the most convenient location G witnessed H, E & I all ascend the last pitch with limited difficulties. G was quite happy with the competence of H, E and I as the lowest pitch is the most technical.

G moved up to the top of the next pitch and repeated the exercise. G assisted H and E off the end of the traverse line as they were just too short to bridge the rift which is quite smooth.

G instructed H to ascend the next pitch (actually 2nd but incorrectly thought to be 3rd pitch) and then continue up 1st pitch (thought to be 2nd) and wait at the top. E and J waited at the bottom of true 2nd pitch as it was slightly drier than the bottom of true 1st pitch, whilst G waited for J to ascend and derig the lower pitches.

G had to wait a considerable time for the rope (approx 20-25 minutes) but then passed E and J and asked if they had heard rope free from H, which they had not.

G ascended 2nd pitch to the base of 1st pitch, which is very spray lashed and difficult to both look up and also to communicate on, and shouted to H if the rope was free. The following minutes were spent with a very difficult and broken conversation with H about whether the rope was free but the only definitive call heard was 'Help'. G pulled on the rope with the intention of ascending to assist H but could not definitively determine if H was attached securely on the rope. After releasing the rope again, G determined that by pulling on the rope that this was assisting H. Eventually other calls from H instructed G to release the rope and H shouted 'rope free'

G then ascended the pitch, pausing to extend a deviation that was originally very short

and difficult to pass. I got off the top of the pitch and immediately checked H was ok. They were very cold, upset and obviously shocked but otherwise ok. By pulling the rope tight at the bottom of the pitch H had been pulled out of the line of the waterfall and had been able to ascend to the top of the pitch.

At the top of the pitch it was established that H had struggled with the second short deviation, and then proceeded to pass the top deviation which was located at the bottom of the traverse line, but had not clipped in to the traverse line as H was not aware they needed to. H swung away from the deviation and in to the line of the waterfall. The rope was not re-belayed or deviated below the top Y hang placed on the roof above the pitch.

G rigged a second rope whilst E was ascending to install a deviation near the top of the traverse (2nd rebelay P- hangers) and another screwgate on the 1st rebelay P-hangers. This meant that even if the traverse line was not clipped, the rope still hung away from the line of the waterfall. This also makes ascending this section easier as the rope hangs more vertically.

G instructed E (and then I and J in turn) to clip the traverse line but also witnessed E passing the deviation and reaching the pitch head, to ensure that the new deviation and screwgate improved the rigging.

E escorted H out of the entrance whilst I and G waited for, and assisted, J to finish derigging.

Comments

Technical ability was not really a contributory cause but experience and possibly strength was. Thinking your way out of a difficult situation is an important part of trips such as Diccan Pot where situations and conditions can change i.e. water level rise. Altering rigging for other team members is often necessary utilising any suitable available kit.

Had I ascended the 1st pitch first I would have altered the rigging to suit me and would have been able to instruct the other party members. However by doing this the other team members would have had to spend longer at the base of the pitch in the water. Due to the limited number of bags pulling the ropes out was more difficult and so I waited for the full bag of ropes from the 5 pitch.

Questions to H – did they consider/ try to pull in on the rope and (as it was tied on to the second pitch) they would have pulled themselves back in to the traverse/ deviation. I know they pulled themselves out of the waterfall but not sure how or to where?

Caver H:

The trip started well, everything fine until the last pitch. I went up the last pitch first planning to wait at the top of the pitch. There were a total of 3 deviations on the pitch, the first was fine, and the second was more difficult as it was very short. The third deviation was also fine but it was after this one that I swung directly beneath the waterfall and found I couldn't prussik up due to the force of the water. I couldn't take my jammers off to descend and was finding it difficult to keep my head and body out of the waterfall as I became more tired and cold. Realising I could not move from this position I called down for help but was not sure if anyone had heard because I could not see or hear anyone. After some time being beneath the waterfall somebody got on the rope to come and help,

the extra weight on the rope meant I was pulled enough out of the waterfall to carry on to the top of the pitch. Once up, I waited at the top for the others. The next person up decided to change the rigging by extending the 2nd deviation and adding an extra one at the top to keep the others out of the waterfall.

Caver E

An SRT trip down Dollytubs and out of Diccan with J de-rigging.

No problems until the last (topmost) pitch of Diccan. A briefing was given about each section before ascending. H went up first but seemed to be taking a long time. G and E were at bottom of the pitch. G and E heard shouting; identified 'help' and 'stuck' but little else due to echoing and noise of water. G tried to shout up but was unable to communicate with H. After some time, G prepared to ascend to investigate. After more shouting G realised H was ok. G and E, followed by I and J, ascended pitch. At the top H explained that they had not realised the need to clip into the guideline until too late and had swung into the waterfall. H had been unable to prussik or get off jammers and onto descender to return to guideline. G's weight on the rope had pulled H out of the water and allowed H to continue ascending. H had also had trouble with very short deviations near the top of the first pitch. G lengthened these as G ascended. As H was cold E and H went out and back to the hut. G waited for I and J.

Potential risks identified (your thoughts)

"H could have got too cold under the water to continue ascending once G's weight pulled the rope out of the water. Worse – H could have got hypothermia or drowned."

"Experience / strength of members"

"Lack of recent familiarisation of the pitch layout – not personally considered as it was a derigging trip."

