



Speleo Spiel 422

September–October 2017

Newsletter of Southern Tasmanian Caverneers Inc. ISSN 2208-1348

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Front Cover: *Isabelle on her way to The Royal Hobart Hospital after a successful rescue from Midnight Hole.*

Photo: Ola Löfquist

STC was formed in December 1996 by the amalgamation of three former southern Tasmanian clubs: the *Tasmanian Caverneering Club*, the *Southern Caving Society* and the *Tasmanian Cave and Karst Research Group*. **STC** is the modern variant of the oldest caving club in Australia.



Speleo Spiel

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Issue No. 422, September-October 2017

CONTENTS

Regular bits

Editorial	Janine McKinnon	3
Stuff 'n Stuff	Janine McKinnon	3

Trip Reports

Shirleys Pool-Surprise River	Jackson/Fulton	4
JF-387 Porcupine Pot	Petr Smejkal	5
IB-131 Old Ditch Road	Janine McKinnon	5
JF-387 Porcupine Pot	Stephen Fordyce	6

Other Exciting Stuff

IB-11 Midnight Hole Rescue	Janine McKinnon	7
	Alan Jackson	17
	Ric Tunney	21
	Han-Wei Lee	22
	Isabelle Chouquet	23
	Media	28

Fun and Diversions

Ye Olde Farte Zone	Janine McKinnon	31
Crossword answers	Janine McKinnon	31

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Editorial

This issue is largely dedicated to a report on the rescue from Midnight Hole on 13 July. This was our first accident in Tasmania requiring a full rescue, and the injury was serious.

Included in the report are accounts of the rescue from several participants' perspectives. This is important as people had varying roles to perform, were in different places in the cave, and observed different events. An overview of the whole scenario would not be possible from just one individual.

We also have a detailed account from Isabelle, the victim. I found this very interesting to read and it gives us all a chance to hear how a real patient sees the events unfolding around her. She makes quite a few observations of circumstances that I had not thought she had noticed at the time. Despite her pain and distress she was remarkably outwardly focused. I do think she made some misinterpretations, however her insights and memories were remarkable for a person in her condition. All patients are different, of course, but recognising that some patients have a heightened sense of what is happening around them is a good lesson for us all to learn in case we are tending to an injured caver in the future.

I said this in my last editorial, but it bears repeating: "The southern Tasmanian caving and rescue community did an outstanding job. The seamless collaboration between police SAR, cavers, paramedics and SES, and the mutual respect visible throughout the exercise, made me proud to be part of this community".

Why the accident happened is another matter and is addressed in the analysis section of the rescue report. However, not to put too fine a point on it, we, and Isabelle, were very lucky that she fell in a cave and location that was easy (relatively speaking) to rescue her from, and that this wasn't a fatality. I think the main take away lesson from this event is that the consequences of inattention and/or complacency can be dire and we all need to continually remind ourselves of this.

The fallout from this event and rescue is still continuing. Let us all hope that the deficiencies in one or two official systems that were revealed by this rescue will be addressed.

I hope that all interested parties around Australia can take home some useful lessons, mostly good but a few bad, from our experience.

Hopefully we can now get back to (caving) business as usual.

To that end, I have managed to squeeze a few trip reports into this issue. Excitement is a relative thing and the "normal" trips seem restful to me in comparison.

Spring is almost here after significant late winter snowfalls on Mt Field. Keep that in mind as you head into caves in the JF on warm, sunny, rain-free days.

Stuff 'n' Stuff

The International Speleological Congress (ICS) in Sydney is done. From all accounts it was a success and ran smoothly. Well done to the organising committee.

Alan Jackson is organising a Mt Cripps visit in October. It will be on the long (Hobart Show) weekend 26-29 October, with Paul and Lyndsey from Savage River Caving Club. Alan says: "Mt Cripps is a smallish limestone karst area west of Cradle Mountain in the north of the state. It has lots of caves (mostly pretty short and not very deep). Paul and Lyndsey have ongoing jobs in the area checking for new entrances, following up old leads and GPSing old entrances, surface surveying, etc. It won't be an epic weekend of non-stop caving but something rather different from what we southerners think caving is. The forest and surface scenery up there is pretty magical. There is a small hut (sleeps four maximum) but plenty of room for campers and tents". Contact Alan for details.



We can't really say we have cold conditions in winter
Photo: Daniele Sighel

Janine has finally had her Kubla leader application finalised. She applied back in 2010, at the same time as Alan Jackson and the now long gone Matt Cracknell. It is too long a saga to relate but it involves bureaucratic glitches, staff changes, Catch 22 scenarios, and obviously at some point the application spent considerable time at the bottom of a locked filing cabinet stuck in a disused lavatory with a sign on the door saying beware of the leopard (*nod to Douglas Adams*). Now she can stop caving, as historically many of STC's newly appointed Kubla leaders have done.

The editor would welcome any snippets that readers may come across related in any way, no matter how vague, to the subject of caving to include in this section.

She is starting to struggle a bit to find copy for "Stuff 'n Stuff". She is probably even going to keep putting in words here for several lines just to fill in the gap that she can't think of anything else to fill it with.

So please, please take pity on her and send something for her to include here for the next issue, and others beyond.

Interesting stuff would be best but desperation isn't picky.

Trip Reports

Shirleys Pool - Surprise River.

23-24 March 2017

Philip Jackson and Russell Fulton

Party: Russell Fulton, Philip Jackson

Shirleys Pool is an elongated doline approximately 20 m deep, 80 m long and 20 m wide with about 3 m of water depth. The bottom is choked with mud, logs and possibly road construction detritus. It is located less than 50 m south of the Lyell Highway between McKays Peak and the highway and is one of three similar water-filled dolines that are part of a large cluster of dolines occupying most of the saddle between McKays Peak and Mt. Arrowsmith. This cluster is in the north-west tip of an area of pre-Cambrian dolomite that runs south-east up to the 920 m contour of Mt. Ronald Cross and then south into the Loddon Range. Although geological mapping of the area was fairly sparse, there is evidence of dolomite between Mt. Ronald Cross and the Jane River area some ten kilometres south. Whether this is continuous or not is unknown. Regardless there are several square kilometres of dolomite with as much as 500 m of vertical scope.

The late 1960s and early 1970s saw many Southern Caving Society trips to the upper slopes of Mt Ronald Cross with the most fruitful of these led by Leigh Gleeson in April 1974, reported in *Southern Caver* Vol.6/1, and Easter 1976, reported in *Southern Caver* Vol.7/4. While the walk to the Scoparia Lake campsite is an easy day, many trips have been adversely impacted by snow and the Surprise River. The Surprise can rise from a few centimetres deep to a raging, impassable, two metre deep torrent within a few hours.

With so much karst and so little exploration Russell and I decided that the area quite clearly needed a jolly good thrashing about its bush. We began this thrashing by following Taffys Creek from its bridge on the Lyell Highway. Initially the creek heads south-west then after sixty metres, veers directly west. At this bend, the southern bank of the creek was a steep bank of dolomite with a square-walled indent about four metres wide, three to four metre vertical sides, ten metres long with a silt floor. This indent had all the hallmarks of either an old inflow or outflow cave. Since the catchment above is only two to three hectares it is possibly an old inflow of Taffys Creek. It may be that the bridge construction and roadworks carried out in the 1920s may have affected the streambed. A small portion of Taffys Creek flowed a couple of metres into the indent and sank into a shitty little crevice under the wall to emerge from a similar crevice a few metres further downstream. The floor of the indent would also be very moist at times of high creek flow.

From the indent, we followed the creek downstream with a diminishing dolomite slope on our left and floodplain on the right. After about 300 metres we left the creek and headed southeast over the now diminished dolomite slope for 100 metres where we came to a wide shallow depression, similar to a giant frypan, approximately 15 metres wide by 25 metres long and 1-2 metres deep with a boggy floor. We continued in an easterly direction following a dry 3 to 5 metres deep steep sided V-shaped valley which ended abruptly 10 metres or so west of the second of the water-filled dolines. This doline was circular, of about 40 metres diameter, with horrid steep clay banks and a dolomite buttress in the western quarter.

From this pool, the path of least vegetation resistance took us about 300 metres in an east-southeast direction to a small saddle that headed back towards Shirleys Pool. At this point, there was a line of dolines, almost side by side, and heading towards the pool. These dolines were in the range of 5-10 metres deep and similar in diameter but none contained any entrances.

At about 50 metres from the western end of Shirleys Pool we veered southeast over a small rise and downhill towards the Surprise River, about 500 metres away. There wasn't much outcrop on the way down but there were a couple more substantial dolines of 15-20 metres depth and diameter. Most of this area was in open sassafras and leatherwood forest with 100 metres or so of tolerable bog, horizontal and cutting grass. We emerged at the point in the river where it changes direction from flowing west to flowing south between McKays Peak and Eucryphia Ridge. The river flow was probably as low as it ever gets and, judging by the scouring of the banks, possibly two metres below its rainy season norms.

We had lunch on the riverbank with the sun blazing down through the break in the canopy and then went downstream for a couple of hundred metres looking for any tributaries. There were only a couple of soaks seeping out of the aforementioned bog. This section of the river consisted of deep plunge pools connected by narrow spouts and the rock was possibly some shitty blackish brown dolomite.

Heading back upstream we came to a large buttress of dolomite jutting into a deep pool. After climbing over I back tracked along the river and noted a dry microcave, 100 mm wide by 300 mm high, in the base of the buttress. On the opposite side of the river was a gleaming smooth, white, marble-like band of rock jutting into the river.

I was very interested in this rock but not interested in the swim to get a closer look so it'll have to wait for another time.

Upstream from the buttress and the bend the nature of the river changed from plunge pools to gravel and rock streambed, no doubt influenced by the steep eroding slopes of Mt Arrowsmith on the northern bank.

After about 300 metres upstream from the bend it was time to head up the hill to the highway and then the Derwent Bridge Hotel for dinner.

The backpacker accommodation at the hotel was basic but good enough and the meals were excellent. In the morning, we were entertained by a contingent of Victorian vintage motorcycle enthusiasts trying to start their ancient machines. No electric starts with electronic fuel management systems there.

To sum up no significant caves were found but the Shirleys Pool area may be worth further investigation and possibly a high grade detailed survey to help understand the relationship between the dolines. The area of sinkholes (see Tasmap, 1:25000 series Mt Arrowsmith) at the lower end of Eucryphia Ridge adjacent to the Surprise River would be worth a look.

I hope we can get back to the area next summer.

JF-387 Porcupine Pot

Bypass pitch de-rig, discovering an awesome shortcut

8 July 2017

Petr Smejkal

Party: Ben Armstrong, Serena Benjamin, Petr Smejkal

After we discovered that the new pitch (three previous reports: *SS 421*) goes directly into already known parts of the cave there was no need to keep 80 m of rope hanging there. This trip was dedicated to recovering the ropes, and having another look for possible leads away from the big rockpile. We did not plan for a long day underground so I intended to do a bit of track cleaning on the way in. I moved a few logs, mostly wattle trees. It was easy.

Caving with Ben and Serena is easy and getting down was fast. The water was slightly higher due to recent rain and snowfall, but not a big drama. The first wet crawl was a bit wetter than on the last few trips but that was all. We passed the crawl and climbed up to the bypass pitch. The ropes were still there, hanging safely. We abseiled and went for the rockpile exploration.

While walking down the stream we noticed a side passage. It did not look inviting but we thought we would have a look but not immediately. At the rockpile we spent about an hour trying to find something. Any lead we looked at did not continue.

Then we got over it and thought it was time to start with the de-rigging.

When we returned to the stream, I got excited about exploring the side passages. While Ben and I were looking around at some stuff, Serena went off to start the bypass climb. Eventually Ben and I ended up at the side passage that we noticed on our way in. We had time so I went to explore while Ben was waiting at the junction. After a while of climbing up and down and crawling

between loose rocks, I heard water. At first, I thought it would spit me out somewhere near Ben- but the stream I reached was much smaller than the stream I had left.

