The Speleo Spiel

Newsletter of the

Southern Tasmanian Caverneers Incorporated

PO Box 416, Sandy Bay, Tas 7004

http://www.tased.edu.au/tasonline/scaving/

Issue No. 305, Nov-Dec 1997

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Editorial

"Oh no, not John again!" Perhaps I could go on and reuse / copy the last issue in entirety. Thank you Dean for a great job in adversity. How did you manage to coax so many people to put pen to paper. Perhaps you could give me some lessons.

The new Australian Caveresque layout looks so good I think we will leave it for an issue or two. Some suggestions for silly, humorous or even offensive footnotes would be useful.

Well the AGM has been and gone with little or no change to the status-quo. It seems that all the old dogs will be learning different tricks. Though I must note our illustrious new president had actually been caving the weekend before the AGM. Perhaps this is a sign of things to come.

Whilst on the subject of presidents I would like to offer my personal thanks to Arthur. I know he has received his fair share of flack, plenty of which came from myself. Regardles of that, I believe no one else could have done a better job of guiding / dragging us through the rebirthing process. Now that we are out and wailing at the cruel world I look forward with interest to see what sort of parenting Uncle Bob will impose.

On a different note I hear there are quite a few caving bod's heading our way this summer, so there should be plenty of trips on offer. More info should appear on the STC mail list as it comes to hand.

John Hawkins-Salt
Spiel Editor

Club Matters

Slide talks:

- Cocklebiddy Cave - then, now & the future. Stefan Eberhard 4th February
- Minimum Impact Caving Stefan Eberhard 4th March

Other news:

WASG IN TAS
WASG cavers will be in Tasmania from early February. These guys are keen and competent and I'm sure they'd be keen to meet up with STC people to do some quality caving. Contact Steve Wright & Beth Ph 08 9364 9131, Darren Brooks Ph 08 949 1274, Perry Raison Ph 08 9272 4965, Rauleigh Webb Ph 08 9356 5550(H), 041 9946 764(mobile)

JUNEE CAVE PUSH
South Australian cave divers Chris Brown, Tim Payne, and David Doulette will be in Tasmania 7th to 21st February. The main purpose of the trip is to push the second sump in Junee Cave. They will be bringing mixed gas diving technology with them because of the depths encountered in the second sump (44m +). Stefan Eberhard will be joining them. After the diving, Tim and his partner Pam are looking to do some 'dry' caving around Tas. If you're keen to join them between 18th-21st Feb. call 088 259 5724(W) or 088 344 3283(H).

Minutes of the 1987 AGM

STC AGM: 3rd December, 1997 Meeting opened 8:26pm

Present:
Sue Baker, Sarah Boyle, Stephen Bunton, Jeff Butt, Liz Canning, Arthur Clarke, Bob Cockerill, Leigh Douglas, Stefan Eberhard, Dave Elliot, Hugh Fitzgerald, Albert Goede, John Hawkins-Salt, Greg Middleton, Kelly Miller, Dean Morgan, Bill Nicholson, David Rasch, Di Sward, Peter Verwey, Trevor Wailes, Mick Williams.

Apologies:
Charlie Crofts, Jol Desmarchelier, Tess Fumo, Rae Glazik, Kent Henderson, Ian Houshold, Phil Jackson, Therese March, Andrew McNeill.

Previous AGM minutes (the inaugural minutes of the STC): Where are they? Problem of having four different Secretaries this year and no continuity of records of meeting minutes!

Business:
- Fees for 1998: Establishing a fee for the next 12 months Motion that the fees remain as they are: Proposed Bob Cockerill, seconded Jeff Butt. Motion carried.

- Motions proposed by John Hawkins-Salt (these appeared in the last Spiel): (a) Amendment 1 to the constitution: That the name of the club be changed to the 'Southern Tasmanian Caverneering Club'. Motion lapsed for lack of a seconder.

(b) Amendment 2: That a membership class 'Non-ASF member' be created, and fees shall be normal membership fee minus ASF capitation fee of $12 etc. Seconded: Kelly Miller. Albert noted that since we ARE members of ASF, this may be unconstitutional. Greg commented that the way to be a non-ASF member is NOT to be a member of STC. Talking from the chair, Arthur stated that ASF policy at present requires all members of any member club to be all in ASF or none at all (hence the problem relating to optional insurance). Kelly questioned the rights of STC members to be 'conscientious objectors'. Motion lost; not carried.

No other amendments seconded. All other motions lapsed.

Finances:
STC income to 30th September: $682 light hire (will be $1300); $108 membership fees.
Acting Treasurer stated that the books were in dis-array and not in a satisfactory state to get audited at present. Problem of incorporation and need to get books audited annually, therefore requirement that there be records and receipts for all monies received and invoices (or receipts) for expended monies etc. in order to get books audited when reimbursing members for their outlays: e.g., no records for two payments: Dean Morgan - $72.25 and John Salt - $124.98 Bob Cockerill moved motion that books be audited and tabled by March meeting. Seconded and carried.

