

Neprehojene Poti 2016 - The path less traveled

An Imperial College Caving Club expedition to Tolminski Migovec in the Julian Alps (NW Slovenia)

Introduction

Aims and objectives

The main goal of our planned 2016 expedition was to give Primadona the sustained focus of expedition cavers.. As well as rerig and resurvey Primadona to a high standard and in a systematic fashion, we aimed to develop a working knowledge of the cave. The exploration target of the Neprehojene Poti expedition to Slovenia was "Primadona", a 600m deep cave with an entrance imposingly 120m down the cliff on the Western side of the Migovec plateau.

Our objectives were:

- to teach novices how to rig, bolt and survey cave passages
- to bolt a new access route to Primadona using standart alpine SRT techniques
- to systematically explore and survey passages in order to...
- produce a high standard (BCRA grade 4b) survey of the Primadona-Monatip system

Summary of exploration

An impressive 2.6km long cave in its own right, Primadona was connected in to the rest of System Migovec over the autumn of 2015/2016 by our partner club the JSPDT.

Primadona has been explored sporadically over the preceding decade but mostly with the aim of going deep. The potential for leads relatively close to the surface (within 300m) was a major reason for going, in order that new cavers would have a better chance of doing exploration.

The exploration was mainly focused in an area known as Galerija and over the course of the expedition was pushed 190m deeper with 835m of new passages finally ending in a series of impressively large chambers.

As anticipated, we gained a better understanding of the quantity and complexity of cave at the western edge of the plateau.

Unfortunately this year was not without incident and one of our party was injured whilst exploring 200m underground. Thanks to the exemplary reaction of all members of the expedition and heroic efforts of the Slovenian cave rescue service he was safely brought to the surface and is now fully recovered.

Five new cavers (who only started caving in 2015) joined the expedition this year. Through hands-on experience in bolting, surveying, and rigging the existing, and later newly discovered cave passage they contributed to the success of the 2016 expedition to Migovec.

Prospects

Two main regions of Primadona require our attention in future, both with showing good promise of development. The first is the old, deep pitch series, left unvisited below the Adjovcina pitch due to time constraints. The state of the 'lead' at the limit of exploration is unknown, but may hold the key to reaching a magic '-600 to -800m' structural level, which has proved very fertile in Vrtnarjia. The second is the major horizontal development named 'Smer0', heading north from the start of Galerija, at -250m from the entrance of the cave. Several other undescended pitches at various levels of the cave were left due to time or logistical constraints, namely above and below TTT pitch on the Povezava branch, and off the horizontal levels of the Monatip side of the cave system.

Finally, several leads at depth in Vrtnarjia remain unpushed but necessitate the set-up of an underground camp. Those are described in the 2015 expedition report.

Expedition Logistics

Set-up of the surface camp

Two expedition cavers flew out to Trieste and made their way to Tolmin a week earlier than the main expedition with the aim to start the set-up the surface camp. This provided the opportunity to strengthen ties with the local alpine caving club, the JSPDT.

A nine seater minibus was hired from Imperial College Union for four weeks and two days, starting on Friday July 8th, ending on Sunday August 7th. This was driven from South Kensington to Tolmin, Slovenia via a Dover-Calais car ferry. Special permission was acquired by the JSPDT to camp in the Triglav National Park. The van was driven up to Tolminske Ravne on the next morning, where the Koblucar family kindly let us use their barn to unload and store equipment waiting to be carried up the hill (final 900m ascent to our bivouac spot). The bivy was then occupied non-stop until the end of exploration.

Locating the entrance

46,252186 N 13,758407 E marks the beginning of the cliff abseil.

Reconnaissance of the surface abseil to the entrance of Primadona started on the Monday It then took three days, involving a recce- trip from a path below the entrance to locate and rig the route down the cliff, whilst the essential carries of caving gear, food, an extra solar panel and rope took place.

Route finding to the likely leads was aided by local Slovene cavers who led a guided tour of the cave. While the entrance series was resurveyed, the discovery of new passage began in earnest.

