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The Speleo Spiel

Newsletter of the
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Editorial

Well It's been fun knocking this rag together and caving with the new / old mob for the last 2 years. But unless someone would like to offer me a job, it looks like I'll be moving back to Sydney very soon. Much against my desire I assure you, I guess you can't cave if you can't eat. On a more serious note I must resign the positions of Spiel Editor, Vice President and Web site / Mail List maintainer. I would have done this at the last meeting but the final decision's were only made last week.

Although I will always remain somewhat nostalgic for the old TCC if the truth be known this is probably just nostalgia for ones misspent youth. It has been pleasing to watch the STC come together and while we can always whinge that there isn't enough caving being done. Most of what I have seen go through the pages of the Spiel has been good and interesting caving. At this stage what more can I say, I look forward to seeing what the next Ed produces.

John Hawkins-Salt (Spiel Editor)

[John, thanks for doing a wonderful job. The good work will continue!! Eds assistant]

Club Matters

Forward Program

22/7 Draining for the evening in the Hobart Rivulet - contact Jeff
26/7 GPS'ing up the Florentine, Tony Veness
1/8 August Mole Creek weekend - contact Jeff
8/8 Lost Pot - contact Dave Rasch
15/8 Arthurs Folly, Leigh Douglas
19-20/9 Wolf Hole/Midnight Hole - contact Liz and Hugh

Any other ideas (beginners/medium/hard trips) please slot them in and be a contact number.
Leigh Douglas

THE KARST X-FILES

Police reports indicate that on a balmy day in May this year drivers on the Midlands highway reported seeing several strange objects littering the roadside. On closer examination the said objects appeared to be cave formations. One motorist reported that a large unidentified flying object, with the "look of a small black hole" was seen blowing through a paddock.

I believe the local Karst Officer was called in to investigate this strange phenomenon. Apparently Mr. Houshold declined as the sighting was just too nebulous for him to bother wasting time on.

Secret sources have revealed that this phenomenon does indeed have an earthly explanation. From the State Government Department of Red Faces it has been revealed that a well-known person, (you could say a household name) happened to misplace a portable cave exhibit whilst en-route home from Agfest. Rumour has it that the failure of some low technology equipment, namely a length of electric fencing wire was the cause of the release of this high technology exhibit.
anon.

For Sale or lease

Indoor Rock climbing gym. Located in existing fitness centre in North Hobart, ph. 015666093 for more information.
Also for sale Numerous items of caving gear, SRT set with Fracto harness, Petzl laser headlamp and ariane generator, etc. etc. Ph as above.

Search and Rescue: An update of the Call-out List, your Skills and Preparedness.

Since the grand merger of SCS, TCC and TCKRG there has not been an update of the Search and Rescue Call-out List. There are some very competent new people about and some of the familiar faces of the past are rarely seen at meetings or underground and so are perhaps not appropriate to remain on the Call-out list. Obviously it is a good time for an update.

Whilst doing the update, it is a worthwhile exercise to get an idea of peoples skill levels, preparedness and availability direct from those concerned. So, please complete the Questionnaire overleaf and return it as soon as possible. If you have comments or questions about this questionnaire, then please ask. Many thanks.

Incidentally, from July 1st, the Police Search and Rescue HQ is now located at 76 Federal Street, North Hobart, just east of Elizabeth Street (i.e. behind the State Cinema). **Jeff Butt (S & R Officer)**

SEARCH AND RESCUE QUESTIONNAIRE

PLEASE RETURN TO -Jeff Butt, either at a meeting, or post to P.O. Box 416, Sandy Bay 7006.

1. CONTACT DETAILS

- Name: _____

Are you willing to assist in Search and Rescue Call-outs? _____. If so, then please complete the remainder of this form.

- Home Location (postcode): _____ Phone: (___)_____
- Work Location (postcode): _____ Phone: (___)_____ Mobile Phone: (___)_____

2. CAVING/RESCUE SKILLS/RESOURCES

- Please rate your caving ability (i.e. Horizontal caver, Single Pitch caver, Multi-pitch Caver)? _____
- Approximately how many caving trips have you done in the last 3 months? _____ , in the last year? _____ , in the last 3 years? _____
- What is the most difficult caving trip you have done in the last three years (e.g. Burning Down the House, Wolf Hole, Growling Swallet, Ice-tube etc.)?

_____

- Do you have your own SRT gear? _____ , your own caving lamp? _____
- Do you cave in cotton overalls? _____
- How many Search and Rescue Exercises have you participated in? _____
- Have you ever completed a First Aid certificate? _____. If so, then in what year did you last complete one? _____ and what certificate was it?

_____

- Do you have camping (i.e. tent, sleeping bag, stove) equipment? _____
- Please indicate (via "Yes" or "No") which of the following skills you possess:

able to rig pitches in a safe and efficient manner: _____
able to install artificial anchors (i.e. bolts) : _____
able to rescue someone from a rope: _____
able to install and use an underground phone system: _____
able to use a hand-held (VHF) radios: _____
familiar with stretcher carrying: _____
familiar with stretcher hauling: _____
able to set up hauling systems: _____
able to navigate on the surface using a map and compass, by Day: _____
able to navigate on the surface using a map and compass, by Night: _____
able to navigate using a GPS unit: _____
able to safely use a chainsaw: _____
able to camp overnight in the bush: _____
familiar with embarkation/loading etc. of helicopters: _____
familiar with safe digging practices (e.g. use of shoring/supports) : _____

- Do you possess any specialised skills and/or knowledge? (e.g.; Medical Doctor; have extensive knowledge of a particular cave(s) or caving areas; cave diver; possess a Shot Firers Licence; etc.) If so, then please give details:

  _____
  _____
  _____

- Do you possess any Caving/Rescue resources (e.g. static ropes, caving lamps, caving wetsuit, digging implements, bolting kit, chainsaw etc.). If so, please list.

  _____

- In what capacities do you think you are best suited to help in the event of a Call-out (e.g. Surface Work, Underground Work-Horizontal Caves, Underground Work-Vertical Caves, In any required Capacity)

  _____

3. PREPAREDNESS & AVAILABILITY

- Is your employer amenable to you attending S&R Call-outs? _____
- Do your employer require a letter from Police S & R to allow you to attend? _____
- If you receive a Call-out, how long will it take for you to collect your gear and turn up to S&R HQ (in North Hobart), from Work ___ (hr), from Home ___ (hr)?
- If the situation ever arose, would you be able to assist with an incident interstate? _____

Trip Reports

Tour de Suiss- part 2, plus the Canadians 6-24/2/98

Participants: Swiss cavers: Rachel Rumo and Roman Hapka; Canadian cavers: Greg Horne and Louise Jarry; Armchair caver & occasional participants: Arthur Clarke and Albert Goede.

Introduction: This report more or less follows on from 'TOUR de SUISSE, Part 1, 20/1/98-4/2/98' the article written by Jeff Butt, which appeared in Speleo Spiel #306.

Just a little background: while we were attending the UIS (International Union of Speleology) four-yearly conference in La Chaux de Fonds in the French-speaking part of (Northwest) Switzerland in August 1997, Jeff and I met a number of Swiss cavers including Roland Huber and Roman Hapka. Our descriptions of Tasmanian caves and karst had encouraged a group of Swiss cavers to include Tasmania on their global caving travel list! Subsequent to our European visit, both Jeff and I had been in email contact with two Canadian cavers from Jasper National Park in the province of Alberta, east of the Rockies, who reckoned on being in Tasmania in February this year.

During late January, Jeff had the pleasure of escorting all the Swiss cavers: Claude-Alain Diserens, Roman Hapka, Roland Huber, Rachael Rumo and Florence Vonlanthen into caves at Hastings, Ida Bay and Junee-Florentine (see Speleo Spiel #306). After attending ASF Council in Melbourne, I came back to Hobart to see the Tall Ships and host a farewell/welcome party on Friday night (Feb. 6th): Claude-Alain, Roland and Florence were off to Cairns and it was just a few days after the Canadians (Greg Horne and Louise Jarry) had arrived and just been to Ida Bay and Exit Cave.

Mole Creek Karst Seminar (and caving trips):
The 1998 Mole Creek Karst Seminar (Feb. 10th-13th) seemed like a reasonable way to be an armchair caver, but also show our visitors some of the Mole Creek caves. On Day One of the Seminar (Feb. 10th), Rachel and Roman accompanied Henry Shannon (Northern Caverneers) into Croesus Cave, via the efflux (MC-013) while Albert Goede and I took Greg and Louise into Lynds Cave, via the top entrance (MC-065). Croesus Cave was reportedly quite wet, though much appreciated by the Swiss and their camera/s. Our trip into Lynds Cave was fairly uneventful, though trying to avoid wet feet by walking along the slippery algae covered rocks beside the Mersey River was a bit treacherous; we soon discovered it was easier to wade. The deep pool that you wade through near the Lynds Cave efflux wasn't too bad: not quite crutch deep! Lynds Cave was reasonable, but a lot more muddied than I remembered from previous visits and there was evidence of a recent wall collapse; Henry Shannon believes this probably occurred during or around the time of the recently recorded earth tremors at Mole Creek. Greg and Louise were quite impressed by the speleothem decorations and Greg took quite a few photographs, using both Albert and I as his "models", while Louise operated the flash unit!