Election of Office bearers in STC: All positions of office now declared vacant. Stefan Eberhard invited to take the chair to conduct nominations for office.

RESULTS:
Executive:
- President: Bob Cockerill
- Vice-President(s): John H-S, (non-caving/social VP) Stephen Bunton
- Secretary: Kelly Miller;
- Meeting Minute-taker: David Rasch;
- Treasurer: Arthur Clarke

Committee:
- Scientific Officer: Albert Goede

- Public Officer: Stephen Bunton
- S & R official: Jeff Butt
- Editor(s) of Speleo Spiel: John H-S
- Sub-Editor (and Proof Reader) of Speleo Spiel: Kelly Miller
- Karst index officer: Arthur Clarke
- Equipment Officer: Jeff Butt
- Archivist/Librarian: John H-S, Jeff Butt, Bob Cockerill
- Map Archivist: Trevor Wailes

Jeff Butt commented that an edition of Southern Caver not likely in near future, due to lack of contributions and lack of time on his part due to commitments to maintaining gear store and organising light hire. $90.00 in light hire revenue during this past week.
Business Meeting closed: 9:12pm

Equipment Officer's Report for STC's first year.

STC's first year is now over. For the equipment store it has been a mixed year. I had grand intentions of having it all organised and inventoried by the end of the year, but as I was away (Many thanks to Diane Sward for minding the equipment store whilst I was away!) for 8 months of the year this has not yet occurred. The lights have been maintained (they are in constant use, see below), but the STC SRT gear needs an overhaul (see recommendations below) and about half the ropes require measuring and labelling.

Most of the STC gear is accounted for, however due to a couple of incomplete records during my absence there is an imprecisely known amount of gear in a couple of caves in the Junee-Florentine and perhaps at several members homes. In the near future I will be contacting all members with unresolved gear returns. If you have any STC gear at your home, or were responsible for installing it in a cave but have not derigged it, then please either return it to the store, or provide me with a list of what you have, or what you know is still underground. Many thanks.

Managing the lamps is taking an increasing amount of time, I estimate that in November I spent about 40 hours repairing and testing lights. This is in addition to the time required for cleaning/charging/checking and packaging lights and helmets for clients. Annually I estimate that 120 hours of time is consumed managing and maintaining the lights. Light hire has earned STC something like $1300 (approximately 300 lamp-hires) over the last 12 months and I believe that there is a strong case for providing an honorarium for the Equipment Officer. A suggestion is that an honorarium could be based (e.g. $1 per member hire, $2 per non-member hire) on the number of paid lamp-hires per year; the amount of work required with the lamps is roughly in proportion to the number of lamp hires.

LAMPS

According to the Gear Loans book, over the last year (Dec'96-Nov'97) there have been 107 light hires to members and 198 to outside groups; a total of 305 light hires for STC's first year.

Currently there are 21 serviceable lamps, 11 Gel-cell and 10 Oldhams. In the last year two Oldhams (G and K) have been scrapped and five new Gel-cells were installed (most of the Gel-cells retired had been in service for 6-7 years).

Capacities (in terms of hours of operation on High Beam) of all lamps have been assessed (see Table below). Note that I only tested up to 7 hours, so you will see many ">" signs in this table. For a battery to remain in the pool is desirable for it to have at least 7 hours capacity, (when new, the capacity is about 14 hours). It is apparent that some lamps (J, L, 7, 11, 13) are approaching the marginal stage. For the Gel-cells a new battery costing about $21 will revitalise these lights. The Oldhams with low capacity are probably best converted to Gel-cell lights, as replacement Oldham batteries are about $130.

	4 Volt Oldham												6 Volt Gel Cell										
Lamp	A	B	C	D	E	F	G	H	I	J	K	L	1	4	5	6	7	8	9	10	11	12	13
Capacity* Jan'97 (hr)	>8	>8	>8	>8	>8	>8	4	>8	>8	6	>7	>7	>8	>8	>8	>8	>8	8	>8	>8	>8	>8	7
Capacity** Nov'97 (hr)	>7	>7	>7	>7	>7	>7	SC	>7	>7	6	SC	5	NB >7		NB >7	NB >7	>7	NB 6	>7	>7	>7	6	>7	6

*8 hour test **7 hour test NT=Not yet Tested SC=Scrapped NB=New Battery in '97.

The ancient 6-Volt charger has an intermittent fault, which has caused some problems over the last year. It also has one design problem in that all lights on charge are interconnected and that if there is one bad light connected some of the lights may not be charged properly. A charging unit with individual circuits for each clip (like the Oldham charger has) is desirable. Many of the charging clips are also very worn and it would make sense to get new clips when renewing the charger.

The Oldham charger works well, though one of the six circuits has fried components and needs some new parts.

There are also two Sewer-pipe lights and three spare battery/globe carriers. The lights are functional, but would benefit from replacing the connecting strips and beefing up the springs in the ends.

