University of Leeds Speleological Association

Investigation into Incidents at King Pot, North Yorkshire 15th and 16th December 2013

Background

During the weekend 14th /15th/16th December 2013 some 15-20 cavers attended an event at Bull Pot Farm on Casterton Fell. This was a social event rather than an organised club trip. Several different caving trips occurred over the weekend. King Pot was under taken as a trip on Sunday 15th.

Numerous trips had been planned to several locations over the weekend, but had changed at short notice due to the weather. The forecast of the weekend had been clear for Saturday morning with rain set to arrive late in the afternoon. The forecast for Sunday was again similar to Saturday but with the rain arriving later in the day than on the Saturday. The King Pot trip on Sunday resulted in a call out for the Cave Rescue Organisation and the cavers involved were escorted to the surface early on Monday afternoon.

Aims and Objectives

1. To establish the facts concerning the incidents.
2. To identify the factor(s), which led to the adverse incidents.
3. To analyse how those factors may have been overcome.
4. To establish what reasonable measures could be put in place to prevent similar incidents from reoccurring.
5. To enable these measures to be implemented within the club.
6. 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 the processes that went wrong (or right!) and to avoid blaming individuals.
- It shall be acknowledged that individuals involved may be upset by the incidents and therefore efforts to support them will be provided, if necessary, including the counselling services offered by the Union (see the end of this document).
- The editor {ED} 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

King Pot is a cave on East Kingsdale that provides access to the East Kingsdale Master Cave. The cave consists of a series of pitches, most relatively short but are connected by a series of passages that become more involved with the streamway further into the cave. The entrance passages are strenuous and require a great deal of effort to negotiate especially when carrying gear. The lower passages can become wet with heavy rain. The master cave is always wet. The master cave is believed to back up and may fill the lower crawls to the roof. The furthest reaches of the cave (the Grasshopper Series) fill to the roof and should only be entered in dry settled weather.

Summary of the incident

Three cavers; one slightly more experienced and two with relatively little experience from ULSA descended King Pot on Sunday afternoon, when the forecast was for rain and it had rained heavily the night before. (Records show that between ca. 07:00 14/12/2013 and ca. 07:00 15/12/2013 19mm rainfall was measured in Clapham and 21mm the following 24 hours). The group had believed that the cave was safe for a full descent in wet weather. They descended the last pitch to quickly find themselves unable to return safely back up this pitch as the volume of water had increased substantially. At 3am a fourth and fifth member of the club went to look for them and became concerned and contacted the Cave Rescue Organisation (CRO). The fourth member continued the descent alone with some emergency equipment having spoken to a CRO representative and located the party trapped at the foot of the final pitch. They then waited for further assistance and were escorted to the surface, arriving early Monday afternoon.

Summary of learning points

- ...it was this lack of knowledge that led to the incident in the first place. {*ED – quoted directly from one of the party's comments with regards to the points below*}.
- Weather forecast must be checked. Although it was done in this case, it must then be taken into consideration as the trip progresses and current water levels become apparent and plans changed where necessary.
- Awareness of the flooding potential in all caves is important, in particular where guidebooks do not provide a flood warning. If there is no specific warning given in guidebooks this does not mean a cave will not flood. If in doubt stay out {ED - See page 12 Northern Caves 3}.
- Communication was lacking when collecting information from those persons with local knowledge. There was a key opportunity missed in gathering information from more than one source of experienced personnel. Equally what is believed to be good local knowledge should always be treated with caution and the forecast and conditions at the time should dictate decision making. Simply believing a cave doesn't flood whilst stood at the top of a wet pitch would suggest information is incorrect.
- Communication of a wet pitch is difficult and it is essential that any attempt to exit from a flooded pitch have a clear plan of what will be done and how it will be communicated. This would avoid any possibility of having more than one person on the rope.
- Better communication was needed between members of the group during trip. A proper discussion of the forecast may have lead to a different decision being made with regards to descending the pitch. The degree of tiredness within the group may have lead to an earlier turn around. Caves are frequently more tiring on the return.
- Carrying of group shelter can significantly improve an enforced camp be it through flooding or injury. Use of other equipment to improve improvised camps, such as sitting on knee pads, tackle bags and spare rope and wringing out clothing at the beginning of an enforced camp where possible, could have further improved the caver's situation.
- Carrying additional equipment such as basic clothing like a balaclava and buff and spare lighting is essential on all trips. This also includes carrying a knife and whistle and knowing what the whistle blasts mean is essential i.e. SUDS. Carrying a watch is strongly recommended to ensure callout times are not missed resulting in an unnecessary CRO callout.
- Food should be carried by all to enable a trip to be safely completed; additional food may also be carried if a trip is intended to be a long one.

This incident highlights that there were significant failings of the processes and procedures that the club has in place, as dictated through its training programme and in the risk assessment. Had these processes and procedures been adhered to, as a simple following of basic caving safety, this incident would have been entirely preventable. Having reached this conclusion it is important to stress that these cavers were faced with a difficult decision; either to sit out and wait for water levels to lower or to attempt to exit the cave. Eventually choosing the former they made the correct decision and waited for assistance, where any further attempts of exit in these conditions could have had far more serious consequences.