Rigging, bolting and surveying:

This year saw 800m of 10/11mm semi-static rope brought out to Ravne (hamlet at 900m elevation) and carried up the mountain for the rigging of the surface abseil, and inside the

cave to replace the ageing entrance ropes. When this was done, the remainder was used for the exploration of a 180m deep new shaft series in Primadona.

Thanks to an improved charging capacity, the bolting was primarily done with the aid of Makita drills, powered by Li-ion batteries, using 'quad-fluted' bits. The placement of stainless steel expansion bolts to further the longevity of the current alpine SRT rigging set-up was systematically encouraged. As a result, the entire abseil and entrance series and all new passages were equipped with this more durable set-up.

Surveying was carried out using tape or laser rangefinder together with compass and inclinometer. The data for main centre line of the newly surveyed sections were entered on the plateau, allowing for immediate 3D visualisation of the cave, and identification of promising passages or impending connections (eg: 'What a Coincidence' passage joining up with the old shaft series), whereas the cave passage were drawn whilst in the cave, on notebooks later archived as scans.

Expedition findings

Surface exploration:

TR01

The cave entrance was spotted in 2014, in the limestone pavement directly north of the Migovec Trig point. It is accessed by one of several openings in the pavement, at the intersection between two perpendicular joints. The cave has three different entrances: the aven entrance, reconnecting with the main chamber, and two holes leading directly into the main chamber. The larger one was rigged. A single 5m drop leads into the main chamber of modest dimensions (3m high by 10 x 5m), plugged with snow. On the western wall, a crawl on pebbles drops into a snow filled smaller chamber decorated with ice curtains. A hole in the snow plug leads further down to a the beginning of a small rift heading east. It is impassable. Some excellent ice formations including a sizeable 1m high stalactite decorate this last passage.

Coincidence Cave

A return to the surface dig was made. The tight passage was found to choke with rubble 5 metres in, blocking a way on seen the previous year. No strong draught could be felt.

Exploration in Primadona

The Rock

Karstaway-Mighty fine indeed

Karstaway is found at the bottom of Rokovo Brezno, on the Galerija branch below Sejna Soba. At the bottom of the 30m pitch, a series of downclimbs in a sinuous rift lead to a small chamber formed at the intersection between the rift and a fault plane which carries a small stream. Upstream of the chamber, a small aven with calcited mud floor and haematite pebbles can be accessed. Downstream the rift closes down to a passable plane, covered in black popcorn formations. Further on the passage widens and the clean washed walls under a drip reveal a much cleaner white limestone. The passage bends away from the fault plane at a 10m high aven, and the way on is on the high level of the rift, abandoning the streamway to reach the scalloped walls of the ancient phreatic conduit. After an S-bend, the passage continues to the west, with white limy mud lining the pockets of the walls of the same colour. The draught is followed downwind all the way to the top of a 20m pitch, the end of Karstaway.

It is possible to drop down to the streamway further back in the passage, and two such approaches lead to undescended drops, which do not appear to connect with the pitch further west.

At the pitch head, a clean hang drops into Mighty Fine indeed, a three-pitch series. The second pitch is found on the western side of the boulder strewn floor. At the bottom of this smaller, irregular shaft, a traverse leads off to the west onto the last pitch head. A 'Y'-hang take off from a pointy ledge enables a long drop to a rebelay, which completes the descent of Mighty Fine Indeed.

Hall of the Mountain King - Colony

The Hall of the Mountain King is large cavern in which Mighty Fine indeed drops. The boulder floor has several leads to a small, immature streamway. The rock is jagged and sharp and very friable. The cavern itself is elongate in the W-E direction, with two separate avens coming in the middle and far end respectively. The western side of the Hall of the Mountain King narrows to a 5m wide, weakly sinuous rift, with a 5m climb barring progress at the end. Up the climb leads to a short elevated platform which drops into a perpendicular passageway, heading NNW-SSE. To the north, a 30m long passage, Colony follows a fault line, with different levels separated by wedged boulders and stops overlooking a chamber of large dimensions. A short traverse over the exposed 40m drop (Blue Danube) reaches a short continuation of the horizontal passage, before emerging again in the side of the large chamber (Upside Down Chamber).