Several belts were lost during the year; I have made up a number of replacements. Replacement belts cost about $3 and 15 minutes of time.

Recommendations:

- New Gel-cells be purchased for installation in STC lights on an 'as needed' basis.
- All lights have their capacities measured twice a year; and any Gel-cell that does not last 6 hours be replaced and any Oldhams of less than 6 hours capacity be converted to Gel-cell lights.
- The 6 volt charger be replaced with a unit capable of charging 8 lights at once.
- Repeat belt/chin-strap losing offenders be asked to pay $5 per belt, $2 per chin strap for replacement.

HELMETS

There are 15 (one of these outstanding) serviceable Construction Workers Helmets which are only suitable for horizontal caving and 2 SRT suitable helmets. Chin straps from the Safety helmets are lost every now and then and we need some to replace them. Some sweat bands are in need of replacement as well.

With 21 lights and 16 helmets there are times when we run out of helmets. It would make sense to buy another SRT suitable helmet as we have the worn remains of three sets of SRT gear.

Recommendations:

- Ten new Safety helmets be purchased (by buying 10 at a time a significant discount is obtained and the helmet price is $14.70 each).
- Twenty chin-straps and ten sweat bands be purchased for replacements.
- One new SRT suitable helmet (e.g. Petzl or Edelrid) be purchased.

ROPES

There has been little use of rope over the last year (commensurate with the low levels of activity in STC at the moment).

Most ropes still require measuring and relabelling. Labels should include the date of purchase as well as the length (after shrinkage from new). The age of some of the ropes is indeterminate, also several "new" ropes have been in storage on the roll for over 3 years.

After cataloguing what we have, I would like to scrap any used rope that is older than 10 years (or of indeterminate age), too stiff or too furry. I would like to test some of this older rope with a drop test rig. Some of the new rope should then be gradually brought into service. There is a market for old rope, some yachties use it for mooring lines and are willing to pay $1/m.

Currently the ropes are stored in piles on the floor, which means that they take up a lot of room. It would be good to have a racking system which would allow better organisation and more efficient storage.

Recommendations:
- Remeasure and relabel all ropes.
- Retire all used ropes which are older than 10 years/of indeterminate age/too stiff/furry/or showing any other damage.
- Progressively bring some of new stored ropes into service.
- We should drop test some of the older ropes for the experience.
- Build a (wooden peg type) rope racking system.

GEAR BAGS

We have a small collection of gear bags, three close to new and some close to tatters. It would be useful to have about three more larger rope packs and three small SRT packs (each to hold a set of SRT gear). In the past it has been much more economical to get caving packs made up in batches of ten and to keep some for STC and sell off the others to members/others wishing to have a good economical caving pack.

Recommendations:
- Survey members to see how many are interested in procuring their own large (rope pack) or small (SRT gear pack) cave pack. If there is enough interest, then STC place an order for say 10 of each, sell those ordered to members and keep the remaining ones for STC use.

LADDERS AND TRACES

We have 8 (2 of these outstanding) serviceable ladders (1 by 50', 6 by 30', 1 by 20'). One of the 30' ladders of a club-made type and because of its great age and the potential for electrolytic corrosion should be retired. Our ladders are only occasionally used. We have a number of traces, most in good condition, though several are rather old.

Recommendations:
- Pension off the 'club-made' ladder and any traces of dubious nature.
- Affix a metal 'date-tag' to all ladders (and traces?), so that we accurately know their age.

SRT GEAR

Our motley collection of SRT gear is in need of an overhaul. We have about four sets of serviceable uppers. Most of the descenders are badly worn and in need of replacement. We have an assortment of old harnesses, karabiners and cowstails.

All this gear needs a thorough going over and most needs replacing. It would be good to have three sets of state of the art SRT gear; including adjustable SRT harnesses, adjustable foot-loops to cater for differing sizes of people (generally new/potential members) using it.

Recommendations:

- Purchase the necessary items to make up three state of the art sets of SRT gear. From my knowledge of what we have, this means we need 2 harnesses, 1 helmet, three descenders and assorted webbing/rope for chest harnesses/leg-loops.

BOLTING GEAR/POWER DRILL

The power drill has seen an amount of use and is definitely no longer new; it shows some signs of being left for lengthy periods underground. The hand-bolting gear has not been used during the year.

I believe that we should upgrade our bolting equipment so that we have the capability of installing state of the art 'glue-in' stainless steel bolts where bolts are required. Many of the steel spits in our caves are nearing the end of their lives and any rebolting or new bolting should be of a nature that is consistent with minimal impact and maximum longevity, i.e. long lasting stainless steel glue-in anchors. Typically these bolts cost around $30 each to install.

Recommendations:

- the power drill not be left underground longer than 9 days (i.e. in one weekend, out the next), and when left underground in the short term should be stored in as clean and dry as possible environment.
- we modernise our bolting technology so that we have the capability of installing stainless-steel glue-in anchors. We install some test bolts in heavily used places where existing spits are in need of replacement.