Day Two (11-2-1998): Marakoopa I, Marakoopa II and overland scrub-bash.
Greg, Louise, Rachel, Roman and I joined Henry Shannon and other Karst Seminar participants on a brief tour of Marakoopa I (MC-120) - taking a grand tour of the Long Creek Branch, then emerging via MC-121 briefly into daylight, then entering Marakoopa II (MC-015). On the floor of the long and meandering, scalloped streambed, I located a few hydrobiids (aquatic snails) which were of particular interest to the French cavers, though I believe they were hoping these would be larger, more appetising snails! Rachel and Roman were more attracted to the vast number of largish bright yellow aquatic flatworms near the upper entrance of Marakoopa II (MC-128). Out on the surface we followed Henry on a bush bash, firstly to the impressively large sinkhole: Devil's Earhole (MC-009) where Rachel saw her first Tasmanian Tiger Snake, then secondly to the spectacular swallet: Devil's Pot (MC-130) with a waterfall entrance pitch. After lunch in the carpark outside Marakoopa I, Rachel and Roman joined Andrew March and Paul van Nynanten on a trip over the mudbanks into 'The Canyon' and 'Fireplace' of Short Creek Branch of Marakoopa I, while I accompanied Chester Shaw and some ACKMA visitors to check out some vibrating straws and stalactites and a glass-encased stalagmite feature known as the "Tuning Fork".

Day Three (12-2-1998): Baldock's Cave, Gillam Creek sink (Gillam Cave), Mill Cave and Tailender Cave.
An early morning jaunt up Sassafras Creek to show our French and Canadian visitors what an abandoned tourist cave: Baldocks Cave (MC-032) looks like. Following a brief look at the rusted old carbide tanks that generated acetylene gas for cave lighting, we had a brief tour, walking along old pathways paved with manfern trunks. I located a small pool of water containing a few 'blind' aquatic amphipods and some small round-shelled aquatic snails (hydrobiids): believed to be new species of a new genus, similar to those found in My Cave (MC-141) [see page 11 in Speleo Spiel #303].

Following morning tea back at the Mole Creek Guesthouse, our visitors tagged along in an organised Karst Seminar tour of dolines and dry valleys located in Mole Creek farm paddocks, sampling lots of small, but vaguely edible blackberries, then following the steep-sided dry valley to Gillam Creek sink and Gillam Cave (MC-080). In the afternoon, our visitors decided to go and see what a smelly Tasmanian Devil looks like, so Albert Goede and I went back to the picnic area near the Olivers Road crossing of the Mersey River to find some caves. We had been told to follow the LHS bank of the river, going upstream, in order to locate the rarely visited, 'hard-to-find' (??) Mill Cave (MC-063) and Tailender Cave (MC-064). Instead we discovered a well beaten trail along the flat-top of a former glacial outwash terrace beside the Mersey River, which lead straight to the caves, found lying in the first gully that intersected this terrace, about 30-40 minutes walk upstream from the picnic area. Mill Cave is a fairly grotty little efflux cave located close to the Mersey River; grotty because it involves extensive crawling and 'bellying' in a low roofed muddy streamway. Tailender Cave is more impressive, located in the RHS wall of a doline just past a manfern glade up the dry valley from Mill Cave. A short drop leads into another efflux streamway, and eventually a short climb up through rockfall takes you into a long decorated passage through breakdown boulders; although apparently unsurveyed, this cave is about a kilometre long and appears to have many unexplored (untrogged) leads.

Day Four (13-2-1998): Searching for Kutna Hora.
Our visitors were trying to score a trip into Kubla Khan, so Albert and I decided to locate the recently discovered 'new' cave: Kutna Hora (MC-162), supposedly located upslope in the privately owned Radiata Pine plantation, opposite Quinces Place, on the road to Honeycomb and Wet Cave. We located a couple of cave entrances (without cave numbers), including one dry horizontal cave entrance high up on the hill near a break in the pine forest; there were plenty of spider webs in the entrance, but no discernible draught and no sign of any recent trogging, so we left for Hobart!

Surrounds of Francistown caving hut and Ida Bay:
The week after the Mole Creek Seminar (Tues. 17th to Friday 20th February), Greg and Louise decided to go bushwalking, then head off to the north island (mainland) of Australia. Rachel and Roman came back from Mole Creek and a visit to Launceston in their rented bright-orange 'Rent-a-Bug' VW beetle and were keen to check out something else 'new' at Ida Bay, particularly any cave that hadn't been surveyed. I suggested either, or all of three partially explored, unsurveyed vertical caves: Western Creek Swallet (IB-018), Yodellers Pot (IB-025) or Gollum's Grovel (IB-028) [all caves that were described by me in Speleo Spiel #219 and 221, August and October, 1986]. While at the Francistown caving hut, with thoughts in mind of going caving (instead of looking where I was going), I fell into a cavity behind a brick wall and twisted my knee - so had to give access instructions to Roman from a hospital sick bed, back in Hobart!

Jeff was 'caved out', so without a local guide to show the Swiss how to find IB-028 or IB-025, Roman and Rachel opted for Gollum's Grovel because it was in the vicinity of familiar territory behind the old Blayneys Quarry, near where they had previously been to 'Toblerone Pot' (IB-089) in Lost Lens Doline. IB-028 was previously explored by Mick Flint and myself in June 1986, down to a lower level streamway, estimated to be 80-90 metres below the number tag point. The cave entrance is located in a cliff-walled doline, at lower end of a dry gully about 100 metres south of the LHS back wall of the old quarry near Mystery Creek Cave and track to Midnight Hole. The IB-28 number tag is located on RHS of a fissure entrance in the doline cliff wall, but actual entrance to the cave involves a grovel under rotten logs in the base of the doline, then climb down into a large chamber with massive boulders (some unstable) and a side-stream passage that leads to a series of four or five vertical pitches, with cave-coral on walls of top two shafts. On Wednesday, Feb. 18th, Roman Hapka claims to have located the site and states that he free-climbed down the first two ten (10m) and twelve (12m) metre shafts, but then reckoned the cave had too much unstable rock to risk further solo vertical caving, let alone cave surveying. While Roman was underground, he left his GPS unit running at the entrance, while Rachel went off bird-watching. It will be interesting to compare Roman's AMG readings with those of our new GPS unit.

On Thursday, Feb. 19th, Roman and Rachel went into Mystery Creek Cave to photograph the glow-worms, then bade farewell to the Francistown caving hut and returned to Hobart where they identified and named all the peaks of mountains I had photographed in the Swiss Alps, as well as translating sections of a French-Swiss book written by Roman: titled: 'Baumes et Gouffres Neuchatelois: decouverte d'un univers fascinant' (Shelters and caves of Neuchatel: discovery of a fascinating universe).

Arthur Clarke

Recent exploration in the North Lune karst: 30/3/98

Party: Robyn Claire, Arthur Clarke and Stewart Moscrop.

The North Lune karst area is a relatively new karst area located about one hour's walk south from the Hastings dolomite karst, accessed via an old logging tramway track from the Hastings Caves car park. The North Lune area is a glaciated limestone karst area, presently dissected by two northern tributaries of the Lune River: Mesa Creek and Gleichenia Creek. There are fourteen known caves in this area which has been sporadically explored by cavers since 1986. Most of these numbered caves including Spider Den, (a cave with 47 invertebrate species, including troglobites) are quite small, but there are two impressive swallets: Top Sink and Mesa Creek Cave - both of which have not been explored. Cave exploration has been concentrated around the fringes of the limestone deposit and in Mesa Creek itself where there are a number of streambed dolines, sinkholes and swallets, which may be a source of the waters which rise as warm springs near the Lune River and the Hastings Thermal Pool **(Clarke, 1998).**

I had been contracted to submit a National Estate nomination for the invertebrate fauna in Spider Den to the Australian Heritage Commission. Since I hadn't been out there for about 4-5 years, I was keen to re-new my acquaintance with the area and take some photos of the place to support the nomination, as well as checking out some of the many and varied ferns and bryophytes (mosses and liverworts) that grow in abundance near Spider Den.

The tramway track is basically flat all the way, but it crosses a number of small gullies and dry valleys. The track was very overgrown and plastered with tree-fall logs, so it took nearly an hour and forty minutes to reach the limestone. At the edge of the limestone, a recent tree-fall provided a natural diversion across a gully which lead straight into a 'mine-field' of dolines where we located two new caves. The first un-named cave (NL-X5) is a narrow rift requiring a thin person with a long rope; the second cave: 'Slippery Hole' (NL-X6) was entered by Stewart, the only one of us sensible enough to bring a pair of caving overalls! This is another small cave, with a slippery shute down a rock wall which leads to a small chamber with speleothems and lots of cave crickets and spiders. We wandered up the side of the limestone outcrop and eventually located Spider Den (NL-3) surrounded by masses of ferns and bryophytes in a lush sassafras dominant rainforest. Upslope there are masses of 2-3 metre high pinnacles of rundkarren: the solution rounded fluted spires of limestone, which seem to be a feature of this section of the North Lune karst, possibly resultant from soil loss due to erosion or fires, associated with the logging activity here around the turn of the century **(Clarke, 1998).**

Reference: **Clarke, A. (1998)** "Ferns and bryophytes from the North Lune limestone karst of southern Tasmania." ACKMA Journal, 31: 49-54 (June, 1998).

Arthur Clarke

Track-cutting the access route to North Lune karst area: 16/4/1998

Party: Robyn Claire, Arthur Clarke and Mick Williams.

Following the access saga, just over two weeks before, I contacted the Forestry Tasmania and Cave Rangers at Hastings to get permission to clear the old logging tramway track to the North Lune karst area. Neither of these bodies seemed to know who was responsible for the area, let alone the track, and neither of them objected to any track clearing work, so I came out armed with an axe and chainsaw (with new chain) to create a better walking access route. The track is now a 'four lane' highway, and includes a section cut through the viney Bauera scrub and the interwoven tangly Gleichenia fern across a swampy section of the track, but there are still at least two sections of cutting grass that could be grubbed out to improve the route.