Summary of Action Plan

Urgent action needs to be taken by the club to ensure that members are fully aware and appropriately trained in the basic requirements to be able to carry out a caving trip safely. This should be done in a way that draws positively on the learning points highlighted above.

Implementation Plan

Some part of the training sessions should be spent broadening the skills of all cavers and should include:

- Understanding guidebooks descriptions and reading the introductions.
- Understanding surveys.
- Hazard awareness in caving but this should not be limited to flooding.
- Checking the forecast and understanding cave development as this can affect the type of flooding. Conditions on the day and days prior to a trip can affect the type of flooding that can occur.
- Basic equipment and clothing necessary for caving.
- Decision making to prevent dangerous situations.
- Those wishing to lead trips should be monitored in their progress and understanding to carry out these tasks. It may not always be necessary for a trip to have a designated leader, where there are the skills required present within the group as a whole, but such a group must have excellent communication between its members. This is especially the case as all members progress in their caving careers.
- Highlight the use of the ULSA website as a resource and the mailing list as a potential way to contact more experienced members.

A separate actionable point in terms of signing up members:

- All those who sign up must provide detailed medical information no matter how they sign up.

Bibliography

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

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Brook A, Brook D, Griffiths J, Long M.H. (1994) Northern Caves. Volume 3: The Three Counties and the Northwest. pp 35-38. Dalesman, Skipton

M. Cooper, Not for the Faint-Hearted pp. 146-148, Purprise Press

Appendix

The appendix is broken down into three parts:

1. Reports from those directly involved and includes:

    - *Trip 15th December 2013*
        Members involved
        Brief summary of the trip and/or key factors
        Potential risks identified
        Your suggested learning points

    - *Initial rescue party Trip 16th December 2013*
        Members involved
        Brief summary of the trip and/or key factors
        Potential risks identified
        Your suggested learning points

2. Comments from experienced members having done the trip

3. Comments from those not having done the trip or involved

1. Reports from those directly involved

Trip 15th December 2013

Editors note: All concept of time quickly becomes distorted when underground if a watch is not carried, none of the cavers in the initial party were wearing a watch, thus quoted times should be treated with caution.

Members

Caver A
[Began caving in September 2012 and I have caved regularly since. (At least once a week during term time.) Been leading trips since September 2013. Previously been down King Pot during the summer of 2013.]

Caver B
[I had been caving without much serious intent for some years with my parents and had completed trips in the Peak District and on Mendip including excursions into Giants Hole, Swildons Hole and GB. However, I had not done any truly strenuous caving until arriving at Leeds and began to learn SRT. Since the start of term, I have been on a number of trips, including Sell Gill and Wretched Rabbit to County Pot and a trip into Giants Hole at CHECC.]

Caver C
[2 ½ months caving experience; good SRT competence]

Brief summary of the trip and/or key factors

Caver A:
On Saturday evening a few of the group seemed keen for a harder caving trip the following day, so I offered to lead a trip down King Pot, as I had found this trip challenging but extremely enjoyable on my last visit.

Awakening on Sunday morning, I had 2 large bowls of porridge and some toast. Over breakfast I enquired as to who was still eager for the trip and Caver B and Caver C agreed to join me so I recommended they too ate well and brought emergency food for the trip.

I knew the weather forecast to be bad for that afternoon, but believed from conversations with another caver that the entirety of the cave was passable in wet weather with the exception of the Grasshopper Series. Having found no evidence to contradict this in both guides I checked – 'Northern Caves Volume 3' and 'Not for the faint-hearted'- I saw no reason for the trip not to go ahead.

I had borrowed a laminated guide to the cave and left it with the group at the farm while I was collecting another member of the club from Clapham Station (around noon) asking them to pack the ropes while I was gone so as to not delay our start any more. On returning to the farm I packed my own personal kit into the car, added the ropes, all the metalwork I felt would be needed, extra slings and a group shelter. Knowing we would be returning late, I ensured Caver D and Caver E were prepared to wait up for our return, before writing our trip on the call out board.

I entered our expected return time as 12.00AM (midnight) and our call out time as 3.00AM.

We then left for the layby outside Braida Garth Farm. On the journey I stressed to the other two that this would not be an easy trip and asked them to tell me as soon as they began to feel tired so we could turn round and make our way out.

We kitted up in the layby outside Braida Garth farm. Beneath my oversuit I was wearing a Meander Polartec undersuit along with long wetsocks. We left the car around 2.00PM.

At the time of going underground, the weather was bright but cloudy.

It was agreed that Caver B and Caver C would rig under my supervision and steady progress was made. To speed things up, I rigged the last 2 pitches (Victoria and Elizabeth).

Upon arriving at the bottom of Elizabeth Pitch, I noticed it was wetter than it had been on my last visit and would be unpleasant to ascend. I considered returning to the pitch head and exiting the cave without allowing the others to follow. But after examining the pitch for a short while I decided although unpleasant, the ascent in these conditions would not be dangerous, so I called 'Rope Free' and the others followed me down. We removed some of our excess kit and set off crawling towards the main drain. I noticed the passage seemed to be becoming increasingly wet so we turned round and headed back to Elizabeth pitch.