It took me a little while to realise where I was. I followed the stream a little way up and then it hit me: I was standing in front of the very first wet crawl. My head could not take it in for a little while but then I realised how much the stream meanders. For a while I was considering returning to the original passage and to peek-a-boo at Ben but the shortcut was only a five minutes crawl and the run around would take me at least five times that long.

I went back to where Ben was waiting the same way I had come. On our way out Ben was keen on doing the roof sniff. I let him do that and I de-rigged the bypass pitch on my own. When I finished Ben had been waiting about 30 minutes; he actually overtook Serena who started the bypass climb before me.

We got out of the cave still in daylight. It was another mind-blowing trip to Porcupine Pot, this cave always surprises. Well, we will see what we find next time. Andreas is planning a dive; minions required, so get along.

IB-131 Old Ditch Road (ODR)

16 July 2017

Janine McKinnon

Party: Serena Benjamin, Gabriel Kinzler, Ola Löfquist, Janine McKinnon, Ric Tunney

This was the third trip in our “take UIS left overs caving” programme. The last two had had a 50% success rate according to the criterion of getting out without needing rescue, so we were going well. Lucky third we hoped.

Ric, Ola and I met up with Serena and Gabriel at the Mystery Creek car park at 9 am and got walking along the Exit track pretty promptly. As usual in winter, the track was a bit of a loose, muddy mess. There had been no new tree falls since our track clearing exercise a couple of months ago though so that was nice.

We got underground around 10:30 am, with me leading in and starting rigging the first pitch. This really is a far more complicated route than it should be, which is straight down the obvious way. If I go there again I might look at changing that access. Maybe. It does work, it is just annoying.

All made it down the four pitches without incident. Gabriel found the approach to pitch two an interesting learning experience.

These sorts of pitch-heads accelerate a caver’s skill acquisition, which is all for the good. You can spend years doing bog standard pitches and it doesn’t help you learn to deal with the more interesting ones.

Once in Exit Cave proper we had lunch and then headed off for a look at The Ballroom.

First, though, we had a bit of a confab about who was going back up ODR to help with the derig. I had not wanted to do a pull through trip, just in case water levels in Exit were very high, and also I was a bit “over” pull throughs for the time being. We planned to check water levels on the way to The Ballroom.

I had said from the outset that I was happy to derig but would like another with me to help get the ropes out of the top entrance. Serena had a sore shoulder and wanted to walk out, Ric will always walk out if he has the option,; that left Ola or Gabriel. Neither had been in Exit before, so both wanted to see the entrance series. Both had consciences too and didn’t want to abandon the old woman to do the derig alone. Such nice boys. As Gabriel can come back, and Ola can’t, Gabriel finally lost the conscience tug-of-war.

The water levels in the stream were quite low, so the separating of the two parties for exiting was confirmed. We all had a nice wander through The Ballroom for an hour or so, and then we went our separate ways.

Gabriel and I had no problems with the derig. I sent Gabriel up each pitch first and he helped pull up ropes and pack them into bags while I derigged the pitch heads. As we were packing the rope for pitch two Ola appeared at the top of pitch one. The other party had arrived back at the junction of the two surface tracks and he had come back in to take a bag from us. This was a lovely gesture and much appreciated.

When we got back to the Exit track Ric was waiting but Serena had started walking back to the car. We did a slight gear redistribution for pack weights and then started walking back. We just made it back to the cars with enough light not to need to use our caving lights.



A happy-looking crew @ Pitch one

Photo: Gabriel Kinzler

JF-387 Porcupine Pot

29 July 2017

Stephen Fordyce

Party: Ben Armstrong, Serena Benjamin, Stephen Fordyce, Andreas Klocker.

An intrepid crew of cave sherpas and one designated diver set out to conquer the upstream sump in Porcupine Pot. This sump is significant because the streamway which flows out of it is part of the "main drain" master cave which eventually emerges at Junee Cave many kilometres away.

It's a technical and wet exercise to get to the sump - taking about 3-4 hours and involving many vertical/ropework pitches (some very tight/nasty) to get to the streamway, and plenty of technical and very wet squeezing once you're there. If you love frequent immersion in 6° C water, this is the cave for you!! If you can arrive at "Trump Rock" (the sculpted, orangey and rather out of place rock sitting in the middle of the last convenient gear-up chamber) with a dry, well, anything - you are doing pretty well.

With a crew of Porcupine veterans we made record time to Trump Rock, and (depending on inclination) donned dive gear, soggy down jackets, or a brave face for helping drag tanks to the sump. It's about 100 m of more miserable wet crawling to the sump, but only once arriving did we realise that much more weight would be needed to have any hope of getting underwater. Turns out some had fallen off the weight belt while it was undone, and were lost in the streamway.

Despite valiant and desperate efforts by Andreas to walk underwater on the unstable ceiling and Steve yelling unhelpful things (and offering a caving pack filled with rocks) while lying half in the water for an hour, the score was Cave: 7, Team: 0. But it did resolve the conjecture about whether the sump went anywhere, with a nice straight passage trending down and big enough to easily swim through, and at least 1.5 m of visibility (luxury!). Just when we thought this project might be coming to an end...

After considerable faffing and hot drinks back at Trump Rock, we had the gear safely stashed or packed, and we left at 6 pm. Special mention to Ben, who requested some "Top Shelf" food to be brought along in return for his mad sherpa skills. Raiding Andreas' cupboard, we settled for middle shelf and proceeded to talk up the secret "pinnacle of caving cuisine". Halfway down the cave the secret was correctly guessed when Ben proclaimed his hatred for smoked mussels, and so the high quality "Black and Gold" brand tin of mussels remained unopened...

With unexpectedly light bags we were back on the surface in record time a little after 9 pm and home by midnight. Porcupine Pot is not done yet!

Other Exciting Stuff

This is the first rescue of an injured person from a vertical cave in Tasmania. Below is a detailed report of the rescue, including personal accounts from different positions in the operation.

It is long, very long, so seat yourself comfortably, and here we go... Ed .

IB-11 Midnight Hole. Another trip, another rescue

13 July 2017

Janine McKinnon.

Party: Serena Benjamin, Isabelle Chouquet, Gabriel Kinzler, Ola Löfquist, Janine McKinnon, Ric Tunney ... followed by many from STC, Tasmania Police (TasPol) Search and Rescue, 3 State Emergency Service (SES) SAR, 3 Ambulance Tasmania.

Ola and Isabelle had been the only takers Ric and Janine had had for their field trips for the ICS congress being held in Sydney in late July. Obviously, the trips were cancelled but they were told to come and they would be taken caving privately, but as part of the ASF coverage for the ICS. This was the first of four planned trips.

Both Isabelle and Ola are experienced cavers. Ola is Swedish and Isabelle is a French woman living in Switzerland for 20 years. They both do vertical caving and came with all the necessary equipment.

Janine had planned to start really easily, with a simple Midnight Hole (MH) pull through, so they could settle into Tassie caving, and it could be seen how they performed, physically and technically.

Famous last thoughts.

It was a slow start, what with bakery and photo opportunity stops on the drive down to Ida Bay, and the party got underground at 11:45. Janine was the rigger for the trip. The group was using 9.5 mm rope and a pull through using an alpine butterfly knot with a carabiner clipped through the knot loop and across to the abseil side of the rope was used. She rigged the first pitch, and explained carefully how to abseil single rope on a pull

down set up. Everyone except the last person was using either a Petzl Stop or Simple descender. Janine demonstrated what to do, putting her cow's tail into the anchor point as a safety, checking the side of the rope to use, testing that was correct by moving the rope from side to side, attaching her descender to the correct side of the rope, testing again, loading and testing the rope, and finally removing her cow's tail when safely under load on her descender. They all agreed they understood, and were happy. Then Janine started into the cave.

Ric observed Ola, Isabelle and Gabriel attach to the rope correctly on the first pitch, and descend.

Serena came next with the rope for pitch two, and Gabriel was third with the next rope. The others followed, with Ric coming last and managing the pull down using a Petzl rack. Ola came second last to help with the test pull down Janine and Ric always do before the last person descends. Thus Isabelle was the fourth in the line of six.

All went smoothly until the fourth pitch; the 8 m pitch.

This is where Isabelle fell.



Isabelle on Pitch 3.

Photo: Gabriel Kinzler



Serena at the first pitch.

Photo: Gabriel Kinzler

Accident and Rescue

Janine, Serena and Gabriel had all successfully descended the 8 m pitch and were standing on the ledge below talking whilst waiting for Isabelle to arrive, and also the ropes that were needed to descend the next pitch (34 m) to come from the back of the party. Janine looked up and saw Isabelle preparing to descend, and starting down the pitch. Isabelle was under control at this time. Janine looked away to talk to the others and a few seconds later heard a small cry quickly followed by Isabelle falling at her feet. The time was 12:47.

Isabelle was conscious but lying very still. Janine told the others not to touch her and not to talk to her for approximately 20 seconds to allow her time to recover her breath and mentally check herself for injury. Also to allow her a short time to recover from the shock. There was no visible blood. After approximately 30 seconds Janine asked her a series of questions to ascertain her physical condition. Janine told her not to move whilst she was evaluated.

Medical evaluation

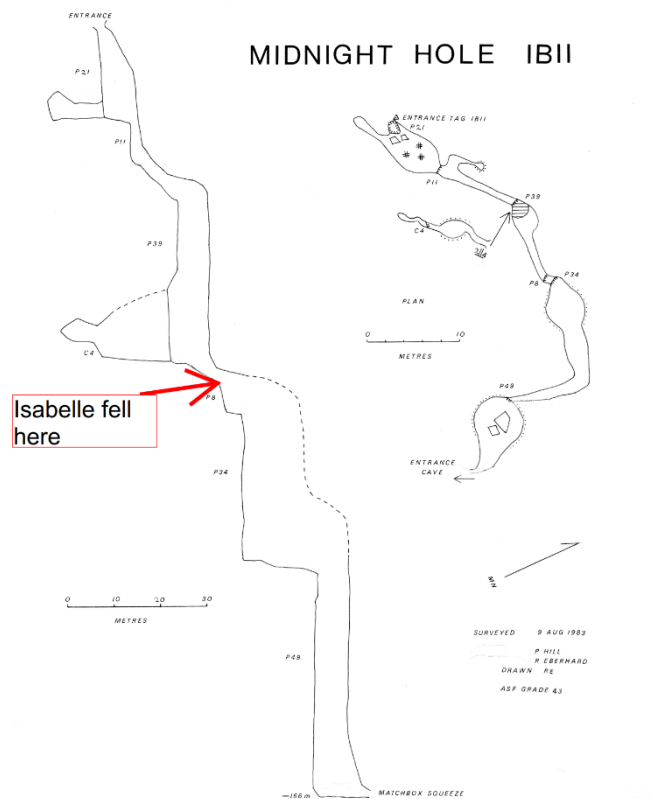
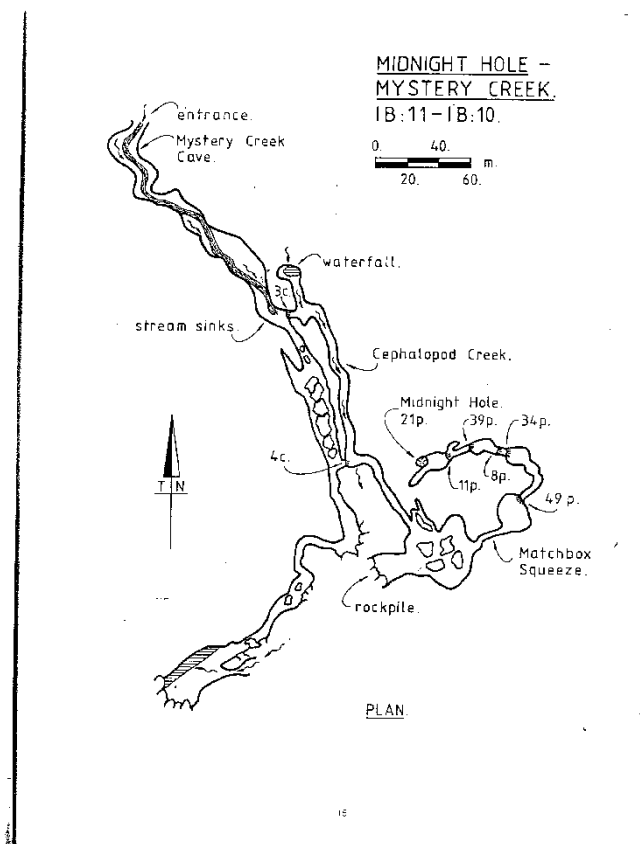
Isabelle reported that she had no pain in her neck, back, arms or left leg. Her right thigh was very painful. Her right hip was a little painful but not extreme. She was asked by Janine to wiggle her toes a little, and this she was able to do without difficulty. She reported feeling in all parts of her body. She thought she hadn't broken her right femur and she tried to sit up. This caused extreme

pain. Her assessment was that maybe she did have a fractured femur after all, and that this was the only serious injury, apart from bruising.