Unfortunately, it was a pretty damp and miserable day, so the revamped track clearing only reached as far as start of the limestone karst, about halfway to Mesa Creek. We had a brief look at the limestone outcrop, collected some more fern and bryophyte specimens and in fading light found a few more dolines with possible cave entrances worth checking out another time. On the way out, Mick got a bit bushed in a patch of horizontal scrub further along the uncleared part of the walking track, but survived the ordeal despite his injured chest. Walking time from end of this chain-saw cut track, back out to the Hastings Caves carpark was now reduced to a pleasant easy 35-40 minute leisurely stroll.

Arthur Clarke

Three Falls Cave (JF225)-9/5/98 & 20/5/98.

Party (9/5/98): Hugh Fitzgerald, Liz Canning, Paul Scofield, Phillip Tracey, Jeff Butt.
Party (20/5/98): Hugh Fitzgerald, Paul Scofield, Jeff Butt.

Whilst on the flavour of trying to visit caves I have never visited, I suggested a trip to Three Falls Cave and with phone calls our numbers gradually swelled to five. It was good that we were going to a cave that was 'new' to us all; that was until Phillip realised that Three Falls was the one wild-cave he had ever visited before!

It was a horrid day on the surface, very wet (the Tyenna River was running a banker), and by the time we pushed the short distance through the vegetation (the track is reasonably well taped with yellow tapes) to the impressive entrance we were soaked.

After finding our way down through the cave, it is very apparent that the published surveys (Southern Caver V11(1), 1980, p3-5, to a depth of 84 m; and a better version of the same survey in Vertical Caves of Tasmania, modified to take in the lower extension found by Stefan Eberhard and Nick Hume in 1982, Speleo Spiel 176, 1982, p3) oversimplify the cave and really only show the main passage. In the top section of the cave (very crawly) there are several wrong ways. A 10 m handline (quite climbable) took us to the top of the first pitch (equipped with two bolts, one on the slab to the right and a second on the wall on the other side of the pitch, across to the right-marked with a yellow triangle) there are two routes; down the pitch, or along a horizontal passage to the left. This passage then gets into a narrow bedding plane rift heading steeply down and water can be heard. We chose the 'down' route, emerging into a chamber above the stream-way. Another short pitch/handline down took us to a chamber with a veil of small waterfalls; again there were several options, going beneath the veil of water wasn't perceived as the best. Instead we went right, in a rift above the stream-way and soon found two marked bolts, one on each opposing wall (marked by yellow triangles), 5 m down the inclined slope is a horizontal ledge on the left with another bolt (this with a short sling makes an excellent deviation). About 4 m down one reaches the waterfall, and on the rock arete on the RHS (looking down-stream) of the waterfall are another 2 bolts (both poorly done, each casing protruding 2-3 mm)-presumably used for those who have followed the stream down; using these bolts would put you pretty well right under the waterfall; we ignored these). Our route was by far the better, but still allowed one to experience the spreading waterfall for the last few meters. At the base of the waterfall the stream-way heads down a narrow slot, one would have to be lying in the stream way to get through-definitely not feasible for the amount of water we had.

Meanwhile, Paul had come down to join me. We noticed a high-level passage heading off opposite to the waterfall and tried to get Hugh to pendulum across to it as he descended, but this wasn't possible. As it looked like it was too wet to get any deeper, Paul headed up the waterfall pitch and after a small swing found a waterfall pouring into his open trog-suit as he prussiked up. Meanwhile, Hugh had found it possible to climb up a slippery bedding plane rift to gain the higher level passage. We yelled for Paul to come back with the rope, but he politely declined, but did send the rope down with Phillip and Liz. Paul opted to head out to warm up and spent his time having a good poke around en-route out, including an explore in another cave beneath the doline waterfall cliff-line. It was possible to anchor the bottom end of the rope to a large block here; thus allowing Phillip and Liz to come down and remain dry. From this window a short down-climb put us into a huge chamber (lunch-time chamber), with lots of large blocks stacked up in a fissure on the left-hand side. There were several pitches and climbing options in this fissure. On the other side was a steep ascending slope. We had a good look around and the best option was to climb down the talus filled fissure, heading back towards the stream-way. The talus here is very chunky, even the solid bits look rather dodgy, especially when viewed from the steeply sloping chamber beneath it all. A short handline (8 m rope and a short sling) is essential to allow one to get back from the lower chamber into the bottom of the talus pile. From the base of this chamber a short climb through rockfall brings one back to the stream. There are some nice formations here, but ones attention is drawn to the impressively dimensioned shaft (about 3.5 seconds), down which the stream plummets (hidden by a large protruding block over the top). Some 15 m above this pitch head are several car sized chock-stones stacked in the rift, Hugh found himself on top of these by going right in the fissure from the lunch-time chamber; he also reached the same pitch from a different direction via another path in the rockfall filled fissure above. At the pitch, acceptable rigging possibilities were sparse; use of the protruding block was considered, but after a look underneath it we decided it was best left alone! Even if the block was safe, use of it would result in the rope free-hanging down the middle of the waterfall, an unattractive option. A couple of bolts on the right hand wall would be the safest and driest way to go, it was a bit surprising that there were none there. So, with only 38 m of rope and no bolt-kit, we decided to call it a day and leave the cave rigged for a return visit.

The three house-husbands of the original five made a return trip on what turned out to be a very wet mid-week day in Hobart town. It had recently been wet in the Florentine too, as the ever faithful Orana couldn't

make it up the top end of the Nine Road, the moss was just too greasy for progress. After a warming walk, we made a speedy descent down the cave to the top of the 'last' (we hoped for more and had some spare rope to cover that eventuality) pitch. With the rope tied back to a large block and deviated by a thread in the left hand wall I placed a bolt (standard Petzl 10 mm spit) just over the lip on the right hand side of the pitch head. Hugh and Paul descended to explore whilst I placed a second bolt approximately 40 cm to the right from the first to make a small Y belay. [The bolt casings have reflective markers attached via nylon bolts.] The rope hangs free from the rock, a deviation down about 20 m (small sling on a tiny spike) allows one to remain almost totally dry. From the bolts, 38 m of rope was sufficient with a few m spare, so the pitch proper is around 33-34 m. We had a good look around in the ~100 m of jagged passage down below, but unfortunately found nothing new. At stream-level there is a very wet bedrock squeeze, i.e. impassable. Up above the stream in the calcite filled rift there are two places where it is possible to squeeze through for a couple of meters, but it then looks impossibly tight. Nothing in the way of breezes was apparent, so the possibility of a connection with Owl Pot (or nearby Tassy Pot) doesn't seem terribly likely.

It would be a very worthwhile project to have a detailed look at the survey data for these three caves in relation to each other to see if there are any other regions through which a connection might be more feasible.

For those planning a visit to this cave, here is some rigging information and history of bolt placements etc. that may be of use.

- 10 m handline (optional), using natural anchors (one long sling, one short);
- 11 m pitch, bolt [198?] on slab RHS, bolt [1985] across on wall across pitch, 16 m rope;
- 6 m pitch/handline, small sling on a projecting rock and tieback, 8 m rope;
- 13 m pitch, two bolts [198?], one on each side for a Y belay, redirect of bolt [198?] 5 m down on a horizontal platform on the LHS. Anchor bottom end to block in passage off to the side about 4 m from the bottom, (about 20 m rope);
- 8 m handline, natural anchor (one sling);
- 34 m pitch, Block on floor 10 m from edge, small thread LHS, two bolts [1998] just below lip on RHS (about 55 m rope, 35 m from bolts).

Jeff Butt

Fruehauf Quarry-SRT training 23/5/98

Party: Rae Glazik, Richard Shahinger, Tim Rudman, Albert Goede, Judy Goede, Tony Veness, Sharon Heritage, Lisa, Hans Benisch, Sue Baker, Paul Scofield, Andreas Galambos, Jeff Butt.

The primary intention of the afternoon session was to ensure those coming to Owl Pot the following day were up to speed with their SRT skills. Despite the forecast rain and threatening skies, it didn't rain, however it did pour with participants keen to learn or brush up on SRT skills! This somewhat taxed resources (three sets of SRT gear and one instructor) but demonstrates the popularity of these sorts of sessions. It would be good to put more similar (and some advanced, e.g. rescue techniques) sessions on the Forward Program.

The 15 m high and bolt studded cliff-face is an extremely good place for these types of activities. It is simple to rig up a variety of ropes with a complete range of obstacles likely to be encountered underground.

Using cowstails, prussiking up (and with more difficulty prussiking down), abseiling, negotiating pitch-heads, rebelays and deviations were the main themes for the day. A few tackled knot crossing as well. By the onset of darkness everyone had been introduced to **Cow**stails, **Chicken** Loops, **Donkeys** Dicks and **Whale**tails; one wonders if vertical caving was invented by a bunch of primary producers. Albert and Judy, the more chronologically gifted of participants performed admirably. Come to think of it, I can't think of a better retirement activity than vertical caving!

Jeff Butt

Owl Pot (JF221)-24/5/98

Party: Rae Glazik, Tim Rudman, Lisa, Hans Benisch, Andreas Galambos, Dave Rasch, Leigh Douglas, Jeff Butt.

Six of us from yesterdays SRT training session were joined by Dave and Leigh making our party eight in number. This was rather on the large size, but did mean that for everyone with lesser experience there was someone with greater experience to act as mentor.