The water coming down the pitch had greatly increased over the estimated 20 minutes we had been absent but I felt the pitch was still just passable. I hurried to put on my SRT kit and attempted to climb the rope with my feet against the wall keeping my head out of the water, thinking I could alter the rigging at the top to allow the others a safer route up. It quickly became apparent to me that I would not be able to safely ascend the pitch, so I gained a ledge and set up a deviation, keeping the rope below me well out of the water. Caver B then joined me on the ledge and after a quick consultation we decided by far the best option was to sit it out, so we both returned to the bottom and all three of us huddled under the group shelter waiting for either the water levels to die down or a rescue team to arrive.

We spent the night talking and singing to keep spirits up, dozing off occasionally. Rotating who was in the middle at intervals to prevent getting too cold. After some time we heard Caver D at the pitch head. We shouted back and he soon joined us at the bottom – altering the rigging on the way - with extra survival equipment and food from the Bull Pot Farm grab bag. After ensuring we were all fine, he set off back to meet CRO on their way down to us to inform them of our situation. A short while later CRO arrived. They re-rigged the last pitch and escorted us out of the cave, providing food and hot drinks en-route.

<u>Caver B:</u>
Caver C and I had come to the weekend to gain some rigging experience, so we decided between us that we would take it in turns to rig pitches. I did the first and third, Caver C did the second and fourth and Caver A did the last two. This may have caused us to make slower progress than if Caver A, being more experienced than Caver C and I, had rigged all of it, but I still think that we progressed through the cave at a reasonable pace. However, we did start later than intended for a number of reasons: helmets had to be collected from Inglesport, we had to make sure that everyone would be going on a trip that they felt they wanted to do and were able to do and there was a general amount of delay due to the festivities of the night before (cleaning up and the like). When we reached the bottom of Elizabeth pitch, the water levels in the waterfall were of an expected level for a pitch of that size leading into the main drain of the cave system, so none of the party felt overly concerned by the water levels. However, on return to the foot of the pitch around 20 minutes later, the water level in the pitch had risen by a clear amount, roughly twice as much as previously. Caver A tried to ascend the waterfall, but halfway up he did not feel in control and moved out of the water on to a ledge at the side. I prussiked up and we discussed the options available. Caver A felt that if we continued to ascend the pitch there was a risk of one of us drowning, so he said that he thought it would be best if we waited for the water levels to subside in a group shelter in the dry at the pitch foot. I agreed and we descended and proceeded to sit it out. We would occasionally get out of the shelter to get some life back into our muscles and it was clear that, far from subsiding, the water levels were rising at an alarming rate. We soon accepted that we would miss callout and waited for a rescue response to arrive. We had enough food between us to last until morning: 2 snickers bars, a mars bar and some oatcakes. We had no watch, so we had no idea what time it was at any point during the trip. However, at some point in the morning, we heard Caver D at the pitch head and morale was raised considerably. Caver D then rerigged the pitch with some rope cut from the previous pitch so that the hang

of the rope did not lay in the water and abseiled down to us with the Bullpot Farm CRO sack, containing a larger shelter, a roll mat and some food. After partaking in these with us, he re-ascended the pitch and blew on his whistle to let us know he had ascended safely. We then waited for the main CRO response in the shelter. A little later, the CRO team had rerigged the pitch as they felt appropriate and we ascended out of the cave to the surface. Though we were all somewhat fatigued by the nights ordeal, we really wanted to get out and so the large quantity of mars bars we ingested were very welcome. We all ascended without further mishap and warmed up and ate stew in the CRO tent by the road.

Caver C:

The original plan, made Saturday night, was that four people (myself, along with Caver A, Caver B and Caver E) would take a trip down into King Pot the next morning. Although I was relatively new to caving, I had learned the skills very quickly and had been expressing a desire to try more challenging caves for several weeks.

On Sunday morning, we were delayed in leaving for the cave by the arrival of other cavers at the train station and by needing to hire helmets. Caver E backed out of the trip, leaving me, Caver A and Caver C. We finally made it to Kingsdale by 1:50, where we got changed into our caving gear. Not owning an undersuit, I was wearing a full set of thermals and a fleece jumper under my oversuit. That had been plenty to keep me warm on previous caving trips. After we were finished putting on our gear, we found the cave entrance and were underground by around 2:30. At that time there were rain clouds on the horizon, but we weren't concerned since we expected King Pot to be safe in rainy conditions. We brought a group shelter and water with us just in case, but none of us had a watch.

We made relatively fast progress through the cave, given that both Caver B and I are relatively new to caving. Even though most of the pitches were rigged already, we used all our own ropes for the trip. On the way to the cave, Caver A had warned us that getting back out would be harder than getting down the cave, so throughout the trip I was keeping note of my energy levels and checking in with Caver B. By the time we reached Elizabeth Pitch Caver B and I were starting to get tired. We didn't tell Caver A that we were getting tired; we both wanted to make it to the end and we felt that we could handle the last part of the cave.

Caver A rigged Elizabeth and descended first. I went down second and Caver B came down last. Approximately ¼ of the way down the pitch, the rope went into a waterfall and continued that way to the bottom. Caver A and I agreed that getting back up the pitch wouldn't be fun, but we weren't worried about it being safe to do so. When Caver B reached the bottom of the pitch, we headed a short way towards the main drain. Because the cave was partly flooded, we were quickly turned back and returned to the bottom of Elizabeth within around 20 minutes.