She remained immobile whilst Serena and Janine inspected her right leg. It was swelling rapidly and the right thigh appeared slightly shorter than the left to Janine. Her legs were bent which made this determination not certain, however coupled with Isabelle's personal judgement it seemed very probable that the femur was fractured. There was still no blood at this stage, which was now approximately 4 minutes after her fall. There was no bone visible through her caving suit.

Serena and Janine started an external examination of Isabelle starting with her head. However neither of them was prepared to cut or open her clothing or caving SRT kit whilst this examination proceeded, so it was not a complete assessment of her physical condition. However Isabelle was still conscious, lucid, calm and answering questions in an apparently rational manner. This added confidence to the assessment of her overall physical condition. Janine and Serena, together with Isabelle who was contributing calmly and sensibly to the assessment, determined that the fractured femur was the only apparent injury.

This was approximately 6 minutes after her fall.



These maps show why the most sensible route for the rescue was back up Midnight Hole.

Isabelle's medical examination in detail:

No blood was visible anywhere.

- Her right thigh was swollen to the stretch capacity of her caving suit leg.
- Her right thigh appeared slightly shorter than her left thigh.
- She was lying partly on her back but with her weight mostly on her left side.
- She had no visible cuts or abrasions.
- No bone was visible.
- She had no other breaks that were detectable.
- Her neck appeared undamaged and she had no pain.
- There were no visible contusions or injuries to her head. Note: She was wearing a helmet.
- Her spine appeared undamaged and she had only minor discomfort in the lower back. The level of discomfort correlated to minor bruising from the fall.
- She had full feeling and movement in all extremities.
- She had not lost consciousness at any time.
- She was lucid, calm, rational, aware of time, place, location, names of other persons present and could relate clearly and accurately what had just ensued.
- Pupils were equal.
- She had severe pain in her right thigh.
- She had only minor pain in her right hip and lower back.
- She had no other pain.
- She was not tender to the touch anywhere (we did not touch the right thigh).
- Her breathing was steady and normal.
- She could take a deep breath without pain or discomfort, which she did occasionally due to the pain in her right thigh.
- She reported no other "strange" feelings internally.
- She was not cold.
- Her facial colour was good and her lips were not blue.

Isabelle was still lying in the position she had landed in. This was on her back with hips slightly rotated to the left and legs bent.

Janine and Serena determined that, as far as their current assessment could determine, she was unlikely to have any serious injuries other than a fractured right femur. Janine was concerned that internal damage to blood vessels may have occurred at the time of the break and that internal bleeding may be occurring. No evidence of this was seen at this time of initial assessment but close observation of the patient for this, and any other developing medical issues, would need to be kept.

The time Isabelle fell was noted. Serena took a baseline pulse at the completion of the examination. Her pulse was noted to be 68 bpm. Respiration was steady and even. Isabelle was not hyperventilating. Her respiration rate was not taken as she was talking frequently. Her hands were very warm, her facial colour good.

She did not appear to be in psychological shock. She remained calm, lucid and involved in the discussion regarding her situation. She did not appear to be entering physical shock. She was not shivering or displaying other symptoms of physical shock.



Isabelle as comfortable as we could make her.

Photo: Gabriel Kinzler

The Rescue starts

Ola and Ric arrived on site at 12:57. The terms of the accident and Isabelle's medical assessment were related to Ric and Ola. Her psychological condition was also reported, and noted, by them. A discussion ensued as to how to best proceed. It was decided that Serena and Janine would stay with Isabelle as they both had first aid experience and had done first aid courses, Gabriel would stay with the patient as he spoke fluent French and was a French to English translator by profession. (Isabelle spoke English, but not particularly well.) Ric would proceed out of the cave via the route of Midnight Hole and Mystery Creek to raise the alarm. Ola would accompany Ric.

Ric took the remaining rope and rigged the next (34 m) pitch (5) as single rope. He intended to rig the bottom (49 m) pitch (6) as single rope also. These ropes would be left *in-situ* for use during the evacuation, if needed. Ric and Ola left their caving packs, complete with all supplies they were carrying, with the support crew.

Ola started down pitch 5 at 13:02. Ric followed immediately after.

The wait

As Ric and Ola departed Janine, Gabriel and Serena began to make Isabelle as comfortable as possible. A long wait was expected. Eight to ten hours was the time frame that Janine and Serena expected to wait before the first rescuers arrived. They were concerned about physical comfort and the possible onset of shock and/or hypothermia.

Isabelle said she was in a reasonably comfortable position, for the time being. She was lying on the rock floor however, and this would become very cold quite quickly. The support team was very concerned about hypothermia, both from the risk it posed to the patient's health itself, and also the great pain and discomfort it would cause Isabelle if she started shivering from cold. The thigh muscles contracting with shivering would be extremely painful. The support team had six packs available. They emptied all of these and used three of them as insulation under Isabelle, as best as was possible, which was not much at this time.

They did not want to lift her but managed to raise her slightly using her harness to place a pack under her left



Serena practices for a religious conversion

Photo: Janine McKinnon

hip. The other two packs were placed under her left shoulder and head. The pack supporting her head was filled to provide a pillow. However this caused her so much pain that the packs were not moved under her very far at all. This gave her only a little insulation from the cold rock.

The group had three emergency insulation blankets (space blankets) available. Ric, Janine and Isabelle had each been carrying one. Two were placed over Isabelle, covering her from neck to feet. The third was kept in reserve, in case it was needed later to add to Isabelle or for the support team if any of them started suffering seriously from hypothermia. Isabelle also carried a gel hand warmer which she now activated.

At this time Isabelle was warm, comfortable, stable medically (to the best of our knowledge) and psychologically calm and as relaxed as could be possible in the circumstances, however she still had a lot of pain. The time was 13:15. She now took a pain killer that was part of her personal medical kit. Serena noted the time on paper.

Her clothes were not removed, or in any way adjusted. It was felt that the possibility of further injury was more likely if the team tried to take off any of her clothing. It was felt that the suit was providing support and compression to the injured leg and to cut it open would be more likely to have a negative outcome than to leave it. Hypothermia was a major concern, so removing or opening her upper clothing was thought to be a bad idea. Her clothing was dry. Her harness was left in situ as she did not find it uncomfortable and it was thought it may be useful later in the rescue process.

The other three packs were placed on the floor as insulation for the support team to sit on. After 20 minutes they were able to lift Isabelle just enough to move the three packs under her body a bit more to provide reasonable insulation from the rock.

The team settled down to wait for the rescuers to arrive.

Janine and Serena were concerned about the possibility of a deterioration in Isabelle's physical condition or mental state, thus sitting in silence for a long period was not considered a good plan. The team started general talking amongst themselves, and including Isabelle frequently.

This way they could see if she was alert and what state of consciousness she displayed. It was also thought that calm, relaxed and even cheerful talk would help to alleviate any stress or anxiety that Isabelle may be feeling about the mental and physical state of her companions, and their confidence in their control of the situation, and confidence in the rescue to ensue.

Gabriel was able to translate any problems with language, and also talk to her in French periodically to determine that she was not deteriorating in her mental state.

At 13:45 Serena again took her pulse and recorded this. It was 68 bpm again. At this time she also obtained her date of birth and Janine asked her a series of questions relating to the date, place and situation. She was accurate with all answers. She retained memory of the entire time elapsed for the trip.

The team then continued to discuss life, the universe, and everything literally, with frequent involvement by Isabelle. Isabelle regularly asked after the comfort of the others and was concerned that they were getting cold. Relaxed discussions helped to alleviate her concerns for the support team (they thought).

At half hour intervals Isabelle had her pulse taken, and recorded by Serena. At these times it was easily possible to determine her level of thermal comfort by feeling her hands. They were always warmer than Serena's and Janine's.

At the time of these medical observations Janine asked Isabelle questions relating to pain elsewhere than her right thigh, and any observations of internal changes that she may have felt. Periodically the blankets were lifted to look for blood or changes that were visible. None were seen.

Her pulse was taken and recorded at half hour intervals. Respiration rate was attempted to be taken but Isabelle always spoke before it could be determined. It was noted that at no time was she hyperventilating or displaying erratic breathing. Her breathing rate remained observationally normal throughout the waiting period. Her facial colour likewise remained constant.

Periodically she was asked questions to determine her mental state, other than her observations in the conversation in general, which were at all times lucid and sensible. She always displayed a normally alert and aware mental state.

She was asked at roughly (but not timed) 15 minute intervals if she was cold, feeling physical changes or distress. She never reported feeling cold.

After an hour or so (not recorded as to time) she became uncomfortable lying on her left buttock. She was lifted very slight by using her harness and she was able to reposition herself a few degrees towards the right. This very minor movement caused her great pain in her right femur and she took several minutes to recover. It is to be noted that at no time did she yell, scream or call out. She simply breathed heavily and told us calmly of the effect the slight movement was causing.

At 14:15 she took another pain medication as the pain had increased considerably.

After several hours her left buttock became very uncomfortable and she asked to be moved again and to have her leg straightened. It was agreed she would be lifted slightly to allow her to move her buttock slightly but the request to straighten the legs was denied. Janine was very concerned that moving the broken leg might result in severing of a major blood vessel. This would lead to serious internal bleeding, probably resulting in death before the rescue team arrived. Also, given the pain that very slight repositioning caused, straightening the leg would result in a level of pain to Isabelle that the support team would not consider causing until, or unless, absolutely necessary.

Isabelle decided not to take another pain killer at this time, despite increasing (returning) pain. This was just in case the rescue team arrived in the next hour or so, and having taken three pain killers could affect their ability to give her more effective pain relief. This proved to be a very prescient decision on Isabelle's part.

At 17:15 Isabelle observed that she thought she could hear people arriving. The team listened, heard nothing and suggested that she was imagining this, and started a discussion on how easy it is to imagine voices when sitting alone in a cave. It was perceived to be far too early to expect aid to be arriving. However five minutes later all members of the party could hear noises from both above and below.

Michael (Pax) arrived up the rope from below at 17:25, and Han-Wei arrived almost simultaneously from above at 17:26. Janine could hear Stefan starting up the rope (pitch 5) from below once Pax had called "rope free".

Serena performed a medical hand-over to Han-Wei and also gave him the paper with her medical observations. Anna arrived close behind.

There were now seven people on a very small ledge, one of them lying down, with an eighth about to arrive very soon. Janine suggested to Serena that they should move up to the top of pitch 4 as they were now no longer needed at the site. Gabriel was requested to stay with the patient, to translate when necessary and to be able to talk to her, and reassure her, in her native language.

From this point Janine did not see the patient again until Isabelle passed over her on the SKED stretcher, that Damian Bidgood had brought down the cave, half way up pitch one.



Isabelle waiting for rescue. Photo: Gabriel Kinzler



Anna and Han-Wei do their thing (above) and Damian helps (left)



Photos: Gabriel Kinzler.

Janine continues, away from Isabelle

Janine moved up to the top of pitch 4. Serena joined her immediately. They waited for approximately 10 minutes whilst Alan Jackson installed several rebelay bolts on pitch 3 to remove rub points.