It was wet and horrible on the surface, but once the muddy entrance slope was negotiated conditions could only be described as pleasant and dry. Everyone went to the bottom of the cave, the streamway and final '30m' waterfall pitch being the highlight of the day. Each of the newer people to SRT went wonderfully well, though there was quite a bit of huffing and puffing on the second pitch on the way out. In the cave, Lisa refrained from answering the question "is this better than a day at home studying?" As is often the case, much of the pleasure with vertical caving comes retrospectively (the so called RPT's, retrospective pleasure

trip). It is unfortunate that to accompany the RPT feeling comes stiffness in new-found muscles and the realisation that you've got a pile of grotty gear to clean.

For those planning a trip to Owl Pot, note that here is an update (as recorded in Vertical Caves of Tasmania) on the rigging.

- entrance handline, 2 slings (boulder and tree) plus 22 m rope;
- 30 p (which is actually only about 26 m), bolt [<1984] on left hand wall as traverse line, 2 closely spaced (20 cm apart) bolts [<1996] (both protruding, one 2 mm, one 4 mm-who was the lazy person who bodged these?) high on the right hand wall over the edge. It is best to make a 'Y', using the whole 3 bolts, 35 m rope does the lot.
- Bowling Alley, 2 traces/tapes on blocks and 20 m rope suffices. A deviation on the right about 4 m down (there's nothing there, but one could drill a small rib to make a thread, or a place a bolt) would obviate the need for one protector/pack near the top.
- 30 p Waterfall pitch (which is actually about 25 m), two bolts [<1988] on the right hand wall (no markers, one is about 0.5 m from the lip, the other 2 m further back). You can either protect the lip, or rebelay from the spike on the edge, but this puts you about 30 cm closer to the water!) 30 m rope does the lot.

Jeff Butt

Slack Surface Work in the Serendipity valley-8/6/98

Party: Dave Rasch, Jeff Butt.

The day was too nice for caving, and anyway our flu-recovering bodies weren't up to it! So, we headed up the Florentine to stroll amongst the greenery. The first stop was the top of Tim Shea; the road has recently been done up (all the wash-outs filled in) and the Orana had no trouble making it. Fantastic views and wonderful just contemplating the million dollar view. Incidentally, does anyone know if the obvious limestone cliffs (1:25000 map: Tiger 4427, Grid Ref.: 580717) have been visited and sussed out for caves?

We then headed up the Eight Road and wandered in to the Serendipity Valley. Tony Veness and co. have recently retaped the tracks (orange tape) and have done a good job, two tapes at every track junction etc. We headed up to Serendipity and missed the track to Flick Mints hole (a cave we intend to visit in the next few weeks). We soon found the Benson and Hedges Series of holes, including a couple that weren't tagged, one with a bit of a draught. Labelled pink tapes were left to mark these two holes. After a bit of a wander we located Slimy Pot and then Flick Mints. We retaped the old taped route back until we ran into Tony's tapes. These were a little off beam from here and so we realigned them to fit in with the old track and the Intuitive way back to Serendipity.

An exceedingly slack day, but none the less very enjoyable. Our forthcoming trip to Flick Mints will now be a lot easier as we'll now be able to go straight to it.

Jeff Butt

Testing the new GPS-a visit to Pseudokarst at The Quoin (RO-X's)-13/6/98

Party: Sue Baker, Paul Scofield, Jeff Butt.

This was a little trip to try out the new GPS. We didn't have any maps, just a 6 figure grid reference for the Pseudokarst near The Quoin (SE of Ross, in the Midlands). We entered our grid reference and let high technology tell us where to go (i.e. using the Compass page, so that we always had a distance, bearing and speed of approach to our destination; along with ETA and whatever other statistic we did or didn't desire). Shortly afterwards we were zooming up the Midlands Highway, the roof mounted extension aerial showing that Cuthbert's speedo read high by about 8%. Sue wasn't game to try and calibrate the GPS against a speed camera though! All of a sudden Ross appeared on the GPS screen (the unit has all towns, cities in the South West Pacific stored in it, including even the tiniest places), and sure enough out the window was Ross Bakery (1966 Australian Geodetic Datum, UTM: 55G 0540633 5346535).

It was a bit of a bother that there weren't always roads heading the direction the GPS said to go, nevertheless we did gradually home in on our quest. Around the corner loomed a line of hill top dolerite cliffs, The Quoin no less, and we reached our point of closest vehicle approach. Whilst we were walking

across paddocks towand the dolerite cliffs, about 300 m short of our Waypoint the GPS beeped and displayed the message "You are approaching Quoin", which was indeed correct. The cliffs are about 50 m high, and several hundred metres long. There are several large buttresses of dolerite columns that have toppled over to lie about 20-25° off horizontal, resulting in a side view of hexagons, i.e. the tops of the columns. Behind our chosen fallen buttress was a large doline like feature, very fern rich and with a strong karsty feel. Eureka, we had arrived! In this doline we found entrances to several caverns. Some were interconnected; the deepest was about 30 m deep, with multiple levels and large chambers separated by sloping slots; pretty much like up at Lost World, though here everything was at an angle of around 65-70°. We had a good little explore, but my no means extensively examined the area. The GPS is a useful tool.

Jeff Butt

Midnight Hole SRT'g-20/6/98

Party: Sue Baker, Paul Scofield, Hugh Fitzgerald, Liz Canning, Jeff Butt.

A bit of a SRT training trip/limber up. Hugh and Liz were taking a couple of friends (Mel and Jenny) into Entrance Cave for the day. I took Paul and Sue into Midnight Hole, rigging it for SRT. At the bottom, Paul and Sue headed out Entrance, whilst Hugh and Liz came up Midnight to help derig. A very smooth and enjoyable trip. SRT'g Midnight Hole makes a nice change to doing a pull-through trip, I recommend that you try it sometime. (Note, there are sufficient bolts and natural anchors available to make the rub-free rigging easy. The eyebolts normally used for pull-throughs make excellent back-ups.)

Jeff Butt

A 1 (14/6/98), 2 (21/6/98) at Sesame 1-2 (JF210-211)

Party: (14/6/98) Hans Benisch, Hugh Fitzgerald, Liz Canning, Jeff Butt; (21/6/98) Paul Scofield, Andreas Galambos, Jeff Butt.

I thought that it might be interesting to have a look at the extension found by Rolan Eberhard and Leigh Carledge (Southern Caver 59), and that it would be useful to survey this area to obtain a measure of the proximity to Niggly. Hugh and Liz had accompanied John Hawkins-Salt and Trevor Wailes on a trip to Sesame in 1997 (Speleo Spiel 302) to re-survey the main drag and so had an idea of the route through the cave. We entered via Sesame 2 entrance and soon found ourselves in the confusing area below the 4th pitch where the Nematode crawl (from Sesame 1) enters. We explored the area here, finding several passages, noticing some scratched initials in mud from 1972 and 1983 before finding the correct way on into Sesame Street. Beyond that we found a handline useful on the 25 h, but found that we could free-climb down the bottom half of the 30p.

After the interesting calcite false floor section we soon found ourselves progressing along the rift (aligned roughly along 150-330° magnetic), locating the various small pitches. The 'final pitch to the 207 m deep point was located, but owing to the dubious nature of the single natural anchor, we decided to leave this for the moment and instead traversed along the rift, chimneying over some pretty interesting false floor towards the large Rockfall chamber at the end of the cave. Near this area, I climbed a couple of small climbs on the right, through some particularly gloppy 10 cm thick mud-definitely the first to do so! and found myself in some very large passage (the Mammoth Mud passage), typically 15 m wide, 6 m high and this extended for about 50-60 m and was mostly liberally mud coated formation. There were two minor streamway leads (upstream) leading from the rear of this, but they were tight, formation rich and showed no signs of air movement. We returned to the main drag and I spent a while ferreting around looking for the way into Rolan and Leigh's extension. I didn't find the way, possibly not climbing up high enough?

On the day there was a very strong and cold inflowing breeze (a cold front had gone through; with the air pressure rising the cave was sucking in cold air) in passages on the entrance side of the undescended 10p, but there was no detectable air movement beyond the 10p. It seemed that most of the air was actually going down the 10p. Anyway, it was time to go, or we guessed that it probably was, but none of us had a watch that day, so we headed out, leaving the cave rigged for a proposed mid-week house-husbands trip; we were keen to locate where all that air was actually going. Hans and I headed back the way we came, Hugh and Liz headed out the Nematode Crawl. Back on the surface we were surprised when the GPS told us that it was 9:20 p.m. Some vocal communications brought Hugh and Liz over to us and we then managed to lose the tapes, but followed the GPS (over many, many bothersome logs) and made a direct hit on the car. The GPS unit works wonderfully well under the forest canopy in the Junee-Florentine, a bonus.