When we returned to the bottom of Elizabeth, the waterfall had increased to about twice its earlier size. Our plan was that Caver A would ascend first, followed by me. Caver B would ascend last and de-rig the pitch. While Caver A prepared to ascend, Caver B and I moved to a more sheltered position out of sight of the pitch. Soon we heard Caver A shouting for us. We returned to the base of the pitch to see Caver A climbing to a ledge out of the water a little under halfway up the waterfall. When Caver A was safely on the ledge we tried to communicate, but had limited success because of the noise from the waterfall. Caver A rigged a makeshift deviation so Caver B could ascend to the ledge. Caver B took the tackle sack up to the ledge, where he and Caver A rigged a more secure deviation so they could get down safely.

When Caver A and Caver B returned to the bottom of the pitch with the tackle sack, we discussed what would happen next. We had two options for getting out of the cave: waiting for the waterfall to subside, or waiting for CRO to assist us in getting out. In either case, we needed to wait at the bottom of the pitch, so we got under the group shelter. Caver A was coldest from ascending through the waterfall, so he sat between Caver B and I so we could help warm him up. After he warmed up, the three of us took turns being in the middle throughout the night.

After waiting at the bottom of Elizabeth for maybe 45 minutes, Caver A suggested that we move behind the wall separating the bottom of the pitch from the entrance to the Grasshopper Series {*ED - this is not the entrance to the Grasshopper Series, this lies much further into the cave}* to shelter us from the wind. When we did so, the waterfall had again noticeably increased in size. We set up the shelter again on the far side of the wall and stayed there for the rest of the night.

Over the course of the night we sang songs and told stories to help the time pass and keep our spirits up. When we got too tired to keep talking we started to doze off. We did our best to conserve the batteries in our lights by having only one on at a time, or sometimes having them all off and we ate as little as possible to conserve our food. We did try to figure out how long we had been underground and how long we would need to wait for assistance, but we didn't dwell on it. Especially once we started to fall asleep, it was impossible to tell the passage of time.

Sometime in the morning, we heard a shout coming from the top of the pitch. We all answered and while Caver A went to investigate, Caver B and I stayed in the shelter to keep warm. Caver A soon returned with Caver D, who had brought the Bull Pot Farm CRO grab bag. From the grab bag, we set up the group shelter and roll mat for the four of us. Caver D also gave me the balaclava from the bag, since I'd had a persistent chill for most of the night. While we drank some water and ate some of the food from the grab bag, Caver D told us about what had been happening outside of the cave. He said that he had called for a limited mobilisation of CRO before he and Caver E had come into King Pot to see if we were just making slow progress. When he got partway through the cave and hadn't run into us yet, he sent Caver E to call for a full CRO response. He estimated that CRO would be about another half hour in getting to us.

After we had been brought up to speed with surface events, Caver D decided to attempt to ascend the pitch and meet CRO at the top. Caver A went with him to the bottom of the pitch then returned to the shelter once Caver D had ascended all the way. We waited in the shelter until CRO arrived, at which point Caver A returned to the bottom of the pitch. CRO and Caver A attempted to communicate from opposite ends of the pitch with limited success because of the noise of the waterfall. Once CRO had successfully rigged a re-belay into the pitch to keep the rope out of the water, we prepared to ascend. Caver B went to the base of the pitch right away, while I helped pack up the group shelters. I left Caver A to finish packing the tackle sacks and climbed over the wall to the bottom of the pitch. The waterfall had again increased in size since I'd last seen it.

Caver B ascended the rope first, I went next and Caver A ascended last. When I got to the top of the pitch, Caver B had moved on in the cave already. I waited with Caver D for Caver A and the rest of CRO, then we set off through the cave. After the second pitch we ascended, there was a group of CRO members who gave us more food and juice. After a quick rest, I was escorted the rest of the way out of the cave by two CRO members. Upon exiting the cave I was escorted from the cave entrance to the road, where CRO had set up a tent. Caver E had been waiting there since he left Caver D in the cave. Caver B had arrived before me and while we waited for Caver A to make it down to the tent we ate some stew that was kindly provided by CRO. Once we had all made it down to the tent, we stayed there until the CRO members had all come back from the cave entrance, then we set off to the car. We got changed into our dry clothes and headed back to the farm at about 2:40 on Monday afternoon, nearly 25 hours after we arrived in Kingsdale.

Potential risks identified

<u>Caver A:</u>

- Prior to the trip and during the descent of the cave I believed the main risk to be exhaustion and the consequences thereof such as becoming cold as a result of a slow exit, or mistakes due to reduced concentration.

- When trapped at the bottom under the shelter, after determining the area we were positioned on

was not going to become submerged by water, I believed the main risks were Hypothermia from sitting at the bottom with only limited movement, or if an exit was attempted, a high risk of drowning on the rope.

Caver B:

- I feel that the fact we didn't assess the weather in depth as a team before we left was a mistake, though I'm not sure if an awareness of the extent of the rain would have made a difference to our plans as we were under the impression that all of the pitches were passable in wet weather. If we hadn't have had a group shelter, the night would have been extremely cold for all of us and hypothermia would have been a substantial risk. Also, none of us had whistles (I like a cretin forgot mine for the whole weekend), so communication at the pitch was quite difficult at times due to the volume of the water flowing down it. However, overall I feel that we made the correct decision to not ascend the pitch, as the ordeal ended with all three of us alive, safe and warm.