When Alan arrived he first asked what the health status of the three members of the party who had waited with the patient was. Concerns for exhaustion and hypothermia, and possible mental issues such as stress and anxiety, were the considerations. Janine reported they were all well. Alan asked if any of them needed to leave the cave immediately and Janine and Serena both responded that they were fit and capable of remaining to help with the evacuation. Janine had already ascertained from Gabriel that he was fit and happy to stay with Isabelle for the duration of the rescue. His help with language was perceived to be comforting for the patient and very helpful for the rescuers and paramedics.

Janine remained with Alan and Serena until the drill was available and then ascended to the top of pitch 3 to give it to Josh for aid in installing the lift for that pitch. Josh already had a pulley system mostly assembled but an extra rigging point was considered prudent by Janine and Josh. Janine aided Josh in selection of a suitable location for a bolt and Josh installed a concrete screw.

Janine waited with Josh and Ingrid for some time and relayed messages by voice up pitch 2 as progress with stabilising and transporting Isabelle continued. Messages from the top were also relayed down the cave by voice. Radios were on hand but voice communications was found to be more effective over one pitch distances. The radios were used over longer distances.

After Alan had installed the third and highest redirection on pitch 1 Janine took position at the redirection to release it as the stretcher reached the redirection.

This she did, however the munter hitch would not release as planned and Han-Wei was called upon to manually loosen the knot as he arrived beside the stretcher. The stretcher then continued to be hauled to the top of the pitch.

The pitch head on pitch 1 is quite tight and some time was spent manoeuvring the stretcher to fit through. The stretcher was being lifted vertically up the pitch, as it had been on all previous pitches. Isabelle was partly supporting her weight on her left (uninjured) leg through all the lifts. With the delay at the top of pitch 1, coupled with the time already spent lifting her up the lower pitches, she was starting to experience quite severe pain in her undamaged left leg and hip, despite the pain medication administered by the paramedics. She coped extremely well with this.

Janine removed the redirection rigging as she exited. She found a large team readying Isabelle for transport down the track to the helicopter.

All cavers at the entrance were fully kitted up in caving gear, including SRT kit if they were SRT cavers. This was a good back-up measure in case they had been needed in-cave.

At approximately 01:00 transport of the patient down the track started. Janine remained with several others to help extract packs from the entrance of the cave. The cavers who had remained on the surface helped with packing gear and transport of gear.

Janine started walking down the hill as the last of the gear was packed and those remaining prepared to walk out. All rigging gear, including the bolts installed for the rescue, had been removed from the cave by the “clean up” team of cavers Stefan and Pax.

Janine passed the stretcher part way down the hill and then stopped for a very welcome hot drink at the quarry, supplied by Amy.

She continued back to the car park approximately 15 minutes later and briefed the police woman (senior officer of some sort? She didn't get a name) waiting there on the progress of the stretcher and efficiency of the rescue. The rest of the rescue crew arrived sometime later (20 minutes?) and a quick debrief of all members of the rescue crew was held by police before everyone headed for home.



*Isabelle being placed in the SKED (above), and rescue underway (right). Han-Wei paramedic attendant (right)
Note her hands are free to allow her to self protect*

Photos: Gabriel Kinzler

Summary

- Isabelle fell approximately 5 m of the 8 m pitch 4 of Midnight Hole.
- She fell at 12:47 on 13 July 2017.
- Her medical training, experience as a cave rescuer, and calm manner enabled the assessment of her injuries and initial treatment to be accomplished effectively and efficiently.
- Isabelle had sustained a simple fracture of the right femur. This was the only major injury. Bruising was a secondary injury.
- Ric and Ola proceeded down through Midnight Hole and out Mystery Creek Cave to seek rescue.
- The first paramedics, and relief cavers, both arrived at the accident site within minutes of each other, and after 4½ hours from the time of the fall. This was at 17:30.
- Paramedics had experience as SRT cavers with STC.
- TasPol SAR have experience in SRT caving.
- Isabelle was lifted back up through Midnight Hole to the surface. She reached the surface at approximately 00:30.
- Both SRT caving and TasPol SAR lifting rescue techniques were used.
- Isabelle was lifted into the helicopter at approximately 02:00 on 14 July 2017. This was 13 hours after her fall.

Equipment and Systems used

- The rope used for the pull through caving trip was 9.5 mm static.
- Alpine butterfly knot and carabiner across to other (abseil) rope was the technique for pull down.
- All participants of the original party were using Petzl Stops or Simples, except the final person using a rack.
- Cavers rigged the haul system on the 8 m pitch using 11 mm rope and a counter balance system and independent 9.5 mm belay.
- TasPol SAR rigged the 39 m pitch with 11 mm rope and a Z pulley system with belay.
- Cavers and TasPol SAR (Alan and Damian) rigged the 11 m and the top, 20 m pitch, as a single haul. There were 3X redirections to the bottom of pitch 2 with a counterweight from the top of pitch one with 11 mm rope. An independent belay with 11 mm rope from the surface was also employed.
- The attending paramedic prusiked up a separate rope to that hauling the stretcher. He prusiked beside the patient. He was on 11 mm rope. Alan rigged this rope.
- TasPol SAR SKED stretcher was used for the in-cave rescue and this was placed in a rigid basket stretcher (Stokes stretcher) for the carry down the hill to the helicopter.
- Much of the rigging gear used for the rescue was STC or personal cavers' kit. TasPol SAR equipment was also used. No attention to who owned/supplied the gear was made during the rescue.
- Cavers supplied their own personal caving kit.
- A combination of STC, caver personal and TasPol SAR ropes were used.
- Paramedics wore their personal caving kit.
- Radios were police property.
- Both stretchers were police property.

Postscript

Isabelle arrived safely at the Royal Hobart Hospital approximately 20 minutes after leaving the rescue site. She was operated on at approximately 10:00 on 14 July 2017. The operation was successful with a pin placed inside her right femur, with no complications. She remained in hospital until Monday afternoon, 17 July. She was discharged to the care of Janine McKinnon and Ric Tunney, with whom she stayed and recuperated until Friday afternoon 21 July, when she flew to Sydney. She continues to recuperate well and even managed to attend two days at the UIS congress.



(left) Isabelle safely on the surface and being prepared for transport to helicopter.

(right) Some of the rescue and surface support team after the successful operation. They seem to be happy.

Photos: Gabriel Kinzler

Analysis

This is a personal evaluation only - by Janine McKinnon

- Ric and Janine have done many, many through trips in the Midnight Hole/Mystery Creek Cave System over several decades. They have taken very basic beginner trips, visiting cavers, family, and even a work colleague on the trip. The system they have used employs an alpine butterfly knot with a carabiner through the loop of the knot attached to the abseil side of the rope. This removes any chance of the knot pulling through the large ring. This has previously been an adequate way of organising the system.
- Isabelle was a caver of self-reported 20 years plus experience. She stated that she was an accomplished vertical caver and member of the Swiss cave rescue team, with primary role as paramedic due to her profession as a nurse. Janine (nor any other members of the caving party) had caved with, or indeed met, Isabelle prior to her arrival in Tasmania the day before the trip. Careful instruction and demonstration of how to safely abseil with a Stop (or Petzl Simple as Isabelle was using) was given to all three members of the party who were not regular caving partners of Janine. All, including Isabelle, confirmed that they understood what to do. Isabelle (and Ola and Gabriel) were observed by Ric correctly approaching the first pitch head, attaching and abseiling.
- As Isabelle was understood to be a very experienced vertical caver (as was Ola) it was assumed by Ric (and Janine in principle) that after this demonstration of the correct procedure for abseiling she could be safely allowed to continue down the cave without direct supervision by Ric or Janine at each pitch head. In hindsight, this was not the case.
- Isabelle's fall was the result of inattention, lack of care and failure to follow proper safety procedures when abseiling, and abseiling single rope on a pull through trip in particular. She had not used her cow's tail at the pitch head. She had not tested the pull down to conclusively determine that she was on the correct side of the rope for abseiling. She had (reported verbally several times) attached to the (wrong side of) the rope and then climbed down the first 3 m of the pitch. Thus she did not apply weight to the rope until she started to abseil the last 5 m. Therefore she had not tested loading the rope at all before starting the ill-fated abseil.
- This is the first actual cave rescue of an injured person that has occurred in Tasmania. The speed with which the rescue was assembled by Alan and TasPol SAR was remarkable.
- Isabelle remained calm, lucid and cooperative through her ordeal, from the moment she landed at the bottom of the pitch. This made every aspect of the rescue significantly easier and less traumatic for her caving party and the rescuers than would have occurred with a more emotional patient. Likewise, her medical training as a nurse, and experience as a cave rescue team member made her a much more tractable, informed and helpful patient than one could ever expect. This made the wait much easier on her companions, aided in her medical assessment by Janine and Serena, allowed them to effectively manage her comfort and reduce contributing to her injuries whilst managing her during the wait, and contributed to the speed of her evacuation.
- We were all very lucky that this serious injury occurred in a dry cave, with no draft and a relatively comfortable physical location. If the patient, or her attendants, had been wet, stationed in a wet location, with cold air movement or confined space the physical state of both the patient and support team when the rescuers arrived would have been much worse, and possibly dire.
- The quick egress of Ric and Ola, and Ric's calls to the proper people to activate an effective rescue enabled a rapid response to be initiated.
- Ric gave clear and precise information to Alan and Damian on the situation. This helped with the speed of the rescue team assembly and transport, equipment and personnel required and allowed the rescuers a chance to mentally rehearse what would be required for the rescue as they knew what the status of the patient was (as far as was known at the time of the accident).
- Ric specifically requested that Han-Wei and Anna be sent as the paramedics. He insisted that they were the ones who would have the required skill to reach the patient quickly and safely and to perform their jobs safely and effectively in a vertical cave extraction. This was very important. It is very unlikely that Anna and Han-Wei would have been sent if not so strenuously requested. Any other paramedic would have been incapable of performing the job safely, or possibly at all. The thought of straightening Isabelle's broken leg for transport without serious pain meds and moving her without traction, or a paramedic, haunted me throughout the wait.
- As far as multi-pitch, vertical stretcher extraction goes this is probably the easiest location possible in southern Tasmania, or at least one of the easiest.

- As Alan states in his report, all members of the in-cave and surface teams worked cooperatively, smoothly and efficiently together. This is testament to the time many of us have spent training together over the years for just such a scenario (and occasionally caving for pleasure together). The mutual trust, respect and familiarity should not be underestimated. Because the TasPol SAR team respected the cavers, they allowed them to be solely responsible for rigging one of the pitches. They (Damian) worked in conjunction with cavers to rig a second pitch and mixed teams rigged all remaining pitches. This made the rigging and evacuation of Isabelle much quicker. The easy rapport between the different groups also contributed to the speed, efficiency and mental comfort of all rescuers.
- Police are officially in charge of any rescue. This was true of this rescue, with Damian Bidgood the person in overall charge, except in reality all decisions were made in a collegial manner. This is again due to the excellent personal relationships build up between current STC cavers and current TasPol SAR team.
- Isabelle reported to Janine (with whom she was lodging during her time in Tasmania) that the familiarity, friendliness and mutual respect of all members of the rescue team was apparent to her from the moment Han-Wei arrived at her side. She found this very comforting through her extraction. She was greatly impressed, and reassured, by the general calmness and light banter of the rescue party. This was also a result of the relationships we have all built up over time.
- The speed of evacuation was excellent.
- The safety of the patient, or any others, was not compromised by the speed of the evacuation. All lifts were done extremely safely.
- It is a very good thing that the track to the cave from the Mystery Creek Cave track had recently been upgraded. The track is now well taped and it was diverted around three large tree falls. If the track was still in its prior condition finding the cave would have been problematic for many of the rescue party and moving Isabelle's stretcher down the hill much more difficult.
- Serena has a current Senior First Aid qualification. She has done a Wilderness First Aid course but that had recently lapsed.
- Janine and Ric have both done Senior First Aid courses multiple times over several decades. Currently they have lapsed.
- Isabelle is a practicing nurse and current paramedic member of a cave rescue team in Switzerland.
- After the initial assessment of Isabelle's condition (at the time of the accident) Janine assessed what equipment the group was carrying. This was in preparation for a perceived long wait.
 - We had only 3 emergency (space) blankets in the group of six: They belonged to Janine, Ric and Isabelle.
 - Isabelle alone had strong pain medication, which she found made her extreme pain tolerable. She was able to secure this as a nurse working in a hospital. This is a problem for those of us who do not work as medical personnel. Janine carried a small first aid kit but only had Panadol as pain relief.
 - Isabelle alone carried a heat pack. She found this very useful during the wait.
 - One member of our party did not have any spare clothing to put on for the wait.
 - There was plenty of food in the group.
 - There was sufficient water carried in the group. However not all members had water.
 - Only Isabelle had a pencil. No-one had paper. A pamphlet margin from Isabelle's pain medication packet was used for note taking.
 - Each member carried a cave pack. When Ric and Ola left theirs with the support party, that meant there were six packs for use as thermal insulation from the cold floor.
 - Janine carried a small pulley.
 - All had spare lights.
 - All had warm gloves and balaclavas.