SURVEY GEAR

There are three complete sets of gear. The accuracy/calibrations of these instruments have not been assessed. If you plan to use them it would be worth your while to run a few checks on them first.

Today's GPS technology produces reasonably priced units that work well under heavy forest cover (e.g. Garmin 12XL, costing about $650). These units can collect valuable data if used with knowledge of the effects of Selective Availability and I think it would be a good idea to either have our own, or allocate some funds for rental of such devices for some surface work.

ROPE PROTECTORS

There is a large pile, half are the PVC type, the other half are constructed from old fire hose.

STC WAREHOUSE SALES

See the back of a Spiel for what we have and current prices. Note that the price of Carbide is now about $800 per 100 kg drum, if you can get it! We have about 5 kg left. Our last drum has taken about 8 years to use. If we are to buy another drum, then we will have to charge about $8.50 a kg to recover our money. At this price I doubt that many people will want to use carbide. For expedition use Sewer Pipe lights with dry-cell batteries offer a cheaper, lighter and arguable a less environmentally impacting alternative.

So that's the status of the Equipment Store. I hope that my recommendations are considered at a forthcoming meeting. Don't forget, if you have any STC gear at your home then please return in to the store. Also, if you installed any in a cave and have not yet returned it, then please provide me with an accurate list of what gear is where. Many thanks.

Jeff Butt.

Trip Reports

Untagged Cave at Breccia Ridge, 21/9/97

Party: *Paul Scofield and Sue Baker*

Our main aim for the day was to check out a hole Paul had found last time we were poking around the Settlement Road area. After attaching the ladder we'd brought to a couple of trees, we climbed down about ten metres to a small chamber with a likely looking lead heading off to either side. It turned out that neither of these went for more than about ten metres, and they actually linked together below and behind the chamber. I suspect in its 'active past' the cave might have gone further but is now thoroughly blocked with mud. Although we were disappointed at such an enticing looking hole not going anywhere, we were excited to find subfossil bones approx. 10-15 cm long embedded in the sediments. Unfortunately that probably makes them a bit small to be bones of megafauna (a number of megafaunal bones have been found in the Settlement area in the past.

To make the most of the day, we then decided to check out Beginners Luck Cave. We initially scrambled down the JF81 entrance, and very quickly found ourselves at the main entrance, JF79. We retraced our steps, and checked out the other side of JF81. Neither Paul nor I were in the mood for the climb it involved, so we decided to approach the passage from the other end. Womguano Passage, JF82, sure lived up to its name! I never realised that wombats could live so far (approx 100m) underground. We turned around at the rimpools, and decided that they made 200m of belly crawling with our noses 5cm above a wombat toilet worthwhile.

Sue Baker

Midnight Hole 3/12/97

Party: *Tom, Les, Jol, (Visitors) John H-S*
After almost being washed away in GS the day before I thought we should go somewhere drier. The visitors were most impressed with Midnight Hole and vowed to allocate more time to caving on there next visit.

On track to Victory'75 26/10/97

Party: *David Rasch, Bill Nicholson*

This trip was supposed to be to Wolf Hole to initiate a bunch of Venturers into the art of vertical (well, ladder...) caving. Having booked 12 lights the previous Wednesday, it became apparent after several phone calls and visits that our gear store person Jeff had gone away for the weekend, so no equipment would be forthcoming. It was 9am, and we quickly formulated Plan B which was to head in Bill's new old Subaru up to Maydena to try and relocate a few caves around the Chairman (JF-99). We didn't have a key to the Florentine, but nevertheless managed to gain access to the concession without difficulty.

First we went to have a peer at JF-259, a tiny hole near the edge of the road near the Junee quarry, then continued up to the quarry itself and checked out the view down towards the resurgence. There are some really impressive valleys and dolines here.

Then we started up the Rift/341/Chairman track, replacing old and missing track tapes, and collecting any old scraps of tapes that we found on the ground. About 150m past the 341 turnoff on the track to the Chairman (where the track passes a few small depressions, one about 6m deep), a red tape was seen around a tree about 30m off the track on the right. This proved to be a tiny hole about 3m deep with a lot of loose dirt apparently slipping towards a subhuman hole at the bottom.

Then we wandered along the Chairman track again until the track turns right, and headed down the hill following a small stream. This stream passes JF-125(?) then the water drops over a low cliff and sinks

into a 10m hole with lots of vegetative debris at the bottom (described in Spiel #203). We continued on down into a sizeable valley, then started climbing back up the hill to the left towards the Chairman. Can't help thinking that the track doesn't take a very efficient route here as far as getting to the Chairman goes. On the way back we saw a small tiger snake who was no doubt enjoying the warm weather.