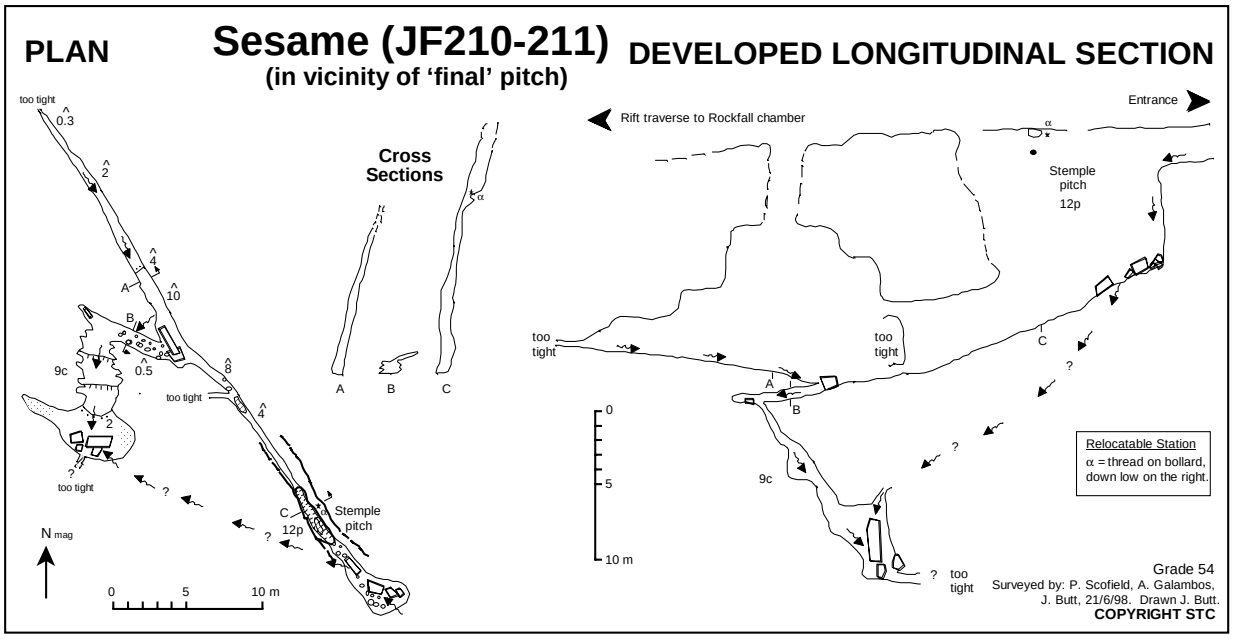
The return trip happened on 21/6. Andreas, Paul and I found the Sesame 1 entrance and soon found ourselves in the Nematode crawl and in the area below the 4th pitch. The crawl was remarkably pleasant, arguably a lot easier than the vertical route, except when accompanied by a heavy pack that is! There was little air movement in the cave on the day, this made draught chasing somewhat difficult. Anyway, we soon

made the unrigged 'final' 10 metre pitch. The stemple I had made up (a 67 cm length of 7 cm diameter treated pine pole, equipped with a sling and with chamferred ends) fitted like a glove, and when backed up to the dubious bollard allowed a safe descent of the 12 m pitch. We had a thorough look in this rift, a stream inflows from both ends and then in the middle heads down a crawl-way behind a boulder. This passage leads to a 9 m down climb to a small chamber, and 3 m down a slot in the talus (under another small waterfall) leads to a small streamway (heading at 190° magnetic). Attempts to get into this streamway were unsuccessful; feeling with the feet indicates there's simply not enough room there. Since we had survey gear, and knew that Trevor, John et al, didn't re-survey this area with decided to do so, and surveyed the whole lower rift (75 m of passage, depth of 30.8 m) back to the thread on the dubious bollard at the top of the pitch. A red tape was left on this thread. A copy of this survey is shown below. It is possible that the lower streamway is the same streamway that Rolan and Leigh got into, but they were further downstream.

We removed the stemple and derigged the cave, ending up on the surface in the rain with a heavy pack of gear each. The weather in Hobart was appalling all day, but for us on this shortest day of the year it was a very pleasant day underground.

Rolan and Leigh's extension (and the Mammoth Mud passage) still remain to be surveyed; a good summer job.

Jeff Butt



Experimenting with the new GPS at Ida Bay: July'98

Party: Jeff Butt, Robyn Claire and Arthur Clarke

On the first weekend in July (Saturday 4th and Sunday 5th), the club's new Garmin 12XL GPS unit and its antenna came down south for a trial run in the Ida Bay bush and forest. Jeff chose to do it the hard way, and rode down to Francistown from Hobart on his pushbike on the Friday, a mere 85 km: just to get a bit of exercise.... and guess what, five hours later, he arrived before I did!!

Saturday, July 4th: Jeff and I had a relatively early 0920 a.m. start and tried out the new GPS unit, with antenna attached to car roof as we drove down to the Mystery Creek Cave carpark at Ida Bay. The precision that the instrument gives you in terms of travel speed is quite amazing and so we discovered another potential use for GPS units: they can be used to check your car's speedometer gauge, if ever you doubt its accuracy! From the car park, we established our first waypoint at the Walkers/Cavers registration booth, then walked along the old Ida Bay tramway route to Blayneys Quarry, stopping to take readings (creating waypoints) at locations where I had previously established survey reference points and benchmarks for, during the course of the series of overland surface traverses (with tape, Miners Dial and Suuntos) conducted during late 1985 and January 1986 in order to locate and plot the position of many Ida Bay caves. We tried to achieve at least two readings at every waypoint site, setting the instrument to 'average' for a period of five (5) minutes or more, (but because of the 'noise' interference signal transmitted, a more reliable grid reference figure would be achieved it we could have left the instrument averaging for about 3 hours).

One of the aims of the day was to locate Hobbit Hole (IB-015) which had not been previously surveyed to, plus to check out the readings for other known cave sites with established AMG points (including Revelation Cave etc.) in the area west of the old (Blayneys) Quarry. We established waypoints in Blayneys Quarry at two of the Benchmark sites, where we were able to obtain readings from seven or eight satellites giving a low FOM ('Figure of Merit') reading down around 11.0. From here we first went east into the thicker bush at Survey Peg 'G' at the start of the Midnight Hole track where our FOM jumped up around 26.6 to 27.2. We then went west from the old quarry to Con Cave (IB-022) and around to Bottleneck (IB-048) where we were surrounded by tall Sassafras and Eucalyptus trees and while we maintained some partial satellite reception (in between the 'beeping' which indicated we lost the signal), the FOM was up around 28.8. Our aim was to then climb the karst ridge behind IB-48 and descend down to Hooks Hole (IB-028) before heading up to Hobbit Hole..... but we became distracted by finding two new features: an impressive karst rift and a new vertical cave! Eventually we located Hooks Hole, located in the lee of limestone cliff, so not unexpectedly our FOM reading was quite high: around 26.0. Back-tracking to the main 'Quarry-West' access track, we continued onto Hobbit Hole, via an untraced swallet in amongst dolerite boulders, that probably drains to Exit Cave. At Hobbit Hole the bush was thick and the trees were quite tall and massive, so we had problems receiving satellite signals and establishing a satisfactory waypoints, but we eventually succeeded by moving the instrument a measured distance away from the cave entrance.

Here we outsmarted ourselves: we tried to take a short cut over the ridges to Revelation Cave (IB-001) and Yodellers Pot (IB-025), but headed downhill too soon and ended up in the dry gully of dolines below Hooks Hole.....but found another apparently untagged vertical cave entrance which we number-tagged IB-163, though Arthur thought it looked remarkably similar to IB-041. We then tried unsuccessfully to locate the S&R track from Revelation Cave and ended up at another impressive karst feature: IB-126. While looking for a site to get another satellite reading, in fading light between the trees and limestone cliffs, Jeff spied a likely spot for a cave entrance which Arthur soon confirmed with booming success as small rocks and cobbles bounced down into a series of large (?) echoing chambers below.... Jeff managed to get a good reading here with the FOM at 16.0; and so endeth another day in the Ida Bay bush!

Sunday, July 5th: I had commuted to work from Dover for a Midnight Shift on the wharf on Saturday night after our GPS day in the bush, so Sunday morning was a later morning start for me. Dave Rasch had come down from Hobart on Sunday morning and he and Jeff set off early around 0910 a.m. to go to Midnight Hole to have a crack at abseiling and prussiking it using the cord technique. [Details will come in a forthcoming trip report. ED]

Leaving Francistown around 1330 (EST), Robyn Claire and I went back to Ida Bay with the GPS unit to repeat some of Saturdayís readings and attempt to relocate the S&R track from Revelation Cave. Leaving the main 'Quarry-West' track just past Con Cave, before Survey Peg 'D', we started taping a track towards Revelation Cave with alternating red and blue track-marking tape. Robyn became a bit distracted by some of the exciting looking lichens and bryophytes along the way, so the track-marking tapes started going up less frequently! We didn't find Revelation Cave, but just on dusk we did find yet another new impressive collapse swallet, just below a large doline and a line of trees marked with very ancient orange ribbon (another old track?). Most of our satellite readings were better than the day before, with our FOM's averaging around 12.0 to 17.0, perhaps because we seemed to be picking up more satellites, or perhaps because we were in more open bush, except for the thick bush near the swallet where we finished establishing waypoints and the FOM went up to 21.2. Our exit out was quite slow and interesting with marking tapes hard to find and blue tapes tending not to be as easy to see with caving headlights.

Eventually, when back at Dover, we discovered that in two day's use at Ida Bay, we had used up 98% of the GPS memory: 1006 of a possible maximum of 1024 waypoints!!

Summary of experience with GPS at Ida Bay: Compared to the AMG readings obtained from overland surveys, the GPS readings were quite variable. In some cases, the 'eastings' for waypoint readings were 30-70 metres different, but the 'northings' were almost spot on and vice versa. In those instances where more than two readings were taken at a particular waypoint, at least one of these was substantially closer to surveyed point, but if all the waypoint readings for that site were averaged, the GPS readings could be as much as 50-60 metres different to the surveyed points.