Blue Danube - Upside Down Chamber and its extensions

Blue Danube is a 46m pitch. The first section is again the fault wall, while the following 30m freehang drops into a circular 6-7m diameter shaft, with a narrow streamway leading off at the bottom. Midway through the freehang, a swing lands on a boulder slope, forming the southern end of Upside Down Chamber.

What a Coincidence

From Colony, the upwind horizontal passage leads to a series of mud floored chambers. Further progress along the mud covered passage (trending SSE) intercepts a first pitch with both downwards and upwards development. While the pitch was left undescended, exploration ropes dated '1998' were found on the upper part of the aven, dropping down to gallery level. Further along the horizontal gallery leads to a second pitch. The 15m drop was rigged and dropped on a large boulder floored chamber, Ajdovcina. On the far side of the chamber, previous exploration ropes had already been rigged. These lead back up to the surface via the TTT branch.

Cattlegrid - the Stile

The Stile is found on the north end of the 25m pitch dropping into Galerija (into a chamber named the Waiting Room), by crossing under the spray and climbing down into a muddy tube. The ceiling exhibits fine scalloping and is mostly free of mud. A junction is reached after twenty metres, where a little drop down to the left marks leads to a cleaner and wetter passage. Keeping to the dry muddy tube immediately joins the larger Smer0 gallery. Following the clean tube leads to a 2m drop into a circular chamber with an inclined floor. The passage doubles back on itself, being a mainly bedding plane controlled series of interconnecting phreatic tubes. A small stream is joined, which connects with Cattlegrid almost immediately, closing the loop.

Cattle Grid can be found either through the Stile or by climbing down the boulders at the western side of the Waiting Room. From the bottom of the boulder a low crawl branches, right becomes tight very quickly (possible, unlikely lead), left through some puddles and a squeeze opens out into a small chamber. From the chamber a small dry narrow rift goes vertically downwards. This was rigged as a pitch, but at the bottom (~10m down) it became too tight to continue. From the same chamber a streamway runs tangentially. This can be followed upstream to The Stile (where does the water come from?) or downstream to an undescended ~5m wet pitch (a good prospect).

Quantum state -Terminus

Quantum State begins as a 2 m by 3m hole in the floor of the Smer0 gallery. Above this hole, a large, clean washed aven ascends (unexplored, and it is possible to climb quite high up unaided. A good prospect for bolt climbing). The hole is surrounded by a pile of loose rubble, and descending the pitch it becomes apparent that the 'ceiling' is just this same loose

rubble. The pitch takes a small amount of water, which originates from the aven. The pitch is roughly circular, 10m in diameter and 20m in depth. You land on a smooth, clean, floor. Across the shaft, a small crawl goes off, following the water into an immature streamway. This can be followed, down a further small pitch, to where it eventually reaches a small perched sump (Terminus).

Déjà Vu

Below TTT pitch, a series of climbs down drop into the main rift, which is the continuation of the old deep pitch series. After two pitches (P7 - P5) it is possible to turn right, upwind and upstream at an obvious junction and follow a typical keyhole shaped passage for fifty metres. The passage then emerges in a breakdown chamber, some 15m in diameter and 20 m high. By climbing into the elevated southern part of the chamber, a pitch head (P20) is reached, which takes the draught. Near the pitch head it is also possible to climb up into a bridgeable aven, and reach a more elevated position in the rift, with aid-climbing required to go higher. The pitch identified is 40m away from the old, main pitch series.