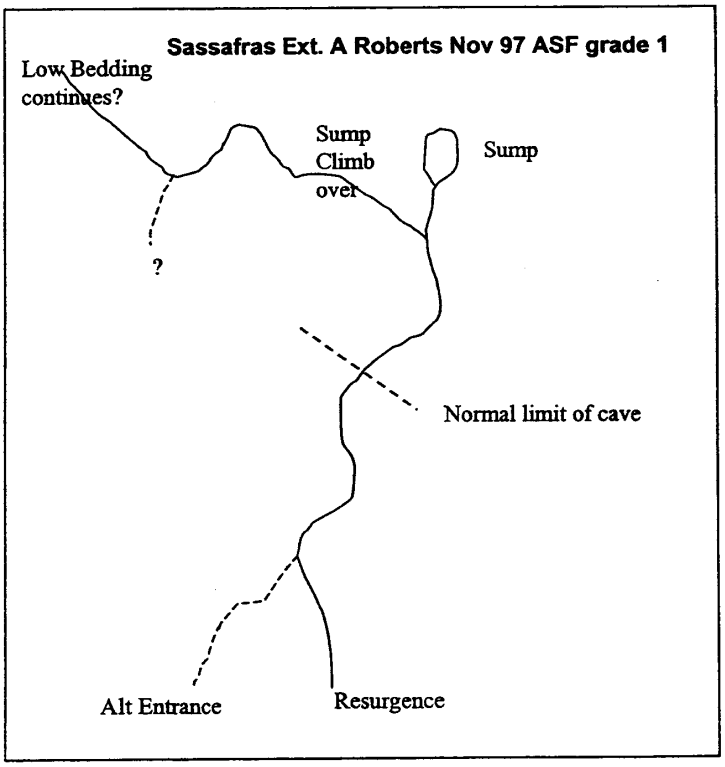
About 50m short of reaching the Chairman itself, there is a garland of tapes around a tree, marking a turnoff to the right. We followed this track, contouring for maybe 5 or 10 minutes when we spotted JF-121 about 15m down the hill on the right. It is a small, narrow rift at the base of a 2m-high cliff with no apparent draught. Then we kept going on the track another 10 minutes till we found an obvious turnoff on the right, which led us a further 5 minutes down the hill to Victory '75 (JF-110). From JF-110, the track continues approximately south, but unfortunately it has been flagged with blue "environmental" tape and is all but gone - we managed to re-flag three tapes before we lost the track.

There are probably people reading this who know all about the various tracks and holes in this region, but time has wearied them or they have moved elsewhere, forcing us to do lots of leg work to relocate things. Hopefully a return visit with a GPS unit will ensure this doesn't happen again.

Anyway, then we headed out of the concession to the Cockatoo Café for coffee and cake, then back to Hobart around 7:30pm.

Mole Creek in the big dry.

Party: *Andy Roberts & Students.*



I recently took a group of yr9 students on a 3 day caving trip to Mole Creek. No significant rain has fallen in the area for months. All the caves we visited had severely reduced water levels, places where there are usually sumps were completely dry allowing some extensions not normally possible. One such cave was Sassafras. In the past I have managed to wade up to chest deep at the normal end of the cave experiencing silt deposits under foot and evidence of phreatic tube development extending of into the sump. On this occasion it was possible to walk completely dry through this part of the cave and continue on about 30m to a branch, right led to a small muddy sump, left led via a climb up and through another sump(dry) and down again into a well decorated stream passage. This led on eventually into low bedding plane on dolerite cobbles which appeared to go on for some distance beyond where we stopped.
The stream passage beyond the sump described above would clearly be passable in normal water conditions, one wonders how far from the surface stream entry the bedding plane crawl reaches. Has anyone been here before? Have a survey? Our extension (no claim to new though) is approx 50-70m long and worth a visit. ASF Grade 1 survey attached.

On the way back up the dry valley to where the vehicle was parked I investigated the area where the Ck was sinking prematurely. The actual entry point to the Sassafras system was completely dry as was the resurgence. There are a number of promising holes overgrown with fern and blackberry, one with a 2m vertical slot with possible passage beyond. There is also a small overgrown gorge nearby - has this been investigated? All the water is now sinking in this area. Presumably cavers would not be aware of this hidden sink in normal flow conditions.

Can I claim the extension as a new find or is it just old cave forgotten about.?
Andy Roberts 62 679877

JF 341 Enterprise Stream 28/12/97

Party: *Dion Hutcheon, John Hawkins-Salt*
Well after slacking for the last couple of months we dusted the gear of and trogged up for another look at the Enterprise stream (see *SS302*) we spent 2 hours climbing everything we could between the downstream jcn and the first boulderpile heading upstream, to no avail. Although we haven't had any luck yet I'm still very interested in this area and will be back again some time.

Stuff

GPS'ing in the Florentine (10/11/97)

Party: *Dave Rasch, Jeff Butt*

This was a bit of a spur of the moment trip, we had two GPS units (both Garmin models) at out disposal, the weather was fine and we thought it a good idea to take them to the Florentine and put them to the test. We had only limited experience with portable GPS units and the software to download the data, so we considered this day just a bit of a rough test and we both realised we were at the slippery end of the learning curve (i.e. learn a lot in a short time, but generally the hard way!). We hoped that by having two units, we would be able to do our own differential corrections, (i.e. we would use the wanderings of one stationary receiver to correct the data collected by a mobile receiver). In order to be able to realistically assess the data we chose to do our tests in a region (the track into Rift Cave/341/The Chairman) where we had good quality old fashioned (compass, inclinometer and tape) surface survey data. This trip report gives a summary of our lessons of the day and the results of our tests.