Caver C:

- The only real risks in this incident were the risk of drowning by trying to ascend Elizabeth and the risk of hypothermia from sleeping in the cave overnight. The former was managed by not ascending the pitch. The latter was managed by using a group shelter and swapping which of the three of us was in the middle.

Your suggested learning points.

Caver A:

I think that we, as individuals involved and the wider caving community should learn:

- The importance of carrying a group shelter at all times on all trips.
- The importance of checking carefully how all areas of caves respond to bad weather.
- The importance of getting the most up-to date weather forecast possible before going underground.
- The importance of setting an appropriate call out on all trips.
- The importance of carrying extra warm clothing and emergency food.
- Not to continue into a cave where exit would be impeded with any deterioration of condition.
- Not to attempt to climb up a rope under heavy water.

Caver B:

- Always, always check the weather in detail before embarking on a trip. This should be a definite must, a priority and a group responsibility (not left to one person, so as to ensure it gets done).
- Always take at least one group shelter on club trips.
- Make sure every member of the party has food with them.
- Make sure that at least one member of the party has a whistle and more than one member if the party is large enough.
- Make sure that the group knows its limits and arrives at an informed and sensible decision at all times, be this to do with "prussik or wait" or "do king pot or perhaps a less challenging cave if its getting later in the day".

These things being said, I do feel that we were slightly unlucky to arrive in our predicament, though that definitely does not mean that the above points should not be considered.

Caver C:

- I think that this incident should be taken as a positive example of what should be done in this situation. The three of us stayed calm, took care of each other and kept each other company until CRO arrived. We had a group shelter, which we used and we were careful with our food supply and the batteries for our lights. This should be taken as a learning experience of how to manage being trapped in a cave overnight. Specifically, trips should always have a group shelter and emergency food and, when possible, extra warm clothes.

- As far as prevention is concerned, it should be better communicated that Elizabeth Pitch is prone to flooding in wet weather. Whether this information should be included in a subsequent edition of the cave guide or could just be passed as word of mouth, it was this lack of knowledge that led to the incident in the first place. Another factor that should be considered is adding another bolt to the top of Elizabeth Pitch so that it can be rigged in such a way that the rope is out of the water. This would make the cave safer in wet weather and could prevent this incident from happening again in King Pot.

Initial rescue party Trip 16th December 2013

Members

Caver D
[Began caving as a child at the age of 3 continued to cave with several youth organisations joined the Shepton Mallet Caving Club in 2006 and became involved with several exploration projects. Started Alpine caving in 2008 and has been involved in 11 overseas expeditions in Europe, North America, Asia and North Africa. Joined ULSA/LUUSS in 2009 acted as secretary and tackle officer in 2010 and president in 2011. Elected as chair of the Council of Higher Education Caving Clubs in 2011 presently serves as a member of council for the British Cave Research Association. Holds Local Cave Leader Award (LCLA) level one and remote areas first aid certification as well as being a qualified level 1 IRATA roped access technician.]

Caver E
[Brief summary of previous caving experience] Caver E has not provided input.

Brief summary of the trip and/or key factors

Caver D:
The team entering king pot had left an estimated time back of midnight and a call out of 3am. At 2am I became concerned that they had not returned. Not wanting to have to call rescue out at an antisocial hour unless completely necessary I asked Caver E and Caver F to come with me to Kingsdale to see if we could see them on the fell. Caver G remained at Bull Pot Farm in case the missing party managed to pass us and return to the hut. We took with us the CRO grab bag from the hut and some food and water in case we needed to start a rescue effort. The weather was poor with significant rain and wind. We reached the fell by 2:50am and located Caver A's car. Cloud base was just above the fell and we could see no sign of lights on the fell. Leaving Caver F in the car, Caver E and I walked up to Braida Garth farm to see if we could see anyone. With no sign of the party we returned to the car and drove a short way along the road to see if we could see them from a different angle. Due to the nature of the cave I considered the most likely cause of delay to be exhaustion causing a slow exit. At 3:30am having given half an hour's grace I contacted North Yorkshire Police and initiated a cave rescue.

On discussion with the rescue warden I suggested that Caver E and I act as the initial search team given that at the early hour it would take a significant amount of time to assemble a rescue team this was agreed and Caver E and I headed up the fell leaving Caver F as a point of contact for the CRO. Two police officers were by now in attendance.

We had some difficulty locating the entrance in the poor weather but located the cave by approximately

5:30am and left Caver E's back up light at the entrance to guide any additional rescue team members in. We descended to just below the first pitch and at this point I was now significantly concerned that we had not seen the missing team and now considered it likely that an accident had occurred I also decided that I would be significantly faster moving alone given the experience gap between myself and Caver E. I asked Caver E to return to the surface to request additional support and he was also kind enough to throw down a copy of the guide book, which after trying to shove myself into a hole at the base of the first pitch that didn't go anywhere I decided I probably did need after all... I made rapid progress to the bottom of the cave re-rigging some of the ropes to avoid flood water. At the head of Elizabeth pitch I made contact with the group. I initially threw the grab bag down the pitch to the group as I was unsure as to whether or not I would be able to descend the pitch given the quantity of flood water, however I was able to re-rig the rope creating a re-belay off the large flake in the centre of the pitch avoiding the water and descended to meet the group. The group had been carrying a group shelter and spare food and apart from having a rubbish nights sleep were in good spirits and good physical condition. I spent about 40 minutes with the group before heading back up the rope to inform the incoming rescue team of the stranded party's location and condition I decided against trying to evacuate the group on the existing hang which I had installed as there was no immediate risk to the party and I felt that the addition of a bolt in the right hand wall would improve the hang and remove any risk of swinging into the waterfall. I met two members of CRO above Blood Axe pitch and at this point I joined the main CRO team.