Notes of the Povezava branch

At Sejna Soba, a slide down next to a smooth boulder leads to a collection of dry dusty chambers which then open up at a junction. The way on to TTT is marked with a carbide splodge. Taking a right quickly leads to an undescended pitch. Povezava is the name of a large aven met en route to TTT on the branch linking Sejna Soba chamber and the old main pitch series. A bolt-climb can be attempted to reach a balcony 10m above the aven floor. After Povezava aven, it is not advisable to follow the rift high up, which leads to a small loop of phreatic tubes. At mid-rift level, just before a cascade climb down (way on) it is possible to take an unsurveyed right turn into a small immature phreatic keyhole. This doubles back underneath the main rift and rejoins it after 50m. Stara Jama branch comes in at right angles from the right at the chamber named Mandare, which is a short way before the top of Brezhno TTT.

Exploration in Monatip

The Auld Alliance

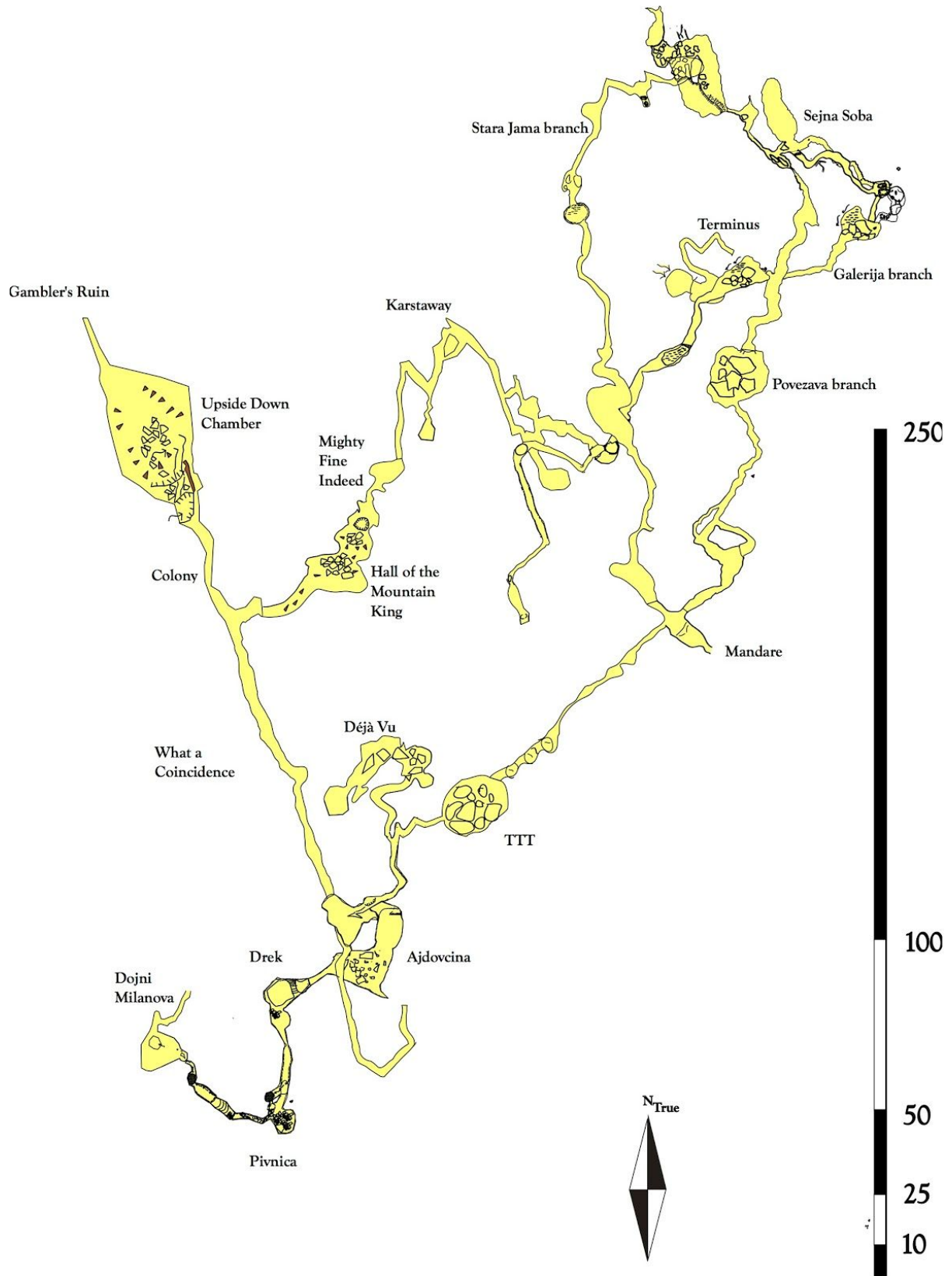
This is a large pitch located on the Monatip-Sysmig connection passage, between the Singing Rock pitch and NCB boulder choke. The pitch was descended to a ledge 15m below the horizontal gallery level, but it continues for at least another 30m of spacious vertical development.