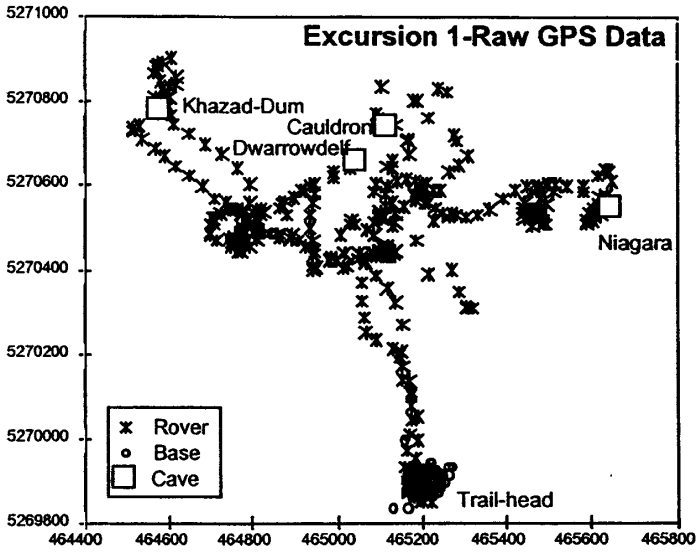
The units

Garmin GPS 12XL: A 12-channel parallel receiver. Good performance under heavy tree cover. 15 m accuracy, degraded to 100 m by Selective Availability. Released in Jan'97 and priced at around $650. Holds 1024 Track points and 500 Waypoints.

Garmin GPS 2: An 8-channel serial receiver. Holds 768 Track points and 50 Waypoints. Reduced performance under tree cover. 15 m accuracy, degraded to 100 m by Selective Availability. Released in Nov'96 and priced at around $250.

Excursion 1

At the carpark we turned both units on, and they soon had positions. Lesson 1: GPS units side by side don't necessarily give the same positions. (On 15/11/97 under ideal conditions in Hobart we tested the two GPS's side by side, most of the time they recorded positions under 5 m apart, but every now and then they would diverge, sometime to more than 40 m; which seemed to be related to the units choosing different groups of satellites for calculating positions. It became obvious to us that if you want to do any fancy post-processing of data, then you need to record information about which satellites are being used. Lesson 2: altitude data from GPS units is of low quality, an altimeter will do a better job.)



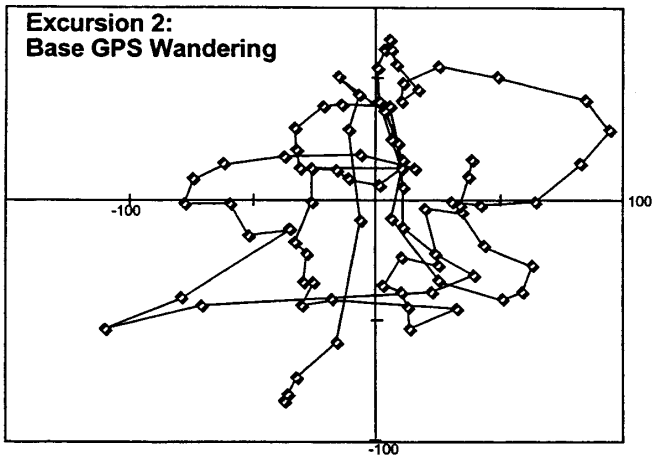
We thought it prudent to have a test run first, and decided to whip up along the Khazud-Dum track first, before going along the Chairman Track. We chose to use the GPS 2 as the 'BASE' (situated on the dash of the car) and took the GPS 12XL with us as the ROVER. Lesson 3: The GPS 2 was working fine all the way up in the car, and for the first 40 minutes after we left, then dropped out (presumably with a satellite constellation change) and only had sporadic coverage after that. If we had left the unit outside (where it would be largely unshielded by the metal of the car) performance would have been much better. We headed up to Khazad-Dum, then to Dwarrowdelf, Cauldron and Niagara before returning back to the car. Both units were set to log each 30 seconds, this being a rate which allowed us to log all day without losing any data; we desired to keep a copy of the data in the GPS units so that we could try different software packages back home. A notebook was used to record activities and waypoint data at various times.

Back at the car we downloaded the data onto a PC. Lesson 4: Software available on the Internet is often pretty unreliable. The first software we tried had lots of communications errors and the downloaded data contained many glitches. The second set "GARDOWN" appeared to work well. We were converting the positions to UTM coordinates (Grid 55U-the "55" tells us that the Universal Transverse Mercator Grid is centered on the 147°E meridian, the "U" indicates the latitude band is 40°S to 48°S) to match our Topographic Maps (which are based on the 1966 Australian Geodetic Datum). We discovered that the software has been written for the Northern Hemisphere and that all Northings for our region were 20,000,000 km out. It was easy to fix the output data once we recognised the error with the software.