Potential risks identified

Caver D:

- Elizabeth pitch becomes completely impassable in extremely wet weather when using the present CNCC eco anchors {*ED – not likely to be CNCC anchors as not included in any CNCC rigging guide*}.

- Emma's pitch would also be impassable on conventional rigging under flood conditions a long deviation from a boulder in the rift can be used to bring the rope away from the waterfall if flooding is a potential risk.

Your suggested learning points.

Caver D

- It should be emphasised to members planning trips to King Pot that although the cave is relatively resistant to flooding that Emma's and Elizabeth pitch and the lower crawls do become impassable in very wet weather.

- Bolts should be installed on the right side of Elizabeth pitch away from the flow of water; this route would remain safe even in exceptionally wet weather. This was discussed with members of the rescue team and should be raised with the CNCC.

- Never ever lend your knee pads to fresher's.

2. Comments from experienced members having done the trip:

Caver Z

It is evident that the weather forecast was not checked thoroughly, but also just as crucially, surface water levels (in rivers/streams) and ground saturation was not considered. It is known that King Pot is a good option in wet weather, however a big mistake here was not considering the level of 'wet' that this cave can be entered and that very wet weather conditions will impact this cave. King Pot has a streamway, therefore higher water levels will always impact this. It is the extent to which a cave reacts that is also a consideration. The group here were not experienced enough to recognise this. (There had been a substantial amount of rain the night before).

Caver C comments that further clarification should be given in guides to the extent that the cave floods. But the fact here is that neither guide states that the cave is flood proof. And both state that the Grasshopper Series should only be visited in dry, settled weather. (Although I understand that they were not intending to visit the Grasshopper Series). It is generally known by word of mouth that Elizabeth pitch is impassable in bad weather conditions and I agree that a deviation or re-belay would help this. However the lower reaches of the cave to the main drain are low and will flood entirely in these conditions and no re-belay will prevent that.

Once beyond Jane's Pitch {ED inserted text here for clarity} it could be considered lucky that they did not continue here as the passage here is low and generally takes around 15 minutes of caving to reach the sump. Therefore in this time these low passages could have flooded to the roof/the main drain could become impassable and knocked them off their feet, etc... essentially they would have been incredibly lucky to escape drowning. This is hypothetical however, but again needs addressing as this could have happened in different circumstances.

Furthermore this team needs to understand that it is their responsibility as a group to consider whether the cave is too wet or not and not a guidebook. Guidebooks are exactly what they state – a guide and cannot be relied upon entirely. Cavers should be experienced enough to realise this and make their own decisions. Caver A considered that the pitch was very wet when they descended. This should have been the turnaround point. If ¾ of the rope is in water when descending, as stated by Caver C, then this should have shown these cavers that it was too wet, regardless of guidebooks and heresy. How caves react to water can be unpredictable and do not always react the way expected. Hydrogeology is not that simple and therefore cavers should assess the conditions at that time. This goes for all factors in a cave, not just water – like loose boulder chokes and anchor suitability.

Cavers B and C should have communicated more with Caver A and let them know that they were tired. It was good of Caver C to admit this here and hopefully will be a learning experience. King Pot will always be there for another trip and all cavers should be aware that they gain more respect for turning around and admitting their limitations than continuing and having a rescue (although I understand this was not the reason for rescue – but definitely needs pointing out to prevent a future rescue of this nature).

It was dangerous to prussick up the flooding pitch, as well as dangerous to call up a second, less experienced caver. From the information given here, this should never have been attempted by either caver. It is very likely that without the shelter, these two cavers would have been hypothermic as they would have been soaking wet whilst sitting out and waiting for rescue.

Further to this, Caver B should not have prussicked up with the tackle sack. In an event like this the (non-rescue) gear should be ditched. It can always be collected on another day. This was dangerous as it is additional weight and can also get caught on something, drag the caver under the waterfall and cause them to drown.

It was very, very good to have the shelter and this was definitely the saviour of the trip. Good prior planning here. Although the fact that the team did not have a whistle or watch was very bad. In particular there is no concept of time when underground and the team should have had a watch. The team could have missed their call out and caused a rescue regardless. Furthermore, if the team had a watch and a better weather forecast, they could have considered what time the rain was due (yes, this is difficult to assess when forecasts are not that reliable, but it would have been an indicator and helped to assess water levels. As they could have thought... hmmm the water levels appear high and the rain that is due, isn't due for another couple of hours yet....)

The team was too inexperienced to consider water levels. King Pot is a tough trip and it was a little too early in the caving term to be doing this for first year cavers. Furthermore Caver A knew that Elizabeth pitch was too wet and put the team at risk when deciding to carry on. I do not agree with Caver B that they were unlucky to have had this incident. If water conditions had been considered appropriately, including obtaining a detailed weather forecast, considering current water levels, assessing timescales to travel through the cave, time watching, etc, then they would have been better informed and unlikely to descend Elizabeth pitch.