First of the rescue team arriving (above)

Photo: Ola Löfquist

Lessons learnt

- Ric suggested that Janine clip the carabiner into the ring this time. Janine tried this but didn't like the angle the carabiner was loaded. She returned to the system they have always used. In hindsight, the one Ric suggested is a more idiot-proof system. The last abseiler can remove the carabiner from the ring before starting their descent.
- A higher level of competency (or possibly just safety consciousness) was assumed than was demonstrated by the victim. As Janine did not know either caver (Ola or Isabelle) either personally or by reputation, a closer watch should have been kept of them. They should have been treated as beginners. This is possibly a point for discussion.
- A safety call-out person, who knows where the cave is and has the experience and knowledge to know what to do in the case of a missing party or emergency call, is necessary on all trips. That was the case for this trip. Very fortunately. This was a very easy cave. A very easy caving trip. That is why it was picked as the first trip of a planned week's vertical caving with these (experienced caver) visitors. A test trip for physical fitness. Yet an accident happened.
- All party members need to carry basic kit for a long wait. Not a large, heavy bag of everything but some spare clothing to sit for many hours, balaclava and warm gloves, water, food, an emergency (space) blanket, minimum first aid kit in the party (some pain relief, band aids, duct tape for strapping). A heat pack is also recommended.
- A good working relationship with Police SAR is vital to efficient cave rescue. Current, active, vertical caver STC members of many years standing have an excellent relationship with the current members of the TasPol SAR team. This may not be the case in the future when personnel in the caving club and TasPol SAR have changed. Continuing interaction and Cavex practice sessions to ensure this relationship between the organisations continues with different individuals is vital.
- Ambulance Tasmania needs more paramedics trained in SRT for cavers and experienced in SRT caving.
- Ambulance Tasmania needs to be made aware of the specific (caving) skill set a paramedic on a vertical cave rescue needs.
- A call out list for cavers available to assist in any capacity, and knowledge of their caving skills and fitness, is necessary. This includes contact details.
- Surface support with hot drinks, and food for rescuers leaving the cave is valuable.
- The ability to send hot drinks, and food, in to the party members waiting with the patient is very important.
- Whether current first aid qualifications are necessary in all parties is a point for discussion, however at least two members of a party having the knowledge to perform first aid would be beneficial.
- A notepad and pencil should be carried by at least one member of the party.
- Back-up cavers for relief in case of protracted rescues should be on standby.

AJ's recollections

Alan Jackson

Alan Jackson was designated emergency callout for the trip, so was aware of caving location and party.

Alan received a text message from Ric Tunney at 13:30 which read:

“Broken femur pitch 4
Start call out
Reply
Calling police”

Alan was at home and immediately responded with “OK” and commenced ringing local cavers. Andreas Klocker,

Stefan Eberhard and Michael Packer were successfully contacted, briefed and confirmed they could attend and would start getting prepared. Messages were left for other cavers.

At 13:43 Alan rang Ric, figuring he'd had enough time to inform Tas Police etc. Ric informed Alan of the basic details of the accident, that the casualty was at the base of pitch four, that pitches 4, 5 and 6 were rigged with 9-9.5 mm rope, that he and Ola were in Blayneys Quarry (near Mystery Creek Cave entrance) with good mobile phone reception and had been advised to stay there by Police until further instruction. He informed Alan that he had also spoken to Sgt. Damian Bidgood (long-time Tas Police SAR and STC member/experienced caver with excellent knowledge of the Midnight Hole/Mystery Creek Cave system). Ric informed Alan that it was pretty cold and with darkness approaching that he and Ola would soon be getting cold.

Mobilisation starts

At 13:52 Alan rang Damian Bidgood to ascertain what the Police response was.

Damian suggested that helicopters would be the fastest way to access the site for the initial response (he had two on standby already). They discussed what gear was already in the cave and what gear was likely to be needed for the initial response. It was agreed that moving the patient out the Midnight Hole entrance was the only feasible solution, as moving a patient down the cave and through Matchbox Squeeze was not a sensible option. It was decided that Andreas Klocker and Alan would travel down with Police and paramedics in the helicopters. Additional equipment and personnel would be mobilised by road.

Alan's partner, Loretta Bell, was also home and was roped into chauffeuring so Alan could continue working the phone. They headed to the STC gearstore to collect rope (grabbing most of the available rope, just in case) and then headed to Andreas Klocker's house to collect him and his gear. En route, at 14:05, Alan emailed the STC email server and posted on the STC Facebook page informing members there was a rescue callout in the south of the state and to ring Alan if able to attend.

At 14:13 Amy Robertson (STC member and resident of Geeveston, much closer to Ida Bay than Hobart) called Alan. Alan tasked her to come prepared for going underground but due to her relative proximity to the site that her first priority was to get to Ric and Ola in the quarry with warm clothes, blankets, food, fuel stove etc. At 15:02 Amy left Port Huon headed for Ida Bay. At 14:20 Alan rang Stefan and Michael again and requested them to coordinate between themselves to drive to Ida Bay and walk in to Blayneys Quarry. Both were ready to leave immediately.

Around 14:20 Alan and Loretta collected Andreas and various bits and pieces (drill, hangers, bolts etc.) and headed to Rotorlift at the airport. They discussed contacting Deb Hunter at Mole Creek to have the Petzl NEST stretcher mobilised but decided that since it would take minimum 6 hours to get the stretcher to the cave that we would make do with the Police SKED stretcher. Al Warild (NSW Cave Rescue) was informed of the rescue and put on standby by Andreas Klocker.

Various calls and messages were fielded from cavers who could help if required. By this stage, knowing we had a relatively easy extraction (four open/easy pitches and no particularly tight sections), a good number of capable cavers already enlisted (including the five other members of the caving party already on site) and a large contingent of Police SAR squad and SES personnel coming in the second wave that the majority of these people were put on standby. Darren Holloway was an exception, being another 'local', living near Geeveston, who responded to the email/FB post. Darren was advised to contact Amy and combine with her.

Loretta, Andreas and Alan arrived at the airport at approximately 15:00. Police were still on their way. Paramedics Han-Wei Lee and Anna Ekdahl were in attendance.

Both Han-Wei and Anna had been STC members in the past and have the equipment, technical, physical and mental skills for working in a cave. At approximately 15:20 the Police contingent arrived, including Damian Bidgood, Josh Peach and Ingrid ???. Again, all familiar faces and friends.

We were briefed on the plan of attack and made final decisions as to where the insertion point would be (Blayneys Quarry) and on what personnel and gear would go and in what order.

The two paramedics and Alan would go on the first helicopter. Police on the second (leaving at the same time) then one of those helicopters would return and collect Andreas and other police. Crews were briefed by the pilot and crewman on how we would be instructed to disembark the helicopter (hover landing). The first two flights took off at approximately 16:00. At 16:18 Alan received a text from Amy reporting she was onsite and entertaining Ric and Ola with culinary delights and warmth. At 16:26 Alan informed Amy the choppers were ten minutes away, landing at their location and to move to a safe spot and secure loose items (it would get a bit windy ...).

At approximately 16:35 the helicopters arrived at the quarry and commenced landing procedures (lots of circling and checking – it was not an easy location with many trees). It was still daylight, just. The paramedics and Alan disembarked at approximately 16:45, exchanged pleasantries with Amy, Ric and Ola and started walking up the hill to Midnight Hole entrance (approximately 800 m walk with ~120 m of elevation gain), arriving at the entrance at approximately 17:00. The second helicopter had some concerns with weight/power and decided to land in a paddock at nearby Southport to ditch a person and some gear and then deliver its payload over two trips. This delayed the arrival of the rope by ~20 minutes.

Relief heads into the cave

Anna, Han-Wei and Alan were almost kitted up and ready to go underground at approximately 17:10 when Ola arrived, huffing and puffing, with a bag of rope from the second chopper – perfect timing. Alan rigged the first three pitches of Midnight Hole with 11 mm Police rope from the existing pull down anchors (double glue-in stainless steel anchors with chains and central ring) using 'IRT' rigging to get the paramedics to the casualty as quickly as possible. The paramedics reached the casualty at approximately 17:30. Having seen both paramedics down the third pitch (one could hear the other four cavers talking at the bottom of the fourth pitch from here) Alan stayed up the third pitch and started improving the rigging to remove rub points (i.e. installing 'alpine-style rigging') knowing there would be many people ascending the ropes later in the extraction.

Pitch one has one minor rub only, immediately below the anchor and this was considered negligible on 11 mm rope. Pitch 2 has a significant rub and a redirect was installed using a single 6 mm concrete screw and 25 mm tubular rigging tape. Pitch 3 has a steep ~6 m ramp to a vertical drop of ~30 m.

Alan installed a rebelay at the start of the vertical drop (2x 6 mm concrete screws) and a second rebelay half way down (2x 6 mm concrete screws). During installation of these Damian and other Police from the second helicopter arrived in the cave. Josh and Ingrid were tasked with setting up a lift/haul system on the third pitch and Damian joined Alan at the bottom of the third pitch.

Alan discussed with Damian what Alan wanted to do for the lift on the short fourth pitch and received the go ahead. Damian then descended the pitch and assisted with the casualty, who was being attended to by the paramedics. At some point while installing rigging on the fourth pitch Michael and Stefan arrived at the bottom of P4 via the main entrance of the Mystery Creek Cave (i.e. through the horizontal system and up the rigged P6 and P5). There was limited space between P4 and P5 so Serena and Janine had moved up P4 to make room. Serena assisted Alan with rigging a counterweight anchor as high in the passage above P4 as possible (3x 6 mm concrete screws and a load-sharing anchor made from 9.5 mm static rope). The long tail of the load-sharing anchor rope was used as a backup belay for the counterweight system (off the existing glue-in anchor set up at the pitch head). The counterweight was set up using 11 mm rope and a Petzl rescue pulley. A rope was scavenged from P6 to provide a 'landing' belay for the stretcher for once the stretcher was detached from the counterweight and backup belay and manoeuvred along the passage between P4 and P3. This 'landing' belay was anchored to the tail of the P3 general access rope (11 mm rope on two concrete screws, backed up to rebelay and primary anchors further above) extended with 9.5 mm rope to the P4 pitch head. Janine was sent up P3 with the drill to see if additional anchors were required for the P3 haul system.

The lift out commences

Minor difficulties were encountered packaging the casualty in the SKED and some improvised solutions were found. Alan recommended the casualty's arms be left free of the SKED to allow for a greater sense of control/input and an ability to fend off walls/protect her face from inevitable wall glances. The casualty did not indicate a strong preference either way and ultimately her arms were left out. Damian supervised the packaging and the preparation of the SKED for vertical lift then moved to the top of P4 to double check the haul system. Following Damian's approval and confirmation from the paramedics that the patient was ready the lift was commenced. Stefan acted as counterweight, Alan acted as controller, Damian operate the backup belay at the pitch head, Serena acted as a 'human redirect' immediately below the pitch head to improve the angle on the lower three quarters of the lift; Anna (one of the paramedics) moved to the pitch head to supervise the casualty upon landing and operate the landing belay, Han-Wei (other paramedic) ascended the access line and followed the casualty to supervise during the lift and Michael and Gabriel acted to help steady and position the stretcher during the initial phase of the lift.