The figure (left) shows the raw data, we did not attempt to differentially correct this data due to the low amount of data received by the Base. The Rover worked well in the forest (dry and sunny conditions) and it was only rare that we could not obtain a GPS position. From looking at the spread in the Rover path between outward and return journeys one can see that Selective Availability does limit an instantaneous position to something like the 100 m that is specified. By averaging over a period of something like 3 hours the accuracy can be improved significantly. The Base positions had a standard deviation of 39 m for the 71 observations recorded.

Excursion 2

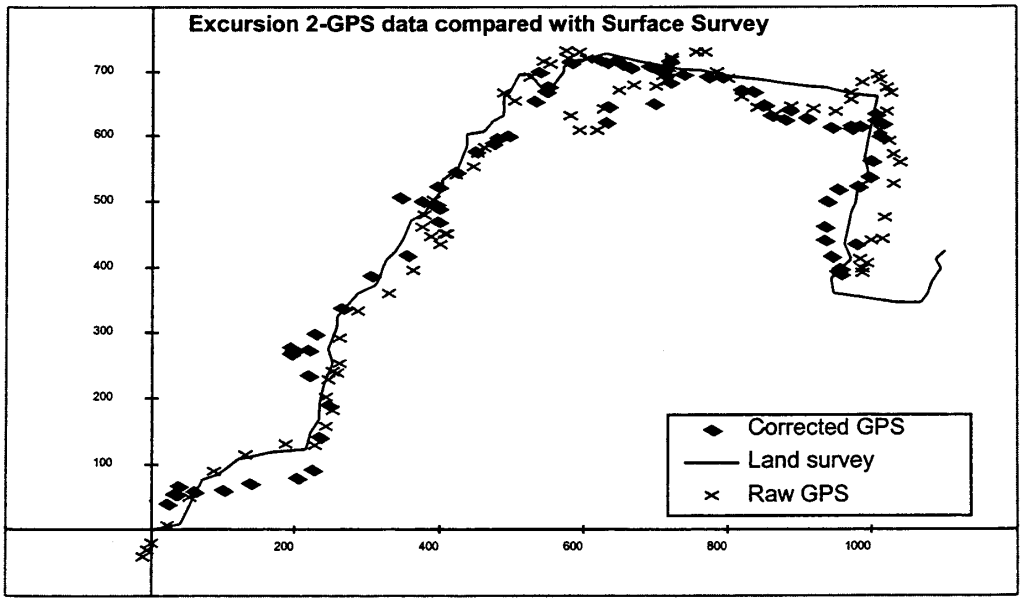
This time we left the Base out on the ground for improved performance and we set off for the Chairman. Lesson 5: Portable GPS units gobble up the batteries, the unattended Base ran for about an hour after we left it, then it shut itself down. (The Rover, with us benefited from a battery change.) Using an external battery would have been the way to go; we intended to do so, but Jeff forgot to bring the battery!! Fortunately we made it most of the way into the Chairman in this period, and so have some useful data to look at. (From our Hobart test on 15/11/97 we also learned that even though a GPS may run from 6 Volt internally they may require higher voltages from an external battery. The GPS 2 needs an external battery to be 9 Volts or higher, the GPS 12XL is quite happy with an external 6 Volt supply. We also discovered that if the batteries are running down (about 4.5 Volts) the GPS 2 still collects data, but is not able to download it.)



The graph (left) shows the wanderings of the Base GPS over the time that it was operating. The standard deviation of these positions is 56.6 m. This plot shows the effects of Selective Availability quite clearly and shows that a spot reading, or any reading averaged over a few minutes could easily be 100 m off the true position.

The following figure shows a comparison of GPS data and surface data collected with the aid of a compass/inclinometer and tape-measure. Note, that our route was along the surveyed route, so in an ideal world all the points in each plot would lie directly over the line in the same plot. Raw GPS data is shown as 'crosses' and GPS data that has been differentially corrected against the Base (data above) is shown as 'diamonds'. Without calculating any statistics about the two GPS derived curves it is difficult to say that the corrected data is much better than the raw data. There are regions where one data set is better than the other and there are times when the error is 100 m. At the very least it is heartening to see that the GPS data basically agrees with the surface data. By removing data collected when the Base station shows a large error it is possible to clean up the both GPS data sets and the results agree marginally better with the overland survey.

So, what's it all mean? Well, basically it seems that the easiest way to get accurate GPS position data is to have a unit that works well in the forest and then average data over time periods of order hours. Using a real-time differential GPS setup might work better, but then that relies on having more expensive equipment and being able to receive (which might be difficult in forested karsty terrain) broadcast Selective Availability errors. Anyway, it was a fun way to spend the day and interesting to get a handle on how accurate these units are.