Its a pretty smart piece of 'user-friendly' technical equipment, that you can use like a mini-computer. The GPS unit gives you all sorts of warning beeps if there's a problem: lack of satellite reception, shortage of power or not enough memory to store more information. On the whole, I was very impressed by the sensitivity of the instrument and its ability to collect satellite signals in most parts of the Ida Bay forest. However, the 'picking-up' of satellite signals seemed to be very much a matter of chance, depending on the time of day and the position of the polar orbiting satellites in relation to the unit and their respective angle of location above the horizon, especially when you have hills or ridges on at least one or both sides of your traverse route. Generally, signals could be received better in more open areas on ridge tops or flat-lying sites, so you became instantly disadvantaged if you

were in a doline, a narrow gully or near limestone cliffs. Obviously tree density, tree height and thickness (diameter) of individual trees, plus canopy density as well - all have a bearing on the ability of the unit to collect satellite signal data. Jeff has also made the comment that its likely that reception of satellites will be worse when there is more moisture or wetness in the tree canopy.

The other obvious comment relates to accuracy of the position data. It obviously depends on what you want the data for: placing locations on a map with reasonable accuracy or having a rough field reference guide to locate caves or karst features to the nearest 50-100 metres from true position. The lower FOM (Figure of Merit) reading is really only telling you that you are receiving a reasonable number of satellite signals, but does not necessarily mean your readings will be any more accurate. Given that there will normally be a noise disturbance that prevents the GPS receiver getting an accurate location fix, the GPS unit will be most useful (whenever the interference 'noise' is turned off by the U.S. military or) when the receiver can be left on, averaging for a longer period of time, provided that it can continue to receive a satisfactory number of satellite fixes during that period. In the case where you already have known surveyed reference points (from accurate overland surveys or cave surveys), these can be fed into the unit so that the GPS user can expect to be directed somewhere fairly close, possibly within 50-60 metres of the given (known) location.

Arthur Clarke

Articles

Safety assessment of the STC Ropes.

When STC formed, approximately 2 km of caving rope (about 1 km from each of TCC and SCS) was amassed in the Equipment store. Most of the SCS ropes were labeled with the year of purchase and the length. Some of the TCC ropes were labeled with the length, but very few were labeled with any date. **In the past inadequate records have been kept about when ropes were purchased and put into service, their construction material (e.g. polyamide/nylon or polyester/terylene) and their histories (e.g. ropes donated by visiting overseas cavers). As a result there have been ropes in the gear store that have been sub-standard and dangerous (e.g. fail on a single 80 kg factor 1 fall).**

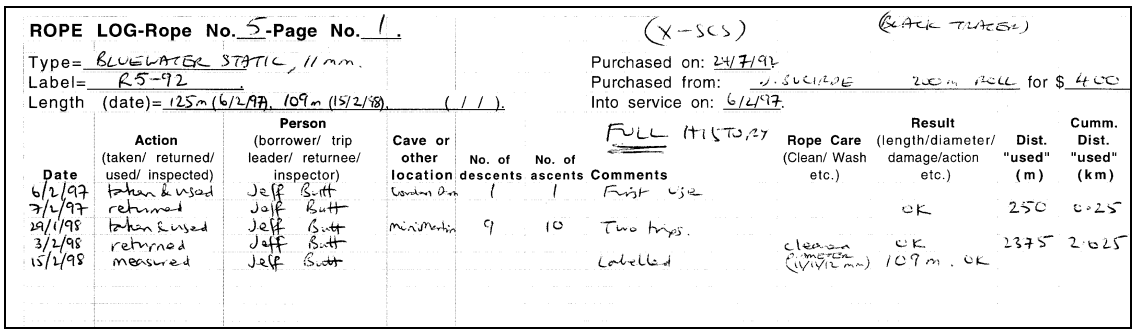
Throughout February and early March I conducted a safety audit of all the club ropes. This process involved;

- procuring all club ropes (several trips just to de-rig installed ropes were made),
- washing any unwashed ropes,
- inspecting the entire length of all ropes visually and by feel. Where any damage (including discoloration) was found or suspected, the ropes were cut. Some long sections were removed from a couple of ropes. Several suspicious (e.g. Czech donations), older and very stiff Bluewater ropes were also put in the rubbish pile. A couple of furry ropes (i.e. many sheath fibres cut) were likewise discarded.
    - According to Elliot (1986), *"A far more precise indication of a rope's condition is gained by subjecting a short section of it to a destructive drop test."* It was deemed wise to adopt this procedure as the history and age of many of the ropes was not documented or well known. So, a 2.5 m sample was removed from the end (or if the rope was being cut at a damage point, then the sample was taken from adjacent to this point) of most ropes older than 4 years for destructive testing. A small portion of the sample was dissected to locate any tracer thread or labeling (most ropes made after the mid 1980's have a colour coded tracer thread and/or identification strip within the core) that was present within and to look at the construction of the core. All of these provide clues to the year of manufacture and allow any associations between various bits of rope (i.e. pieces that originated from the same parent length) to be made. The dissection also allowed an assessment to be made of how much mud had ingressed into the core. Generally the more mud within the core, the stiffer the rope.
    - each rope was allocated a number and labeled via a label covered with transparent heat-shrink tubing. The label appears as below:

STC **Rn-YY** **XX m**

"STC" indicating STC ownership
"Rn-YY' indicating the Rope number "**n**". Any rope shorter than 10 m is designated "**SH**" for a "**sh**ort".
"**YY**" is the last two digits of the year of purchase; if this is not known a "?" appears.
"XX" indicating the length of the rope in meters.

- the 2.5 meter sample was subject to destructive testing (Fall Factor 1 falls with an 80 kg weight; more details below) to ascertain if it was safe (able to withstand at least two consecutive falls). Several ropes were found to be inadequate and were added to the rubbish pile.
- the remaining ropes are now racked in our new portable and modular rack. A log sheet (see example below) for each rope is kept in a folder. When returning ropes to the store club members will be asked for an indication of how much use each rope received and if any damage (e.g. abrasion points, shock loading, contamination etc.) occurred to the rope.



ROPE LOG-Rope No. 5 -Page No. 1.

Type= BLUEWATER STATIC, 11 mm.
Label= R5-92
Length (date)= 125m (6/2/98), 109m (15/2/98), (/ /).

(X-SCS) (BLACK TRACER)
Purchased on: 24/7/97
Purchased from: W. SOUTHSIDE 200m 12mm for $ 400
Into service on: 6/2/97.

FULL HISTORY

Date	Action (taken/ returned/ used/ inspected)	Person (borrower/ trip leader/ returnee/ inspector)	Cave or other location	No. of descents	No. of ascents	Comments	Rope Care (Clean/ Wash etc.)	Result (length/diameter/ damage/action etc.)	Dist. "used" (m)	Cumm. Dist. "used" (km)
6/2/97	taken & used	Jeff Butt	London Rd	1	1	First use				
7/2/97	returned	Jeff Butt						OK	250	0.25
29/1/98	taken & used	Jeff Butt	Mammoth	9	10	Two trips.				
3/2/98	returned	Jeff Butt					clean	OK	2375	2.625
15/2/98	measured	Jeff Butt				Labelled	Immersed (WWI2 mm)	109m. OK		

Drop Testing Ropes

In the literature, various statements are made about Drop Testing, these include:

- Warild (1988), *"Ideally , 2 m off the end of any rope over five years old should be shock tested with a FF1 test every two years and should survive **at least** one FF1 fall."*
- Elliot (1986), *"A drop test rig is used to apply two consecutive shock-loads resulting from a factor-1 fall with an 80 kg mass. If a rope can withstand this, it is considered adequate." ... "Should the rope support only one shock and break on the second one, then the test must be repeated with a further sample from the same rope. If it again supports a single shock then the rope is adequate, but should be tested again before too long" ... "It is recommended that ropes are tested routinely after three year's of regular use and annually thereafter."*

All agree that any safe caving rope must be able to withstand at least one (preferably at least two) fall factor 1 (FF1) fall with an 80 kg mass. [The fall factor is the ratio of the length of the fall to the length of the rope involved. 80 kg is a typical mass for a kitted caver. With good rigging the maximum fall factor likely to be experienced is around 0.3, however, sometimes rigging can be sub-standard and simple mistakes are made (e.g. two horizontal bolts are rigged with a stand-in loop between them, but otherwise are not connected, if the loaded bolt fails as a caver is approaching it, a FF1 is achieved, see Warild (1988), page 43) and so one has to err on the side of caution in respect of rope-strengths.] The literature also says that ropes should be regularly assessed in this manner when they reach 5 years of age, or after 3 years of regular use. Most of the STC ropes fall into this category! Also, ropes are generally weaker when wet than dry; this effect being more significant for newer ropes than older ropes. Putting this all together, the following procedure was used for the Drop testing:

- the 2.5 m sample was soaked in water overnight,
- a figure eight knot was made in each end (a figure 9 is a stronger knot and should be used when rigging, but often figure 8's are used underground and so this was chosen as the knot to use in the test),
- one end was attached to strong point (an 8 mm steel maillon attached to a wire trace on a convenient tree,
- a counterbalance haul was used to lift the 80 kg weight (three 0.7 m pieces of railway line bolted together) so that it could be clipped to a maillon in the other end of the rope,
- the weight was slowly let down, which tightened the knots,
- the length of the weighted rope was measured,
- then the weight was hauled up until the end attached to the weight was slightly higher than the end attached to the strong-point. A cowstail was then clipped for safety before gently transferring the weight onto a stringette,
- once I was off the rope and behind the tree the hauling rope was disconnected, then the cowstail removed and a knife touched to cut the stringette and send the 80 kg mass on its way down,
- if the rope did not break, its new length was measured and then the process was repeated. Typically it would take 5 minutes for a cycle to be done.
- For some ropes this process was repeated many times, for others due to the laborious nature, it was repeated only a few times and the intact rope cut so that the next piece could be tested.