Another point is that Caver D stated that Emma's pitch was impassable. This is interesting information for all cavers as Elizabeth's is always the main focus. But also this might have also been a pitch for consideration by the team earlier on. This report focuses on what happened at Elizabeth's, but were there other signs earlier on in the trip that would have shown the cavers that the cave was too wet? There are a lot of low crawls after the T-slot to Elizabeth's – were the water levels high here and if so, should the team have recognised this earlier?

A part from attempting to prussick up the pitch, the overall reaction to the trip was very good. Shelter and food was an essential and in this respect this team were well prepared. In particular it was good that Caver A planned to take a shelter as there aren't many cavers who would choose to carry more gear through King Pot.

On a separate note, I don't think enough has been done to publicly thank CRO from the cavers involved.

<u>Caver Ω</u>
From reading the report above, I feel that the main factor in the causes of this event was the general inexperience of the party and the trip leader. All of the cavers in the group were confident and physically fit enough to tackle this cave under “normal” conditions. However I feel there are many lessons to be learnt with regards to a general approach to trip planning, caving, planning for contingency and a practical understanding of risks associated with certain cave features.

There is also a general feeling throughout the report of complacency and lack of concern with regards to the weather.

Specific comments:

Caver A states that “another caver” at the “social event” that weekend was asked about the trip and gave the impression that the entire cave was passable in the wet. There were a lot of very experienced cavers at the “social event”, most of whom I know fairly well and very few of whom I believe would claim the cave was passable. I believe that had more than one experienced caver been asked about it, or had a general discussion been brought up with anyone else, then this would not have been the general perception given for King Pot – I am of the opinion that it is a well-known fact amongst the caving community that the area around and below Elizabeth Pitch is NOT safe in the wet. This is not a criticism, but a suggestion from an experienced perspective, that as much information as possible should be gained about a difficult trip beforehand and the best source of information to supplement a guidebook description is asking cavers with

specific experience of a cave. If in doubt, or if the forecast is terrible, then it is always possible to ask a second opinion.

Caver A also states that there is no evidence in the guidebooks to contradict the idea that King Pot is passable in all weather. I would disagree here for one major reason - although it is not clearly labelled in the book descriptions, the fact that both guidebook descriptions mention active stream passage and a master cave/main drain should say very clearly to any experienced caver that these passages could or would be affected by heavy rain and wet conditions. I feel this is an important lesson.

Caver A states "*Upon arriving at the bottom of Elizabeth Pitch, I noticed it was wetter than it had been on my last visit and would be unpleasant to ascend. I considered returning to the pitch head and exiting the cave without allowing the others to follow. But after examining the pitch for a short while I decided although unpleasant, the ascent in these conditions would not be dangerous, so I called 'Rope Free' and the others followed me down*"

More specifically Caver C states: "*Caver A rigged Elizabeth and descended first. I went down second and Caver B came down last. Approximately ¼ of the way down the pitch, the rope went into a waterfall and continued that way to the bottom*"

This was the major mistake of the trip in my opinion. If the pitch was wet enough to make the person rigging consider turning around then it was unwise to have carried on and allowed the others down (especially as more than one of the party was much less experienced at SRT), at least without altering the rigging to allow a safe descent. (I say this with the benefit of hindsight, fair personal experience of rigging this particular pitch and general caving experience with flooding pitches).

I had personally visited this part of the cave in similar (though much less severe) weather conditions. The pitch was wetter than usual, so we treated it with the utmost caution. I felt it obvious that a rise in water levels would make a direct descent/ascent of this pitch impassable, so we rigged a deviation well out of the water and agreed it was safe before continuing. The deviation was around one third to half of the way down the shaft, on the far wall, rigged from passing a sling around some stal bosses in a bedding on the wall. I felt at the time that the deviation would provide a safe ascent in most conditions. However I would consider this a more advanced rigging technique and presume it was not put in due to the inexperience of the leader/rigger and more specifically for the points below:

1) The rigger was not experienced enough to recognise that a rise in water levels would easily make a direct hang on this pitch impassable/dangerous.

2) The guide book did not specifically mention the deviation we used– A good caver should ALWAYS recognise that the guidebook is merely guidance, not an exact instruction to be followed to the dot and should be expanded upon where it is deemed necessary.

3) The deviation was hard to spot / put in due to it's location far away on the opposite wall (this is also what made it a good deviation for flood conditions). Requiring a large pendulum, kicking off a pillar across the shaft and a strenuous hold onto the stal whilst feeding the sling round. A less experienced caver may not have seen it as an option and may not have possessed the technique required to rig it if they had.

4) I knew personally of a few cavers who were at the "social event" who have themselves rigged this (or a similar) deviation – asking more about the cave in wet conditions may have flagged this up?

5) The deviation was mentioned on the latest trip report on the ULSA website – the ULSA rantbook is a useful resource for cave information.

However, in this situation I would still consider all of the above as a moot point as the deviation in question may not be suitable or safe for a the SRT experience level of these cavers to pass, especially in wet conditions.