JB & DR

Before deciding whether the club should purchase a GPS unit a further set of tests should be made using DGPS real time error correction. DGPS in Australia relies on the ability to receive JJJ as the correction is broadcast in the JJJ carrier. According to Tony Sprent (see notes on his lecture SS#303) using DGPS correction will reduce the error to 2m. I have received JJJ at both the 8road and KD car parks so the next step would be to take an FM receiver for a wander around the tracks. If JJJ reception is reasonable the we should try and borrow a DGPS receiver for a similar set of tests.

ED

TOLC Courses for 1998

In 1998, the Tasmanian Outdoor Leadership Council will be offering the following courses. All Southern Tasmanian Courses are to be held at the Upper Lea Scout Camp. If you want any more information on the quality of these courses, then just ask Dean Morgan, Kelly Miller, Jeff Butt, Leigh Douglas, Dave Nichols or any other members who have completed one or more courses. Bookings will be made available through the Adult Education Supplement coming out on 31st January, 1998 – Saturday's Mercury Newspapaer. Or, if you want more info, call the Tasmanian Outdoor Leadership Council on (03) 672 333595

Remote Area First Aid:

Dates: 17, 18, 19, March (in the evenings) as well as 28, 29th March (on the weekend)
Cost: $280
Venue: Hobart
Who For: Outdoor Leaders & Remote area workers, and anyone else seeking the emergency response and management skills to provide sound patient care in remote areas.
Prerequisites: Current senior first aid certificate.
Course Content:

- Accident Management Plan.
- Legal responsibilities.
- Assessing and managing illnesses and injuries in remote areas.
- Extended patient care.
- Improvisation techniques.
- First Aid Kits & Medications.

Instructing in the Outdoors:

Date: 23rd May
Cost: $100
Venue: Hobart
Who for: People with limited teaching and/or instructing experience in the outdoors.
Prerequisites: Participation in one or more outdoor activities over a minimum of three years.
Course Content:

- Keys to effective outdoor instruction.
- Preparation & Planning
- Learning styles.
- Instructional techniques.
- Feedback & debriefing

Intermediate Land Navigation:

Date: 4-5th April
Venue: Hobart
Cost: $140
Who for: People wanting to become confident at navigating off track & to improve their basic skills.
Prerequisites: Knowledge and experience of map reading and compass use.
Course Content:

- Planning an off track route.
- Feature based navigation/
- Direction finding using a compass.
- Night navigation & navigation in poor visibility.

Weather Interpretation:

Date: 16-17th May
Venue: Hobart
Who for: People wanting to improve their weather observation & forecasting skills.
Prerequisites: Active participation in outdoor activities.
Course Content:

- Interpreting weather Maps & forecasts.
- In-field observations
- Planning for weather implementation.
- Forecasting from field observations.

Infield Search & Rescue:

Date: 2-3rd May
Venue: Hobart
Who for: Outdoor Leaders wanting to competently manage a situation involving lost, missing or injured party members.
Prerequisites: Participation in one or more outdoor activities over 3 years or more. Some Outdoor leadership experience.
Course Content:

- Information Gathering.
- Making an appreciation of all factors.
- Decision making process.
- Developing an action plan.
- Working with emergency services.

- Instructional techniques preparation and planning.

Net Stuff

Oz Cavers

From: Webb Rauleigh <Rauleigh.Webb@wmc.com.au>
Subject: Subscribing or Leaving OZCAVERS

Hi everyone,
Pass the word around that there is now an interactive way of subscribing to ozcavers or leaving ozcavers. You can go straight to the page at:-

http://listmaster.iinet.net.au/cgi-bin/list-about?ozcavers

or you can have a look at all of the lists available at iinet by going to:

http://listmaster.iinet.net.au/

You will find ozcavers called Australian Cavers with a description of "An open list for discussion of issues relating to caving in Australia.
Regards
Rauleigh

STC WaReHoUsE SaLeS

Did you know that we have the following for sale?
There are some hard to beat prices here! Also the small profits go into the club coffers, so you benefit twice. Have a good look at our range.

Tape

- Edelrid 25 mm tubular tape. Ideal for rigging, chest harnesses etc. (Yellow) $2.00 per m
- 5 cm flat tape (available in Blue or Red) $1.50 per m
- 1.5 cm flat tape (White) $0.80 per m

Safety

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

Lighting

- Duracell 4.5 Volt flatpack batteries (for your backup Zoom) $8.00 each (or 3 for $23.00)
- Plastic light brackets (new and with fittings) for helmets $3.00 each
- Metal light brackets (used and no fittings) for helmets $1.00 each
- Jets (21 litres/hr) for petzl kaboom $5.00 each
- CARBIDE *MUST BE USED RESPONSIBLY* (Limited Quantity Only) $8.00 per kg
- Miscellaneous second hand pieces for Oldham headpieces. Contact us for details.

When you need any of the above please contact
Jeff Butt on (03) 62 238620 (H), 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.