Cloaca Maxima

The start of the passage is found below *Big Chamber* in Monatip. Upon reaching the rift, a traverse onwards is the way to the old connection with Sejna Soba in Primadona. By

bridging the rift and clambering in the opposite direction, the ceiling of the passage drops. A climb up leads to the left hand wall of a 3x3m chamber. An obvious phreatic tube, taking a very small amount of water, leads to the SE. It dips almost constantly at 10°, and takes a good draught. The passage intercepts another chamber, plastered with mud, where a way on can be seen back underneath a downclimb, 4 metres below the incoming passage. The way on is on the opposite side of the chamber, as the continuing tube. A four metre upclimb, and the passage continues as a phreatic tube until a junction is reached. On the right, the tube ascends gently to a pitch head twenty metres away. The pitch is as yet undescended. To the left is the downwind continuation, where another junction is found. Upwind on the left leads to a 15 metre climbable aven as yet unpushed. Downwind the tube takes a key hole shape, which culminates in a downclimb to the floor of a 40m high aven. The shaft is 20x10m, it's floor littered with clean washed boulders. There is no apparent stream. On the southern side of the shaft is a climb leading into an aven of more modest dimensions (10x5m, 20m high) which is blind. The way on is through the continuation of the tube, located at floor level, on the western wall. The draughting passage lowers to a crawl in several places, and a few drips are passed until it enlarges to a free-climbable drop (3m). The passage narrows down to a window overlooking a much larger space. This was found to be in excess of 30m deep, and is almost certainly Alkatraz chamber. The whole section of cave sits well above the Monatip rift. It is on the same plane as the horizontal galleries of Monatip that led to the connection with NCB.

High resolution surveys of Primadona:



Conclusion

Due to the dry nature of Primadona's upper passages, only the wet pitches and the surface abseil needed derigging. This was done on the last Tuesday of the expedition. The next day we carried off the gear and caving equipment we had planned to take down to Ravne and back to London, and started clearing out the surface bivi shakehole. The final descent occurred on the Thursday and after an afternoon drink at the Koblucar's barn we drove down to Tolmin, where we spent the next day finalising the survey notes and entering the last data to share it with the local JSPDT. The minibus left Tolmin on the Saturday morning, making it to Calais in the early hours of Sunday. We arrived at South Kensington at midday, where we unloaded the van, and put the crates in stores for another year.

Overall, the varied findings, which range from horizontal galleries to 40+ pitches were down to the commitment of the expeditioners, who, from first year novice to old lag, learnt new exploratory skills.

Finances

We are very thankful for the support of the Ghar Parau Foundation and the Alex Pitcher award.

Expenditure		Income	
Food	£1 325.10	Ghar Parau	£1 100.00
Caving equipment including survey equipment bolting equipment etc.	£2 222.33	Member funds	£5 295.15
Travel	£2 426.38	following year fixed cost	£425.31
Other costs e.g. bivi stuff	£770.26	Alex pitch recipients	£150.00
total	£6 744.06	total	£6 820.46