A summary of results

The results of the tests are shown in the table on the following page. A summary of the main features from these are:

- 171 drops were made using 36 samples of rope.
- The 36 samples included 3 pieces of 9 mm Dynamic (as used for cowstails), 15 pieces of 9 mm Static, and 18 samples of 10-11 mm Static rope.
- 24 sample pieces of rope were broken during a test.
- Ropes that failed, with the exception of one double rope cowstail, failed in one of the knots (13 failed in the Top Knot, 10 in the Bottom Knot). Knots in ropes severely weaken ropes, obviously there are benefits in using the strongest knots possible, i.e. use figure 9 knots (especially in thinner ropes) instead of figure 8 knots (According to Warild (1988) figure 9 knots have 70% of original rope strength, figure 8 knots have 55%).
- The fact that the double rope cowstail held 4 FF1 falls whereas a newer standard design cowstail only held 2 FF1 falls suggests that the double rope version has merit. Also, since this was the only sample piece that did not break in the knot it suggests that the single large bulky knot has a strength similar to that of the unknotted rope.
- Generally the first fall on any rope is less severe as there is some shock absorption as the knots tighten, on subsequent falls there is no such absorption mechanism. A rope that has been prussiked on will have quite tight knots.
- Only one sample (Donaghys 9 mm) broke on the first fall; an inadequate rope! This rope is a Polyester rope, which gives it extremely low stretch, and less resistance to shock loading. Polyester ropes are also known to loose strength much faster than Nylon (polyamide) ropes. All our other ropes are Nylon ropes.
- Eight other 9 mm Static rope samples broke on the second fall, all these ropes are also regarded as inadequate.
- Our 9 mm Beal of indeterminate age (we have 400 m of this rope, 200 m still on the roll) withstood 2 consecutive FF1 falls (when new it should survive 5). It has obviously degraded somewhat in storage. This rope is long overdue for going into service, and once there will need to be tested annually to ensure it stays adequate for use.
- All other thicker (10, 10.5, 11 mm) static ropes tested survived two falls, all are regarded as adequate.
- One 15 year old 11 mm Bluewater rope (1983 vintage) was still going strong after 10 falls.
- Fifteen falls was the most I subjected any rope to, and after this the old piece of Bluewater 11 mm rope was still intact and I was tired of hauling 80 kg up and so gave up. It seems that Old Bluewater 11 mm rope never seems to die, it just gets stiffer with age! However, one shouldn't be complacent, all ropes will eventually degrade to such an extent that they are unsafe. Our old 11 mm ropes still need to be checked annually.
- Generally the stiffer the rope, the more mud has ingressed the core of the rope and the weaker the rope. One sample of stiff Bluewater 11 mm rope was found to have all bundles of fibres in the outer core coloured brown, this rope broke on the sixth fall.
- As an incidental to testing the ropes, several old karabiners, maillons and traces have been tested. There are some interesting results. Firstly, the swages on 20 year old wire traces are sound. Initially I attached the weight to the rope via a 10 mm Big-D steel karabiner with a dubious locking mechanism on the gate. On about the third test, the screw on the gate slipped, the gate bounced open, the D straightened out somewhat and the rope bounced out sending the 80 kg west! One 8 mm steel maillon with a rusted thread (so the gate would slip) simply pulled straight on the first fall. So if you have any karabiners or maillons with dodgy thread then replace them as a matter of urgency. The $2 Zennit maillon brought from a local hardware store used to attach the sample rope to the trace around the tree is still intact after 171 falls and the gate still unscrews with finger pressure. However the maillon is no longer oval in shape, but has a pear shaped bottom.

It is interesting to examine the specifications from the manufacturers for new ropes and compare them with the results for our old ropes. Note that in Europe in 1996 a new standard (EN1891) for low stretch ropes has come into effect, this uses a standard weight of 100 kg and the way ropes are rated is done differently (by specifying the maximum allowable impact force). However after a bit of a search it was possible to find 80 kg FF1 data for some ropes, these are summarised in the table below. [The task of hauling 100 kg 3 m up a tree 170-odd times would be much more daunting!] One manufacturers also provides maximum storage and active use lifetimes as well; these are shown in the table as well.

Rope No.	Diam-eter (mm)	Brand/Type	Marked or known date	Tracer colour &/or date	No. FF1 falls held	Failure mechanism	Amount of brown colour evident in the core	% elon-gation in last held fall	Notes
n/a	9	Beal/Dynamic	~1990	yellow	4	3 cm from knot	none, but lots of dye	n/a	Old double rope cowstail
n/a	9	Beal/Dynamic	~1993		2	bottom knot	none, but lots of dye	33%	Old cowstail
n/a	9	Beal/Dynamic	~1996		5	top knot	none, but lots of dye	30%	Not so old cowstail
36/37	9	Beal/Low Stretch		none	2	bottom knot	hint in outer bundles	19%	Long time on the roll
15	9	Bluewater 2/Static	1986	none	3	top knot	some in outer bundles	11%	
14	9	Bluewater 2/Static	1990	none	3	bottom knot	hint in outer bundles	17%	
44	9	Bluewater 2+/Static		green 1993	1	top knot	hint in outer bundles	16%	Worn sheath, a piece from SB
17	9	Donaghys/Abseiling		pink	1	bottom knot	none	14%	Polyester rope
17	9	Donaghys/Abseiling		pink	1	bottom knot	hint only	15%	Polyester rope
SH	9	Donaghys/Abseiling		pink	0	top knot	hint only	n/a	Polyester rope
12	9	Edelrid/Superstatic	1988	red 1987	3	bottom knot	none	18%	
31	9	Edelrid/Superstatic		black 1995	4	top knot	none	19%	
29	9	Edelrid/Superstatic		none	1	top knot	some throughout	16%	Looks old and tired
29	9	Edelrid/Superstatic		none	1	top knot	some throughout	17%	Looks old and tired
41/SH	9	Edelrid/Superstatic	1988	red 1987	3	bottom knot	hint in outer bundles	21%	
45	9	Edelrid/Superstatic		none	1	top knot	hint in outer bundles	17%	Looks old and tired
18	9	PMI		1984	1	bottom knot	some throughout	13%	Untrusted rope
SH	9	PMI		1984	1	top knot	hint in outer bundles	13%	Untrusted rope
7	10	Bluewater 2/Static	1989	black	5	top knot	some in outer bundles	24%	
10	10	Bluewater 2/Static	1989	black	3	bottom knot	brown outer bundles	25%	
9	10	Bluewater 2/Static	1989	black	>5	n/a	brown outer bundles	27%	
38/39	10.5	Edelrid/Superstatic		black 1995	>10	n/a	none	27%	
SH	11	n/a		none	3	bottom knot	some in outer bundles	25%	A piece from NH
49/50	11	Edelrid/Softstatic		purple 1994?	2	top knot	hint in outer bundles	26%	Old gym rope JHS
21	11	Bluewater 2/Static		orange	>15	n/a	none	25%	
19	11	Bluewater 2/Static	1983	black	>10	n/a	hint in outer bundles	27%	
25	11	Bluewater 2/Static	1986	none	5	bottom knot	brown outer bundles	25%	
24	11	Bluewater 2/Static	1985	none	>5	n/a	hint in outer bundles	24%	
28	11	Bluewater 2/Static		none	>5	n/a	brown outer bundles	24%	
20	11	Bluewater 2/Static		none	>3	n/a	some in outer bundles	25%	
32	11	Bluewater 2/Static		none	>3	n/a	brown outer bundles	22%	
23	11	Bluewater 2+/Static		purple 1992	>5	n/a	none	24%	
n/a	11	Czech 'blue fleck'		none	>3	n/a		15%	
n/a	11	Czech 'pink fleck'		red/white/blue	>3	n/a		15%	
48	11	Edelrid/Superstatic		purple 1994?	>7	n/a	hint in outer bundles	23%	
n/a	11	Edelrid/Superstatic	<1984	green 1982	6	bottom knot	some in outer bundles	27%	An old piece

Results from Drop Testing Ropes with 80 kg Fall Factor 1, Feb.-Mar. 1998.

Manufacturers Specifications: Number of 80 kg FF1 falls held.				
Diameter Rope type	9 mm	10 mm	11 mm	Information Source
Beal/Low stretch	5	5 (100 kg)	13 (100 kg)	Beal-Internet page
Bluewater 2/Static			~7 ???	Spelean-email
Bluewater 2+/Static	4+		17	Spelean-email
Edelrid/Softstatic	7	9	9	Edelrid'95 Catalogue
Edelrid/Superstatic	4	7	18	Edelrid'95 Catalogue

Manufacturers Specifications: Longevity of Static rope.			
Edelrid	approx. 6 years	with occasional use and no signs of wear	Edelrid Catalogue
Edelrid	10 years max.	no use and optimal storage conditions	Edelrid Catalogue

Using the lifetime guide for Edelrid ropes would suggest that three-quarters of our ropes have lived their life (i.e. more than 6 years old) and should be disposed of. From the test results obtained I don't believe that age 6 is the end of a ropes useful life, but is more of a 'cover your arse' statement by the manufacturers. Of course, one should also consider that perhaps the samples of rope tested were not necessarily representative of the condition of the whole rope and that elsewhere the rope may be weaker. This is a valid concern and suggests that test pieces of rope should be taken from the most worn part of a rope, or that more than one test piece should be taken from any rope to be tested. [Elliot (1986) suggests this for any rope with a sample that only holds a single 80 kg FF1 fall.] Certainly, the older ropes (pre-1995) need to be regularly inspected and tested, as recommended by experienced cavers like Warild (1988) and Elliot (1986). **If for any reason this annual testing is not carried out, then of course these ropes should be retired, one must err on the side of safety. If we are going to continue to use ropes beyond the manufacturers recommendations then we need to have some sound evidence (e.g. Drop test results) to be able to make an informed decision.**

Certainly some of the more experienced members vehemently disagree with the idea that once a rope is 6 (or even 10) years old that it should be scrapped. The data collected by my testing lends support for this idea. I welcome any input from club members who regularly trust their life to these ropes, as I do myself. Comments from anyone else who is reading this article are also very welcome.