Having not been in the cave during this event, I understand that the deviation may not have been sufficient to avoid the floodwaters. However there is no mention that this option was considered, prior to descending the pitch, hence my inclusion of this point.

Caver A then attempted to re-ascend the pitch to try and get a better hang The pitch should have been rigged safely to start with or not at all – altering the rigging once you're at the bottom of a flooding pitch is the WORST possible option of all but this is down to experience.

Where both cavers A and B partially ascended the flooding pitch, this is about the worst thing possible (potentially fatal) to have done, for the following reasons:

1) If caver A suddenly needed to descend due to extra flooding on the pitch, this would have been impossible due to caver B weighting the rope and would have to wait for caver B to get back down and off, meaning a time-consuming change-over etc.

2) Likewise if caver A suddenly needed to attach to and weight the rope whilst caver B was below a deviation on the rope below, the deviation would be impossible to pass and this situation could result in dangerous loading of the deviation anchor, depending on caver locations. This is an extra problem if the belay is not solid.

3) Two cavers trying to communicate through floodwaters is from experience nearly impossible due to the noise of the water.

4) What consequences would there have been if a large flood-pulse or similar had hit the ledge they were standing on?

5) There is no mention of whistles or knifes being carried. These items are important and may have become essential in this scenario. If these were not carried, every experienced caver should consider getting them.

6) Did caver A become detached from the rope on the ledge to allow caver B to prussick up?

A clear plan of action should have been agreed before setting off prussicking, allowing for possible contingencies (although not ascending at all would have been the most sensible option).

After this, I think the cavers made the best possible choices for their situation and dealt with the situation very well. The group shelter was an essential part of this story and the group should be commended for taking one all the way down King Pot.

A watch should always be taken with at least one of any party, especially on longer trips, for callout purposes, to know when to turn around and can be useful if heavy weather is forecast at a certain time. A cheapo Casio is a caver's favourite – worth getting one.

Caver C may not have been wearing suitable clothing – this is not a major point as I know students may not be able to afford a furry etc, but someone at the "social event" would have probably lent one out – If you feel un-equipped (or if as a leader you feel someone in your party is) then don't be afraid to ask to borrow gear from experienced cavers.

Caver C states they were tired but didn't mention it. The cave will always be there, there is no shame in turning around – for me a fundamental point in being a good, experienced caver is knowing when to turn around, not being afraid to say so and recognising this in others.

In summary, the team took the best possible actions and acted a very sensible fashion, once the cave had flooded and were adequately prepared with regards to sheltering. However the team were not adequately prepared with information prior to descending, were complacent towards the weather and other dangers and were lacking in experienced members for such a serious cave. I feel all of these points are down to an overall lack of experience and many lessons can be learned from this incident.

In addition, the actions of Cavers D and E were well considered, efficient and safe, an example to be followed.

4. Comments from those not having done the trip or involved

Caver X:
Did party/person leading know of affects of wet weather conditions to the cave. i.e. level of information they had. (I did not know that there were a hut full of club members). If they didn't know or were not sure, then should they have gone? You then raised your point that king pot was discussed but...the possibility of going down king pot was not fully proposed and so there was no intervention to the discussion?

I stated today that this information is very available and that guides in the hut at least could have been looked into. You answered that nothing specifically is written, other than grasshopper series becomes impassable in wet weather.

I felt that one other person should have been with the King Pot group who alongside Caver A had good or key experience especially as Caver A had two members with him that although physically fit and capable to go up and down pitches, did not have sufficient experience in caving.

And a training session issue:
I can't remember if I raised this point with you today. This involves our training session. It was my understanding that newcomers/less experienced members should at least be supervised if they wish to teach others. I have noticed less experienced teaching newcomers/novices with no supervision. This can lead to bad habits being passed on at this stage.

Caver Y:
Flooding:

- Absence of warning (e.g. in a guidebook) does not mean a hazard is not present.
- It is the responsibility of the trip leader to find out if hazards exist.
- Elizabeth pitch is wet in normal conditions. It would be reasonable to assume that the pitch becomes wetter and even impassable in wet weather.
- If the group had arrived back at the bottom of the pitch earlier then it is possible that the flood pulse would have arrived while somebody was prussiking up the pitch. One or more deaths could have resulted from this situation.

Group:

- The trip was unsuitable for the group. It may well be inadvisable to take freshers to King Pot anyway. They do not have enough experience to make a judgment on whether the trip is suitable for them. King Pot is a grade 5 cave and features in 'Not for the Faint-Hearted'. It is a different level of caving to what they had previously experienced.
- If taking freshers to hard caves, there should be a few experienced cavers to deal with any problems that may arise. For example, if the trip leader were to injure themselves, it would not be ideal if a fresher had to make their way out alone to raise the alarm. Inexperienced cavers often become exhausted on long or difficult trips, in which case they would need assistance from experienced cavers. It is difficult to judge how a fresher will cope with a difficult cave when they have only been to easy caves.

Response:

- The trip leader coped admirably with the situation he found himself in.
- The cavers who descended the pothole to assist the trapped group should be commended.
- The CRO gave up hundreds of man-hours as well as significant resources and should be thanked by the club.

Perhaps the best way to think about the incident now is to view it as a learning experience. Some mistakes were made but some correct decisions were made as well. We should all learn from both.