The lift and landing was achieved with no problems. The passage to P3 base was narrow and difficult with no room to position stretcher carriers either side. Ultimately two

cavers (Anna and Alan) lay face down in the base of the keyhole-shaped passage and the stretcher was dragged over them till the passage was wide enough for conventional carrying. The casualty was placed in an alcove protected from objects falling down P3 and monitored by Han-Wei. Derigging of P4 commenced while Anna, Damian and Alan moved up P3.

Josh (Police) informed Damian and Alan that the P3 haul system was installed and ready to go. A conventional mechanical advantage haul system with independent back-up belay had been set up on natural anchors and one 6 mm concrete screw. In the meantime the helicopter which flew a second lap to the airport, with Andreas and two Police (Phil ?? and Callum ??) on board, arrived. By this time it was dark and it took a fair amount of searching for and at Blayneys Quarry before the pilot managed to find a good spot to hover and drop off people and gear. Assisted by Amy, all three immediately went to the cave entrance. Phil and Callum stayed at the surface to coordinate and communicate. Andreas went into the cave with additional rigging gear and two additional UHF radios to have a seamless communication line to the surface. Andreas arrived at the top of pitch 3 about 20 minutes before the casualty was ready to be hauled up the pitch. Seven people helped haul the casualty up the 3rd pitch – Josh assisted at the pitch head, Ingrid and Serena controlled the haul system and reset the 5:1, and Andreas, Ola, Anna and Gabriel supplied grunt. The haul worked fine, albeit a fair amount slower than counterweight techniques, and it needed more people and ropes which made things pretty tight in the limited space available. The space between the top of pitch 3 and pitch 2 is relatively narrow with uneven floor. Through this part the stretcher was man-handled, being quite hard and awkward due to the limited space, and uncomfortable for the casualty due to the limited protection of the SKED in this narrow space. Once the casualty arrived at the bottom of pitch 2, both paramedics looked after the casualty, and Andreas continued to the top of pitch 1 to act as counterweight for the next haul.

Alan and Damian were tasked with preparing a lift system for P2. It was noted that SES, Police and cavers on the surface had installed the beginnings of a counterweight system for P1. It was decided that the close proximity of P2 to P1 would allow their combination into a single lift system for both pitches with the use of redirects. Alan installed three releasable redirects (consisting of 2 x 6 mm concrete screws with load-sharing 25 mm tubular tape, single carabiner with Italian hitch and carabiner with a pulley). One was placed immediately above the main vertical drop on P2, the second adjacent to the P2 glue-in main anchor to prevent the rope from dragging on the wall above P2 and a third redirect ~4 m down from the P1 primary anchor to pull the rope off the rub immediately below the primary anchor (and provide room for the controller to better handle the ropes below the pulley). Multiple access lines were installed around the pitch head by SES/Police/cavers to allow safe access by extras, including one that would allow a person to release the highest redirect and handle the stretcher as it approached the relatively tight pitch head. A backup belay on natural anchors (trees) was established to belay the P2-P1 counterweight and to facilitate/protect the final landing.

For the P2-P1 lift Andreas acted as counterweight, Alan as controller, Damian as redirect one and two releaser, Han-Wei as stretcher/casualty attendant (on pitch access line), Janine as redirect three releaser and Mark Nelson (SES) as backup belay operator.

The main lift went without issue other than a stubborn third redirect which required some fiddling to get to release (suspected to be caused by the Italian hitch not sitting nicely on a non-oval carabiner). The relatively low placement of the primary anchor (double glue-in chain anchor) resulted in the stretcher being situated relatively low in the entrance 'squeeze' when the capacity of the lift was exhausted. This resulted in a bit of brute strength required to drag the stretcher the final few metres to the surface on the belay line but with ~12+ burly rescuers on the surface this was a minor problem. As the stretcher was dragged up the counterweight was let out slowly but still connected (as a backup) with the counterweight (Andreas) positioned at the base of P1. The casualty reached the surface at approximately 00:30 – 01:00.

All three lifts were done with the stretcher in the vertical position.

SES and Police personnel attended to the casualty, placing her and the SKED in a rigid basket stretcher (Stokes stretcher) for easier carrying down the hill.

Another paramedic was flown in by helicopter half an hour prior to the casualty surfacing and arrived at the entrance shortly after surfacing and took over medical care from Anna and Han-Wei from that point (all the way through to the hospital).

Remaining personnel in the cave commenced derigging of remaining equipment, including removal of all the temporary concrete screw anchors (15 in total). The descent of the hill to the old quarry was treacherous and slow, taking about one hour. All personnel were out of the cave and back in the quarry by 02:00 and the casualty was airlifted in the helicopter at approximately 02:00 and flown to Hobart. All personnel walked out the flat tramway track to the Southern Ranges Track carpark (about ~20 minutes) and a very quick 'debrief' was held. It was communicated to all that the casualty had reached hospital and all was good. Everyone made their way home in various vehicles, generally getting back to Hobart and bed around 04:00.



Second helicopter arriving with rescuers.

Photos: Ola Löfquist



What it takes to get a stretcher through the bush



(Quick) post rescue debrief in car park

Notes on gear used – a combination of Police, SES and personal (cavers') gear was used (including ropes, carabiners, bolts, hangers, rigging tapes, pulleys etc.).

Comms – The cave is dry and quiet with few restrictions or long horizontal passages separating pitches – fancy comms were not required. Handheld UHF radios were available and were used but generally not required – a slightly raised voice provided affective communication on all pitches with a small amount of message relaying required.

Police had radio comms from the entrance to Hobart radio room.

Total personnel

STC/cavers – Alan Jackson*, Serena Benjamin*, Andreas Klocker*, Janine McKinnon*, Ric Tunney*, Gabriel Kinzler, Stefan Eberhard*, Amy Robertson, Darren Holloway, Michael Packer*, Loretta Bell (surface only), Ola Löfquist (visiting Swedish caver), Isabelle Chouquet (visiting French-Swiss caver – casualty).

Paramedics – Han-Wei Lee*, Anna Ekdahl*, wilderness paramedic (name unknown) who took over post extraction

Police – Damian Bidgood, Josh Peach, Ingrid, Robyn, Callum, Phil ... others

SES – Emlyn Jones, Almas Khan, Mark Nelson.

Westpac Rescue Helicopter/Rotorlift – pilots and Police crew.

*indicates individual has attended at least one STC cave rescue training weekend run by AI Warild/NSW Cave Rescue.

Team effectiveness and inter-agency relationship

Almost every person present knew a majority of the rest of the team and were on good personal terms – the whole thing was like an in-cave reunion. Many of the caver/Police/SES relationships exceeded 15 years. This was the result of a large number of cave rescue exercises (almost annually since the late 1990s). The relaxed, confident and trusting nature of the team allowed for seamless organisation and execution of the extraction – we all knew that everyone else involved was competent and confident. Having two paramedics available who are both capable of technical vertical caving is an enormous luxury. There was even a lot of time for general banter, from which no one was excluded. The whole process was a delight to watch and be a part of and left one with a very warm inner glow. It is clear that we need to continue running inter-agency rescue exercises and make sure that the next generation of cavers, SES and Police SAR get to reap the rewards like the current generation just did.

A massive thankyou to all those involved and all those that were on standby. It is a testament to the strength of the caving and professional rescue community that we are prepared to drop everything and help a friend or even a stranger in need. Despite what fun it all was, let's hope we never have to do it again!

Ric's Experience

Ric Tunney

Janine rigged P1 and explained to the party the necessity of abseiling on the correct side of the doubled rope. I sat and watched each person start P1; cow's tail on, select correct side, attach to rope, test the abseil, take off cow's tail. That all went well; each person attached and started safely.

I was last in our party; taking out the knot and carabiner and abseiling on a doubled rope using a rack. Ola was helping me with the pull-down; making sure the rope wasn't twisted and checking the pull-down would work. When I got to the bottom of P3, Ola told me he had heard something from the front of the party and something was happening. Thinking that some minor stuff-up was in progress, I pulled the P3 rope down.

When I bottomed P4, it was obvious it was more than a small stuff-up. This was going to be big! I saw my chance to appear heroic by going for assistance but in reality running away. Ola and I were least useful, so we left our packs to be used as a mattress, food, spare jumpers etc. and headed out.

We had two ropes for the pull-down on P6, so I single-rope P5 and P6. I expected that some of the rescue party would come in from the bottom. There is a bad rub at about -15 m on P6, but it was our rope, it would survive and I didn't care if it was damaged. (It was. We now have two shorter ropes.)

Poor Ola never got to see the glow worms as we were in a bit of a rush.

My phone was in my rucksack left at the start of the Midnight Hole track. There was a good signal. As I had left my little bag of emergency equipment behind, I didn't have spectacles. So Ola became my eyes. "How many bars, Ola?" "What does this say, Ola?" Most useful.

First action was a text to Alan. I think this was at 13:25. Alan was our emergency backup; a wise choice.

"Broken femur pitch 4

"Start call out

"Reply

"Calling police"

Next call was to 000 to formally advise Police.

This was rather short as they wouldn't switch me to Search and Rescue and didn't want much information. I was told to expect a call. (I suspect the "injured person" bit was triggering some scripted response.)

Next call was to Damian (13:35), to let him know so he didn't get a garbled report from 000.

I then had a call from the despatcher at Ambulance (13:40). I explained the situation, advised a full vertical rescue was needed and stressed that Anna and Han-Wei should be sent. (We are very fortunate the despatcher took note of this.)

Then I took a call from Alan (13:49). You don't have to explain minute details to Alan.

All this took only fifteen minutes.

So, then we settled down to wait, expecting four hours till something happened. At 14:49 I received a call from Alan telling me he was on the way to the airport and would be helicoptering down. "They're taking this seriously," I thought.

Ola and I were getting very cold in the forest, so we moved to the quarry. It was surprisingly mild there. (Times become very iffy from here.) Amy arrived at 16:12, laden with hot drinks and food, followed shortly by Darren. Then Stefan and Pax. We gave them the food and drinks to take in from the bottom at about the same time as we heard the helicopter(s). They left for Mystery Creek at approximately 16:40.

The helicopters arrived, flew in circles and went away. It was getting darkish. I thought they had decided the quarry was unsafe and people would have to walk in. One helicopter came back, sort-of landed and disgorged people and gear. The helicopter returned and again disgorged people and gear. Alan, Damian, Josh, Anna, Han-Wei and Ingrid headed up the hill.

Ola ran a bag of ropes up the hill; I took the Sked stretcher and plodded up. At the entrance we waited.

At 17:48 I did a radio test to the quarry.

At 20:35 SES party arrived at cave entrance.

I rigged a rope as a fence for sightseers and some short ropes as safety tails for people working at the entrance. Later, as nothing could be heard, I headed down the hill to get some of Amy's soup, but ran into Amy and two Police, Phil and Callum, and Andreas, overloaded with two packs so I carried one up the hill. Amy had left her soup behind. But as soon as he arrived Phil fired up his choofer and made us soup. This was very welcome.

Ola was getting very cold so he headed into the cave. We tried to establish radio contact with "deeper down" as Police wanted to know when to send the medevac helicopter. Later, after Ola went down P2, I went in to the top of P2. There was a lot of talking at the top of P3 so I didn't head in any further.

When Alan and Damian arrived, I went up P1 and located a spot for a redirection to avoid a bad rub and a notch at about -8 m. I was expecting to organise the grabbing of the stretcher from the pitch head, but SES had set up a small haul.

Alan came up, bouncing and beaming, wielding the drill. The counterbalance lift (using Andreas) for P1 and P2 was done in one haul. The stretcher arrived and was grabbed by SES and Police.

I tidied up gear, loaded my pack with ropes and headed down to the quarry. The stretcher was there just before me. The helicopter arrived and winched the stretcher and we walked back to the cars.

Ed: Amy reported that at 20:01 Mark Nelson, two SES, Loretta Bell, John & Robyn (Taspol) arrived at the quarry.

Han-Wei and Anna: Paramedics report

Han-Wei Lee

Permission was given by Isabelle to publish medical data in this report-Ed.

Following activation to the cave rescue, we went through medical equipment at the helicopter base to rationalise what we were bringing into the cave. We stripped a large medical response backpack down to two small kits that would fit in to our personal caving packs.