For a small club we have rather a lot of 'adequate' rope (a total length of 1530 m, as per the list published in Speleo-Spiel #307) with a high average age. I would like to see the amount of rope decrease in both total length and average age, to something like 1000 m total with at least half under 5 years of age. Ideally it would be good to retire rope because it is worn-out from use, rather than from being under-used and decaying from old-age. Again, I welcome comments from club members about this idea.

By the way, Steve Bunton is currently doing a survey of Static Ropes for Wild Magazine, watch out for this, it should contain a lot of good information.

References: Dave Elliot (1986) "Single Rope Techniques"
Warild (1988) "Vertical"

Jeff Butt (STC Equipment Officer)

Taking A Shot in the Dark

In the mid-1950's, two or three years after I first got involved in caverneering, I developed a taste for cave photography in common with many of my contemporary fellow cavers in TCC. On one occasion we were taking photographs in Newdegate Cave at Hastings using a powerful electronic flash, a relatively new invention in those days, available because one of our members, Frank Brown, had become a professional photographer. All lights were extinguished before the flash was fired. To avoid being blinded we also closed our eyes. Immediately after the flash had gone off we opened them and found the whole cave bathed in a weird light that was being emitted by the formation and that lasted for about ten seconds. The same phenomenon was also being observed by cave photographers in other parts of the world and became known as the "afterglow" phenomenon.

This phenomenon is known to science as "luminescence". It was already well known to geologists that, when some minerals are irradiated with shortwave radiation, especially ultra-violet, some of the energy is released

in the form of visible light. Most of us will at one time or other have visited the geology section of a museum or a mining museum. They usually contain a dark room with a UV light source that is switched on at the touch of a button exposing a collection of minerals that have been selected for their fluorescent properties so that they glow in a range of different colours. In most cases the light is emitted from the samples immediately and the effect stops as soon as the UV light source has been switched off (fluorescence). In a few cases it may continue for minutes or hours after irradiation of the specimen has ceased (phosphorescence). What we had observed at Hastings was phosphorescence. It is possible to take photographs of cave formations that are strongly fluorescent by opening the camera shutter a very short time (0.01 seconds) after the flash has gone off but you would have to use a very powerful flash that generates a lot of UV light, the largest possible aperture and a very fast film.

The technique of taking colour slides of phosphorescent cave minerals was developed by a Bulgarian speleologist called Shopov who published a set of instructions in 1988 in "Kilment Ohridsky" Expedition Annual of the University of Sofia. While this was published in English (sort of) it is not easy to make sense of everything so I present it here without any changes: [but the Spell checker made some. Ed.]

Instruction for Preparation of Colour Slides of Phosphorescence of Cave Minerals

I. Reflex camera with "M" or "FP" synchronizer for magnesium flash and curtain shutter is necessary to obtain slides of phosphorescence of cave minerals. Modern cameras have not such synchronizer and need additional shutter delayer with delay of 0.003 to 0.01 sec.

II. Electron flash(es) with leading number higher than 25 are necessary for the excitation of phosphorescence. The power of flashes has to be as high as possible. Several synchronized flashes can be used to increase light emission

III. Colour slide daylight films with a speed as high as possible is necessary for this. Best films are six emulsion slides of KODAK, FUJI, or AGFA with speed 400 - 1000 ISO.

How to take the Slides of Phosphorescence

1. Put the camera on a tripod.
2. Make usual photo of the sample, so that it fill in frame. Macrophoto with small exchange is preferable.
3. Put shutter rate in "B".
4. Connect flashes with synchronization jack "M" ("FP").
5. Put flash(es) as close as possible to the speleothem, but so that it will be fully lighted.
6. Set the lens stop to the most open position and bring the mean part of the image into focus.
7. Switch all the light off.
8. Make a control burst at closed eyes and after that quickly open eyes. Correct position of flashes if it is necessary for obtaining higher phosphorescence.
9. Exposure until full extinction of light emission at fully opened lens stop and at lens stop 4 and 8.
10. Develop film in big photo laboratory with automatic machine development in big volume of developer.
11. Cut out 4 cm of black not-exposured end of the film and one good exposured (numbered for each sample) slide of phosphorescence
12. (over-exposured slides is not useful for spectral processing) and one usual slide of each photographed sample.

There you have it! You can probably disregard instruction 11 unless you want to send your slides to Dr Shopov in Bulgaria but the address he gives is now ten years old.

Does anyone want to have a go? After all it is a novel way of taking photographs in the dark and we know that, at least in Titania's Palace, Newdegate Cave, there are strongly phosphorescent formations.

Shopov made a reputation for himself by using a method of microscopically scanning cross-sections of flowstones and stalagmites and making the discovery that many of them contain annual phosphorescent bands that are due to the presence of organic acids derived from the annual cycle of decay of vegetation matter on the surface and in the soil overlying the cave giving rise to blue-green phosphorescence. Shopov used a nitrogen laser emitting only UV light to illuminate polished sections and then used a microscope with a photographic attachment to photograph the bands. The pattern of the bands can provide a lot of interesting data. Because they vary in intensity from one year to the next they give us information about the weather cycles that control the growth and decay of vegetation. Many of Shopov's specimens clearly reflect the 11 to 12 year sunspot cycle. The bands also make it possible to measure the amount of growth in a single year and to determine how the rate of growth varied from one year to the next. Finally, if an actively growing stalagmite has been collected on a known date it is possible to determine the exact year in which each layer grew by counting back

layers from the top of the stalagmite or flowstone. If there is a climate station in the vicinity of the cave from where the specimen was collected it is possible to see how the variations in thickness of the annual layers are related to the climatic conditions at the surface above the site.

A microscope is not necessary for such work. At the University of Auckland a simple apparatus was developed using a plate camera and two UV lights mounted on a steel frame to successfully photograph longitudinal sections of stalagmites. The negatives are then scanned at close intervals to measure the variations in optical density due to luminescence.

This type of photography is very different from photographing luminescence in caves because it requires illuminating the object during the photographic process and not beforehand. It requires a strong source of UV light that has to filtered to illuminate the sample with only the wavelength that is needed to excite luminescence in the exposed specimen. This filter is known as an exciter filter. Since photographic emulsions are sensitive to UV light reflected by the specimen, a second filter (barrier filter) has to be placed in front of the camera lens to admit only visible light into the camera. Because the light intensity of luminescence is so low, once again high-speed daylight colour film is recommended. There can be problems determining the exposure times unless you have an automatic camera!

If anyone is interested in any of this, I have a detailed document that I received from Jol Desmarchelier a few years ago (author unknown) that goes into much detail about fluorescence photography. I will be happy to make it available. It is the kind of project that could be supported by the club's scientific account.

Albert Goede

STC WaReHoUsE SaLeS

New Stuff

- Eveready 6 Volt, 0.5 Amp Flange Mount Bulbs (#1417), Blister packs of 2 $2.40 each
- CAVE PACKS, 35 litre volume, made from Heavy duty PVC material, double bottom, reinforced seams, drain holes, large diameter eyelet's. Simple and sturdy. $60.00 each
- Aluminium Bars for Rappel Racks. $5.00 each

Tape

- Edelrid 25 mm tubular tape. Ideal for rigging, chest harnesses etc. (White) $2.00 per m
- 5 cm flat tape (ideal for harnesses, rigging, gear bags, belts etc.) (Blue or Red) $1.50 per m
- 2.5 cm flat tape (ideal for handlines, rigging, gear bags, etc.) (White) $0.80 per m

Safety

- 9 mm Beal dynamic rope (ideal for cows tails, safety loop) (Purple-GOING FAST!!!)$3.50 per m
- Space Blankets (don't be caught underground without one! $4.00 each

Lighting

- Duracell 4.5 Volt flatpack batteries. ALL SOLD!! IF YOU WANT ME TO GET MORE, THEN ASK.
- Metal light brackets (used and no fittings) for helmet $1.00 each
- Jets (21 litres/hr) for Petzl kaboom $5.00 each
- Miscellaneous second hand pieces for Oldham headpieces. Contact us for details.

Tow Ropes/trailer tie downs/yacht lines/bull tethers etc.

RETIRED CAVING ROPE, no longer safe enough to use for caving purposes (ADORNED WITH PAINT SO THAT YOU WONT BE TEMPTED!!), but more than adequate for many other purposes. Available in lengths up to 10 m. $1.00 per m, less for the stiffer stuff

If you need any of the above please contact Jeff Butt on (03) 62 238620 (H), or jeffbutt@netspace.net.au, or write to us: SOUTHERN TASMANIAN CAVERNEERS, P.O. BOX 416, SANDY BAY 7005. If you have any other suggestions of gear that the club should Bulk Buy, then let us know and we will see what can be done.

STOP PRESS: On 17/7/98 there was a potentially serious accident in Flick Mints Hole (JF371); a rebelay anchor failure resulted in Jeff Butt being hit by several sizeable fragments of rock whilst mid pitch at about -150 m Jeff's helmet and glasses were destroyed, but he was able to make his own way out of the cave. Jeff escaped with some severe bruising. A full incident report will be in the next Speil.