"Number of trip members due to having to wait at the base of 1st or 2nd pitches which are very cold and wet."

"Although the rigging was adequate, it was rigged by and for two experienced cavers who appreciated the necessity of the traverse line before hand (or soon did when they got there) However by descending the pitches first this type of issue is more apparent."

"Very wet/draughty cave so not ideal to have long waits for pitches, was not rigged to full potential, lack of knowledge of how the cave had been rigged in the first place"

Your suggested learning points.

Robust means of communication on 1st and 2nd Pitches

Pre-inspection of 1st pitch head at least

Number of leaders / bag carriers

Leaving trips rigged for other club members to use potentially allowing inexperienced members to undertake trips out of their skill range.

Leaving trips rigged adds additional pressure on the Sunday. Consider derigging everything on Saturday?

Information to be passed on as to how the cave was rigged and problems that people may

encounter, better communication

The use of guidelines could be explained to those learning SRT. Maybe there needs to be a section of SRT training included in chapel about what to do if you get into a bad situation/difficulty.

Summary of learning points

As has been pointed out previously, the reason for these incidents are multifactorial. Several themes emerge from the comments by participants, namely communication, leadership, rigging and training in SRT and rescue techniques. The following bullet points for each theme are to be discussed.

COMMUNICATION

- Callout lists containing who is going caving, where they are going caving and what time they are expected back should be left with a reliable person. Additional information e.g. car registration numbers, preferred course of action if overdue can be added. Suggestions include mobile white boards for bus meets, waterproof note book left near the Long churns entrance during the Pennine hut weekend (as changes of plan are quite common on this weekend and club members value flexibility)
- Underground communication is a particular problem in Diccan pot, should eg walky-talky technology be considered by the club?
- In the event of emergency clear and concise information as to what happened? When? Where? And who is involved? Enables rapid assessment and rescue planning. Club members should be aware of what to do in the event of an emergency (emergency cards in first aid kits and on website ask those questions)
- If a cave is left rigged for other members, advice about any awkward sections or deviation from the published rigging guides should be passed on by the rigging team to people likely to use those ropes.

LEADERSHIP

- Each official club trip should have a nominated experienced caver to orchestrate underground activity. They would provide members with advice about the nature of the trip and the suitability of participants
- Each group going caving should have a nominated leader who takes account of the abilities of all participants of the trip, not just themselves. They should familiarise themselves with the cave and, if appropriate, the pitch layout/rigging. They must be able to assist cavers in trouble (within reason/if safe).
- Should there be a vetting system for leaders? New club members with experience should be put in the position of having to take this responsibility until suitably integrated to the club.
- Leaders should be able to decline to take individuals on particular trips if they are not comfortable with that person going. Such decisions should be supported by the club. (It's never nice to say no but someone not up to doing a particular trip not only puts them self in danger, but other club members in danger too)

TRAINING IN SRT

- There is an SRT training program and log in operation at 'chapel'. The information from this should be available to trip leaders on busmeets (some of whom are not in a position to attend chapel). Trips that members do should correspond to their abilities as documented in the logbook. Perhaps underground SRT trips completed could also be part of the log?
- Thinking your way out of a difficult situation is an important part of trips such as Diccan Pot where situations and conditions can change. Tricky situations and how to get out of them should be part of SRT training.
- Cavers without recent SRT practise should refresh their knowledge on a trip during which the more experienced cavers can give instructions at critical points (that was impossible in Diccan due to the nature of the cave). This can be done in chapel but

with the rise in popularity of 'year outs in industry/abroad' this is not always logistically possible. The club should respond to this change and ensure 'refresher' trips (eg Sell Gill) are encouraged where appropriate.

TRAINING IN RESCUE TECHNIQUES

- Ideally trip leaders should be trained in and have recently practiced rescue techniques. Could an update/practice weekend become part of the annual ULSA calendar? (can also be practiced in chapel but again there are logistical problems for some leaders.)

RIGGING

- Rigging should be safe and appropriate for those likely to use those ropes.
- Leaving trips rigged adds additional pressure on the Sunday. Consider derigging everything on Saturday?
- Leaving trips rigged for other club members to use potentially allows inexperienced members to undertake trips out of their skill range.

WIDER ISSUES

- ?need a safety officers, need to determine required experience for planned trip and vet those wanting to go underground accordingly. If are going to chart SRT experience, this needs to be a maintained + recorded regularly – taking advice from the Leeds subaqua could be appropriate. ?crossover with tackle officer (could also record state of ropes/srt kit (will need more rigorous labelling system for kit)
- Responsibility of training officer
- Contingency plans such that the club can run safely even when committee positions are inadequately filled or attended

Bibliography

CDG Online Incident Reporting System

<http://www.cavedivinggroup.org.uk/IncidentReporting/incidentshome.html> (accessed 5 November 2007)

CNCC Technical Group (undated) CNCC Eco resin rigging system rigging no 3.CNCC, Skelmersdale

Marshall D, Rust D. (1997) Selected Caves of Britain and Ireland. pp34-35 Cordee, Leicester

Brook A, Brook D, Griffiths J, Long M.H. (1991) Northern Caves. Volume 2: The Three Peaks. pp 139. Dalesman, Skipton

ULSA First Aid Kits- Emergency Incident cards

http://www.ulsa.org.uk/pubs/virtual/openFile.php?pub_id=12 (accessed 24 November 2007)