On arrival at the patient we found that others on scene had performed first aid to an excellent standard which they should be congratulated for:

- The patient was kept immobile
- The patient was kept warm
- Regular vital sign observations had been taken. This was particularly useful for the next carers to see a trend in the patient's condition.

From a paramedic perspective standard pain relief using intravenous and inhaled analgesia was provided and the leg was splinted with a portable traction splint. The patient's sit harness was still *in-situ* which provided an excellent anchor point for the top of the splint.

Pax's mat was a useful way to keep medical equipment as clean as possible which is important to reduce the possibility of infection. Following stabilisation of the patient's injury and pain the patient was packaged in a SKED stretcher by Tasmania Police (TasPol) S&R for vertical hauling. Alan's muesli bar box was also a hero of the day enabling chocking of the patient's uninjured leg to keep weight off, and protect, the injured leg.

A second climbing harness was attached to the patient to provide an additional secure attachment point between the patient, haul lines and SKED.

Whilst medical care was being provided haul systems were set up by STC and TasPol SAR along most of the pitches and there was minimal wait time at each pitch.

Anna and I coordinated a split in the medical equipment so that there was always a paramedic above and below the patient.

This ensured a paramedic was available in the event further treatment was required at the next pitch.

Leap-frogging the patient as a barrow boy worked well and enabled me to maintain medical observation of the patient and to provide ongoing reassurance particularly on some of the longer pitches. At all times the counterbalance and controllers of the haul system were very responsive to directions.

From a medical perspective the case was reasonably straightforward however the condition and hostility of the caving environment required some adaptation of techniques and normal processes, which worked well. The patient extrication and hauling by STC and TasPol SAR was virtually flawless in my opinion. It appeared faster and smoother than previous cave rescue scenarios I have been involved in.

I wasn't involved in any of the rigging but it was very much set up in advance of the patient's arrival at the pitch base which really sped the whole process up. I was quite convinced at the start that we would be getting out of the cave much closer to dawn than midnight.



Anna and Han-Wei in action (Pax in background)

Photo: Gabriel Kinzler

Ed: And finally, we have Isabelle's version of the tale (This is a bit like *Rashomon*, isn't it? Only we have one extra version, and there are no swords, and hopefully without the "*Rashomon effect*"). I have deliberately kept the editing to a minimum, so as to retain the flavour of her style.

The Victim's Account

Isabelle Chouquet

Hello company,

I do not often write a novel, but this time I wanted to share with you a true story. Mine in this case.

Some people know that I went to Australia from Switzerland for the World Caving Congress. But before it started, I organized a small cave outing, quite quiet (well that's what I thought), with Ric and Janine because they invited me, and Ola, a Swede caver, to visit their beautiful state.

Here are some facts that retrace my accident.

The story

I made a great mistake that could have cost me my life if it had happened at the previous pitch because it was 39 m.

The object of the trip was to climb the mountain, to descend by the inside of Midnight Hole, recovering each time the ropes, since it came out much lower.

All super easy.

I had arrived at the fourth pitch, just after Gabriel. He did wrong with the rope just in front of me, but he saw

immediately his mistake, so he removed the rope and put the right side of the rope in his descender. So, I thought that I had to be careful too, I looked carefully which side he took and I did the same (in fact not).

It seemed to be correct and I started to go down with my foot and my arms against the wall. I was really interested in what Janine and Serena were doing for the next pitch just at the bottom and I didn't check a second time if all was good. When the pitch became larger after 3 m, I fell down, and two seconds after I was lying on the bottom of this pitch with a horrible pain (that I had some difficulties to support) coming from my right femur and my right hip. During this short descent, 5 m, I tried to touch the wall, it was just a reflex. I immediately understood that I had done wrong and that many problems will follow.

I said two times to the others: "don't touch me". I would like to check before all my body, I was afraid to increase my pain if somebody touched me. I knew that I had nothing wrong in my lungs because my breathing doesn't stop. After this I tried to move my left leg, all my toes, my two feet and everything was ok. At this time, I think that maybe I hadn't broken my femur. And because I wasn't comfortable I asked them to help me to sit. It was awful, my pain increased more than 10 times, I was suddenly too hot. They were completely stressed and didn't really know what to do for a moment.

(Ric and Ola then arrived-Ed) I said to Ric that I needed a rescue because my femur was broken, I saw it was in a bad position (one part straight and the other in other orientation). I told him that I needed a strong medication to decrease my pain, only right femur broken (I wasn't sure at that moment because my hip was also very painful, but seeing their worried heads, I didn't want to frighten them even more so I said nothing about that), no allergy, that I have good health and my age. He left quickly with Ola to ring the rescue team. Janine said to them to be careful, because the worst thing it could be to happen was

to have a second accident. I didn't want to think about that (but I had that somewhere in my head until the rescue arrives).

I blamed myself for being deceived, for having abseiled so badly, but also because I was going to derange many people who had better things to do than a rescue.

Ric and Ola had left quickly, the three others stayed with me (Janine, Serena and Gabriel). They emptied the bags to put me on to get hot. Meanwhile, I quickly took a medication (Méfénacid) which I always carried with me caving, (but I never use) and a heating pack (which heats 50 ° for 24 hours). They put my survival blanket on me and gave me one of theirs too. I couldn't move as the pain was unbearable. After 20-25 minutes, they moved me onto the bags. It was not easy, because I was in pain, but also because the next pitch was close (and of course I am not light).

My new position was not great, but better than before. So, I could wait so warm for several hours.

Serena asked me about my state of health and worried about whether I had an open fracture. I told her not, because I had no signs of blood loss or cold. In addition, touching my leg, it felt very swollen (my combination with tourniquet), everything else looked "normal". She took my pulse regularly and noted everything on a paper. (I always have something to write about, something to eat and drink in caving, you never know.) Everything was always the same, so no panic. Every time she touched my wrist, I felt how frightened she was, and I began to worry about my three friends because they had no survival cover for them. I didn't want them to be too cold and it became a real problem. I also had in my little bag for survival a candle and matches but I didn't even think of telling them.

I kept calm as much as possible, as I have experienced many emergency situations in my work (I am an operating room nurse) and I know that nervousness and stress always make things worse. So, it's useless. Janine was also very calm.

We waited quietly, sometimes without a word. From time to time Serena or Gabriel wondered if I was sleeping, but not, impossible with a pain like that, even though it had gone down to six after the second medication. I knew that when they spoke too fast between them, it was so that I didn't understand. I was lucky to have Gabriel with me who could translate things because it was not easy to focus on my English and my pain at the same time. Often, I did some meditation exercises, very useful in these conditions.

It is interesting to note that the body in case of fundamental problem automatically switches to survival mode. And that all five senses are multiplied tenfold. It is perhaps also the cave that does this because the conditions are not ideal.

After a while, I heard a distant sound coming from above. But nobody believed me and Serena worried right away if I would not start raving. I told them no, I'm sure. It would take another 10 minutes to get a new noise. And this time they believed me. But we didn't know who was coming down. Is it Ric and Ola? Or the rescue team? We thought it was too early for the rescue team because it was

less than four hours since I had had my accident. We still must wait to find out more. Suddenly we came out of our torpor.

We were all staring up, and suddenly Janine said "it's Han-Wei", a paramedic. He quickly came over to me followed by his wife Anna, also a paramedic. I was very happy to see them and the others too. We were impressed with the speed with which relief was put in place. I had imagined seeing them between 10 pm and midnight.

Just above it could be heard a drill making some holes in the wall.

Han-Wei began by asking me routine questions and checking some important places (cervical, ribs ...). I think he quickly realized that I had made the right diagnosis. To be polite he asked me if he could cut out my suit at arm level to begin with. Yes, how to do otherwise? Sniff !!! It was my best suit that I always kept for the caving relief exercises in Switzerland. Immediately afterwards he put me on a venous route and injected me with Fentanyl, at the same time I had to breathe an anesthetic product from a kind of whistle or pipe. As if by miracle, the pain disappeared almost completely and I found myself almost in a state comparable to sexual enjoyment. Meanwhile Anna cut my boot and my suit and undersuit, up to my harness.



Isabelle ready to start up the first pitch. Photo: G. Kinzler

They put traction on my leg to soothe the pain and put it back straight, held by my harness. I could just see Gabriel's head and he was impressed by what he saw. Janine and Serena went up to the upper pitch to make some place for the new arrivals. They started the rescue with only six people, incredible.

I could hear the preparation for the ascent. A small plastic mat (not very thick) was unrolled next to me, I still had to breathe well the anesthetic product, before they settled in. There were at least five people to do this properly. I got a new climbing belt this time.

It was placed only on my left leg. I was tied to the stretcher with a box under the left foot. It must have been about 7pm when I was put upright.

This new position was very interesting for my back, because for many hours lying on the hard floor of the pitch, my back was painful.

The ascent started quietly for me. I was fine, I was trying to see their facilities, but it was not very easy.

At more than half way up the pitch, I began to have some ants in my left leg (that of the climbing harness). I moved my leg to circulate the blood. We still had not come up when a new pain appeared. This time from the left leg. I told Han-Wei who could do nothing now. I just had to breathe the anesthetic. I was not good at all, I was very hot, I could not feel the box under my feet, nor even move my foot.

I was in a hurry to get out of the pitch and be put back on the floor. After a few more efforts to get back to me, they managed to get me lying again. Immediately the pain went away and my leg feeling returned. I felt good, I was always warm. Han-Wei offered me a new injection. This time I did not need it anymore. Lying in this narrow corridor they dragged me on the ground, it was very comfortable especially when Alan and Anna were flattened by my stretcher to make the move more mellow.

I stayed a moment here, during the time they finished preparing the two next pitches. I had time to think about the few spiders that I saw when I went down earlier. Ola came down to help the team and stayed a moment leaning over me to prevent the stones from falling on me from the top. I was glad to see him again. I could also hear Ric talking, and Janine. Then the stretcher was restored and a new ascension began. The beginning was always very comfortable, but the longer it lasted, the more the pain of my traction leg increased. After a while, I could see the trees, I knew I was very close to the exit, but the pain was unbearable. I no longer moved my left leg and no longer felt it. I was very hot, sweaty, wanted to vomit and was very close to fainting. But I had to hold on because I knew they were all going as fast as they could.

I heard them talking and it looked more complicated than they thought to lift the stretcher the remaining metre. I must say that the entrance is not safe at all.

Ola with Isabelle on the surface. Photo Gabriel Kinzler



Then finally guys more than muscular (like American style football team) pulled me out all of a sudden and balanced me on I do not know what (a trunk maybe), I am a little head down, but my left leg wakes up. Immediately the doctor (*Ed: Paramedic, recently flown in*) looked at me and questioned me. He took my temperature three times and didn't understand that it was good. I told him that all is well, that my pain was between 0 and 1 now. But that I would like to be put up to pee (with my ladies' urinal). He says that we haven't the time, the helicopter is

waiting and the fog is increasing, we must not hang there for too long.

During the lift, they told me several times to pee in my suit, but I wouldn't do that, I was so warm. In the end, I waited 7 hours before a urinary catheter was placed in the hospital.... Funny experience !!!!

In short! I'm out 10:45 hours after my fall, and am very happy except my bladder that reminds me to pee.

I kept hope because I didn't understand that it would take another 2 hours of walking in this primitive forest worthy of Jurassic Park (multiply 10) to find a place almost correct (without too many trees) to be able to winch me up.

It didn't end, one time I passed under a trunk, another time I turned around small trees, I saw the guys take turns every 2 minutes. They were sweaty with huge backpacks, every 20 seconds there was one that fell. I felt troubled for them. But I thought they were actually very proud to carry their "little holy and safe treasures". I could enjoy the good smell of the forest, lying there in the middle of nowhere was surreal.

Finally, I was on a comfortable floor, I was told not to worry, that there will be a lot of wind, noise and cold. But I was not worried because I came out of this hole (Midnight Hole, his little name). Cold what is this word? It was outside close to 0° maybe. They had to remove my blanket, put me in second tray, rigid this time. I heard the Helicopter but could not see it, barely a light, I realized that there is damn fog. I just hoped that the guys would not put themselves in jeopardy to get me out of there. Then I saw the sling come down, someone hooked it, another one checked it and I went up. Sensation was very nice but it was getting colder and colder. I always had a naked arm above and must hold a kind of handle. When I was just under the helicopter I realized that I was turning on myself and that the helper of the pilot (with his helmet "super-commando" night vision) was having difficulty to put me in the axis to get me into the helicopter. In short, I was there, I lay there and the guy turned to get the doctor (*Ed: Wilderness paramedic*), this time. After maybe 10 minutes they hung me properly and closed the door. Suddenly it was too hot with this smell of hydrocarbon.

So, I got hot again and started to open my suit, there was so much noise that we could not really talk, but the doctor understood that I wanted to get cold. Constants (*Ed: Vital signs*) were checked and we left.

25 to 30 min later, we were in Hobart on the ground but not on the roof of the hospital as I imagined.

I learned that they aren't allowed to fly over the city and that I still had 10 minutes more of ambulance before being in the emergency room. Finally I was at the hospital, I saw the big clock that marks 2:25 in the morning.

And then, the folklore began. At least 8 people arrived, I said that now I must pee. Then my harness and suit were cut. Two nurses stayed for my probe and I felt revived. I got warmed up before I got X-rayed. I was still on the caving stretcher, because they didn't want to get me out of it until they knew what I had fractured. My suit was still under me during the X-rays. Five minutes later, the man who did the X-rays arrived in a hurry. "Sorry I had

to do it again there is a problem in your back.” See the X-rays, I had one carabiner stayed there for nearly 14 hours.

After that, they had to move me twice and they did not do as well as Han-Wei, and I had a lot of trouble.

I waited very comfortably all the morning to go to the operating room for a nail to be put into my femur.

I felt disgusting, especially the hair, with an infernal odor.

In front of the room, the anesthesiologist made a femoral plexus block for 36 hours.

Then we went back to the room where I could see my colleague making the instrumentation table.

I fell asleep quietly and woke up much later without any pain!

Aftermath



X-rays of Isabelle's break (above), and repair (right)



Note: Permission given by Isabelle to publish these X Ray images. Also, permission given to publish all photos of her being rescued.

Letters to the Editor

Isabelle wrote two letters to *The Mercury* newspaper, “Letters” page, for publication. They chose not to publish these but do a feature article on her instead. Some extracts from the letters were used in the article.

Here is the first letter:

With this letter I would like to warmly thank the people who came to rescue me in the famous Midnight Hole this Thursday afternoon. Especially the 4 speleos (cavers) who were with me that day: Ric and Janine, Serena, Gabriel, as well as Ola (Swedish speleo invited like me by Ric and Janine).

They did not lose their composure and remained very attentive to my needs, while at the same time being uncomfortable in their microscopic space.

Ric and Ola were quickly released from the cave and gave precise and important information for the organization of the relief.

Janine, Serena and Gabriel always stayed close to me to keep me warm, check my medical condition and reassure me, to the detriment of their own comfort (warmth and positioning).

The second big thank you that I want to express here, is for Han-Wei and Anna. They are the paramedics who came to help me in the cave, and did an amazing job to lessen my pain, which was almost unbearable.

Through his calm and professional aptitude, he knew how to keep me confident in the painful moments.

I belong to one of the Swiss Relief Columns, number 3, as a paramedic because I am a nurse.

I know how important it is to know what to do and how to do it. And that especially it is important to be able to adapt to the situation so unexpected.

The 3rd thank you, equally important is intended for other speleos and members of the police who came to me to help me along the way to the exit. Each of them has gone crazy for everything to go well (I think of Alan who was flattened by my stretcher to make the passage more mellow, as was Anna) and all the others who fired like crazy on the climbing rope.

I also do not forget all these people outside, including some SES people, waiting for me in the night and the cold in order to get my stretcher down through this steep and slippery forest.

I am very impressed with the excellent work that has been provided by everyone, and I can compare it with the one we do in Switzerland. It was all done very fast, from the message going out of the cave, to the arrival at the hospital.

I am very proud of all of you and recommend you to go and help elsewhere in the world for other underground rescues.

Best regards

Isabelle Chouquet
(Speleo Club Nord Vaudois: SCNV)

PS: I'm not 30 but 49. I've been doing speleology for over 25 years and it was my first accident.

Isabelle's second letter to The Mercury.

As your diary recounted, I was the victim of an accident last Thursday in the Midnight Hole. I would like to say that I am French, but have lived in Switzerland for a long time. I have been caving for over 25 years and have never had an accident before.

With this letter, I would like to express my sincere thanks to the Royal Hobart Hospital for help. I quickly received quality care.

I especially thank the emergency department for its welcome, the anaesthesiologists who did a great job (I had so much trouble, that the slightest displacement stressed me), the surgeon and his team who operated me and especially the service of orthopaedics on the 5th floor.

Nurses are very conscientious and love their work. They look after the patients with great humanity despite the impressive workload. I am a nurse myself and know how hard this job is.

I also thank the physiotherapist who helped me and the person who worried about finding a solution for my return to my cave friends and my repatriation by plane. As well as those encountered in radiology, for meals.

For all of you I have a lot of admiration, the population of this island is very fortunate to have such a hospital!

Isabelle Chouquet



SEPARATE OPERATIONS!

RICKY: Tasmania Police search and rescue officers remove an injured woman from Mystery Creek Cave.

Pictures: TASMANIA PO

Caving and boat mishap rescues

PATRICK BILLINGS
Police Reporter

A WOMAN with a broken leg and two men with hypothermia have been rescued by search and rescue teams in two separate operations in southern Tasmania.

Police said the Swiss tourist, who was on a caving tour, was rescued from Mystery Creek Cave in the South-West after suffering a broken femur in a fall.

The alarm was raised about 1.30pm on Thursday

by the woman's caving companion.

The woman, in her 30s, had travelled about 100 metres into the cave when she fell eight metres.

Conditions in the cave can be treacherous, with two students and a teacher dying there in a flash flood in 1990.

A specialist team of rescuers reached the scene about 4.30pm.

Two Westpac Rescue Helicopters, paramedics, the SES and caving club members attended the incident.

Inspector Lee Renshaw

said it was not easy to get people out in such situations.

"The difficulty is having reached the patient, which on the fourth pitch is about 100 metres vertical underground ... she had to be winched to the vertical area above her, then work out how to do it all again three times to get her to the surface," he said.

Rescuers got the woman to the surface just after midnight.

"It was then another 500-metre walk through rain-forest in dark and very slip-

pery, dangerous conditions where we could get her to a quarry where one of the helicopters came and winched her out," Insp Renshaw said.

The patient arrived at the Royal Hobart Hospital just after 2am.

"I'm led to believe the extrication wasn't all that comfortable but suffice to say she's now comfortably resting in hospital," he said.

In another rescue operation, marine police plucked a father and son to safety from Black Jack Rocks after a boating mishap.

Authorities were called out about 6.45pm after the duo's newly purchased 27-foot vessel became stranded on the rocks. Police said the men misjudged the approach to the Iron Pot, south of Hobart, on the vessel's maiden voyage from the East Coast to Hobart.

The men were transferred to the police vessel *Resolute* and taken to a waiting ambulance at the South Arm Jetty.

The 48-year-old man from West Australia, and his 73-year-old father suffered hypothermia.



Another image from the Saturday Mercury article. 15 July 2017



CAVE RESCUE

GRATEFUL: Isabelle Chouquet, who broke her leg in Mystery Cave, thanks police rescuers Damian Bidgood, left, and Josh Peach who came to her aid. *Picture: SAM ROSEWARNE*

PATRICK BILLINGS

IT was always going to be a trip to remember.

But for one French caver the memories of Midnight Hole will be about the people she met in the crisis not the crevices.

Isabelle Chouquet fell five metres, breaking her leg while abseiling Midnight Hole at Mystery Creek in the South-West last week.

An experienced caver and nurse, who also volunteers with Swiss Rescue in her adopted homeland, she knew she was in trouble.

"I think I am so stupid to do that because it will be so complicated to get me out," she said.



DRAMA: Isabelle Chouquet is treated and airlifted from the remote site. *Pictures: OLA LOFQUIST*

Midnight Hole has five descents ranging from 8m to 59m. Luckily, Ms Chouquet fell down the shortest of them.

Nevertheless, rescuing a seriously injured caver 100m down a black hole was never

going to be easy. It would be more than 12 hours before Ms Chouquet was admitted to the Royal Hobart Hospital. She was overwhelmed by the support and care.

"The paramedics [Han-Wei

and Anna] who came to help me in the cave, did an amazing job to lessen my pain, which was almost unbearable," she said.

She commended the other cavers and police "who came to

me to help me along the way to the exit".

"Each of them has gone crazy for everything to go well," she said.

"I also do not forget all these people outside, including some SES people, waiting for me in the night and the cold to get my stretcher down through this steep and slippery forest. Also, the helicopter crew who worked in difficult conditions."

She also thanked the team of cavers she was exploring with and RHH staff.

"For all of you I have a lot of admiration, the population of this island is very fortunate to have such a hospital," she said.

Ms Chouquet left Tasmania yesterday to attend a caving conference in Sydney.

Mercury article from 22 July 2017.

Main photo taken on Spiel editor's balcony. Other photos supplied to Mercury by Ola.

Thanks to The Mercury Newspaper for supplying the pdf.

Fun and Diversions



The Olde Farte Zone

I am calling for photos from reader's archives. Dust them off and email them to me, with captions identifying the people, place and hopefully time (aeon at least). You can put a brief description if you like. Photo credit too please, if possible.

Time period is from when TCC was founded until 5 years from current issue.

Email address: jmckinnon@caverneer.net.au

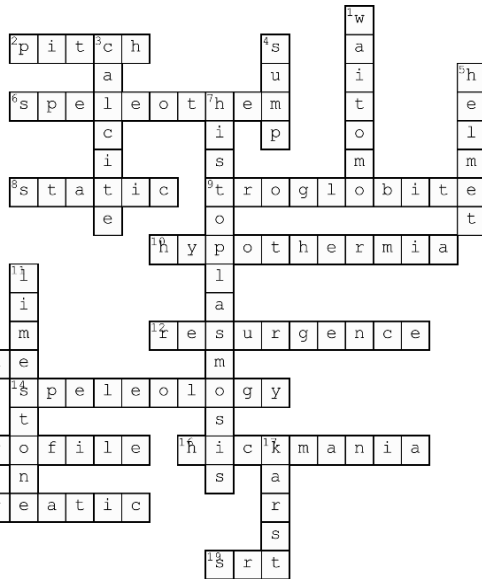
Here's another from the Tunney/McKinnon archive.

Left: Alan Jackson in Lost Pot, 2005 (trip report SS 351)

Photo: Janine McKinnon

Easy Starter ANSWERS

Created with TheTeachersCorner.net [TheTeachersCorner.net](http://www.theteacherscorner.net) [Crossword Puzzle Generator](http://www.theteacherscorner.net/crossword-puzzle-generator)



Across

2. Vertical drop requiring a rope (**pitch**)
6. A structure formed in a cave by the deposition of minerals from water (**speleothem**)
8. Type of rope used for caving (**static**)
9. Cave dwelling animal (**troglobite**)
10. What happens when you get really cold (**hypothermia**)
12. Stream or river rising from underground (**resurgence**)
13. Sinkhole (**doline**)
14. The study of caves (**speleology**)
15. Side view in a cave map (**profile**)
16. Genus of Tasmanian cave spider (**Hickmania**)
18. Cave passages formed below the water table by water flowing under pressure (**phreatic**)
19. Acronym for vertical caving (**srt**)

Down

1. A caving area on north island of New Zealand (**Waitomo**)
3. The most stable polymorph of calcium carbonate (CaCO₃) (**calcite**)
4. A passage in a cave that is submerged under water (**sump**)
5. Protects the brain (**helmet**)
7. Fungal infection of the lungs (**histoplasmosis**)
11. A type of rock in which many caves are found (**limestone**)
17. Topography is a landscape formed from the dissolution of soluble rocks (**karst**)