



C.D.A.A. Newsletter

# GUIDELINES

No: 65 - JULY 1998



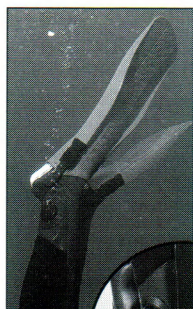
**CAVE DIVERS ASSOCIATION OF AUSTRALIA**

(Incorporated in South Australia)

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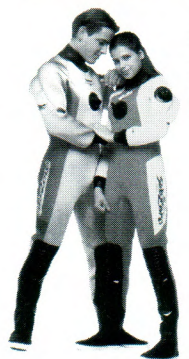


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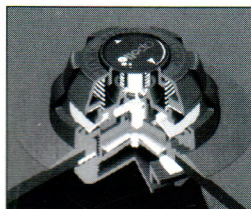
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## EDITORIAL

Hello again and welcome to the June issue of Guidelines. Thanks must go to all who have contributed to this issue. After getting my first issue out and starting to prepare for this one some things have become apparent. Most people unless hassled can't be bothered doing anything for guidelines (except complain how late it is, the stories are no good, etc.). It is a select few that do put in and contribute to what is and hopefully will continue to be a fine magazine.

It is interesting that quite a lot of American cave divers have commented in the past how much they look forward to receiving Guidelines. The Australian divers that

subscribe to the American newsletter seem to have all cancelled their subscriptions citing poor quality of articles as the main reason.

I can't stress strongly enough that without the continued support of a select few Guidelines would be nothing but blank paper. Please have a think about this and contribute to what is YOUR magazine!!!!

The plea I made in the last issue for articles and photos suitable for the front cover resulted in one response! Surely people out there must have at least one great photo they would love to see on the front cover.

Glen O'Connell  
Editor

## ARTICLES FOR GUIDELINES

Members wishing to submit articles for inclusion in guidelines can do so in the following manner:

- Send articles & photos via post to:  
The Editor, Glenn O'Connell, P.O. Box 290, North Adelaide, S.A. 5006.
- Email to [glenn@vds.net.au](mailto:glenn@vds.net.au)
- Any files for inclusion should be saved in "TEXT" or "ASCII" format. Hardcopy should also be provided wherever possible.

## ADVERTISING RATES

FOR SPACE - APPLY TO THE EDITOR

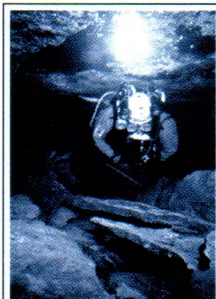
"Guidelines" magazine is circulated to over 1200 members and retail outlets.

Back page	2 colour	\$350.00
Inside Front Page	Black & White	\$300.00
Inside Back Page	Black & White	\$300.00
Full Page	Black & White	\$250.00
Half Page	Black & White	\$150.00
Quarter Page	Black & White	\$100.00



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**Front cover:**

*Andrew Robertson  
in Engelbrechts  
West*

*Photo by  
Robert Westerdyk*

## CAVE DIVERS ASSOCIATION OF AUSTRALIA

P.O. BOX 290, NORTH ADELAIDE,  
S.A. 5006

GUIDELINES is a newsletter of the Cave Divers Association of Australia. All articles for the following issue are to be sent to the Editor, Glenn O'Connell, P.O. Box 290, North Adelaide, S.A. 5006. All articles and submissions shall automatically constitute an expressed warranty by the contributor that the material is original. We assume no responsibility for unsolicited material. Articles and information may be reproduced without prior permission provided reprints are accredited to the authors and GUIDELINES. Private advertising for caving and diving equipment may be advertised free at the discretion of the Editor. Opinions expressed in GUIDELINES are those of the individual authors and are not necessarily those of the C.D.A.A.

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If you know who you want to write to, please address your letter to the relevant director.

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### CDAА INSURANCE

Insurer: FAI  
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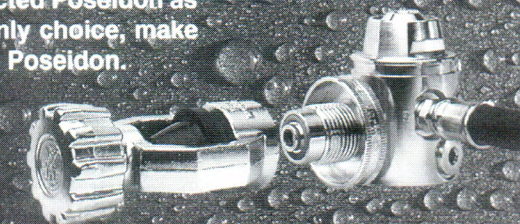
**The Jetstream** The ultra-high performance regulator offering extreme breathability regardless of depth or work rate. In short, the standard by which all other regulators are judged.



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## LAMAR HIRES

Lamar started diving in 1979 in the springs of North Florida. Cave diving was a natural progression for Lamar, since the springs were only a day trip from his home in Jacksonville Florida. Lamar moved to the North Florida area in 1982 and managed Branford Dive Center until the spring of 1984, then joined Mark Leonard in May of 1984 to start Dive Rite.

In the autumn of 1984 Lamar acquired his instructor ratings and became very active in the Cave Diving Section of the National Speleological Society. As an instructor

Lamar has trained over six hundred people to cave dive over the past fourteen years. Service to the Section includes five years as Training Chairman and two years as Chairman. In 1996 Lamar was awarded fellowship in the National Speleological Society and in 1998

received the Outstanding Service Award from the Section. He is a co-author of the *NSS Cave Diving Manual "An Overview"* Cave Diver Workbook and numerous diving magazine articles.

Lamar's passion is exploration. Expeditions to Puerto Rico, Mexico

and Japan represented some interesting challenges, and the newest region he is exploring, Japan, is an ongoing four year project. Lamar has explored and mapped many caves in the North Florida and South Eastern United States. Future expeditions

include the Italian Alps (summer of 1998) and Brazil. Lamar's specialty is side mount techniques and sumps.

Presently, Lamar is the president of Dive Rite, where we manufacture and distribute equipment for specialty diving.



Announcing the

## CDAA 25th Anniversary Weekend

Join in and celebrate the 25th year of our Association.

We are proud to announce that Cave Explorer & owner of Dive Rite, LAMAR HIRES, will be our keynote speaker at the special Anniversary Dinner.

A superb 3 course celebration dinner has been organised, which will also be the venue for the presentation by Lamar.

Lamar will talk on his experiences in mapping caves in Florida, Mexico & Japan, as well as his vision of the future of Cave Diving & the equipment we all use.

**The full 3 course celebration meal, plus the presentation by Lamar, is only \$30 per person.**

**Great Value Indeed!!!!**

Also on the Anniversary weekend is the fun of the AGM, a FREE members BBQ after the AGM, and on Sunday a FREE Sidemounting & Equipment Configuration Workshop, again presented by our guest speaker, Lamar Hires.

**ENSURE YOUR SEATS - BOOK EARLY & SUPPORT YOUR ASSOCIATION'S 25th YEAR.**

OCTOBER 17th-18th, International Motel  
Millicent Road, Mount Gambier



## Product Review by Victor Kostiuk

# Solution Tube Tripod and Cliff Edge Frame

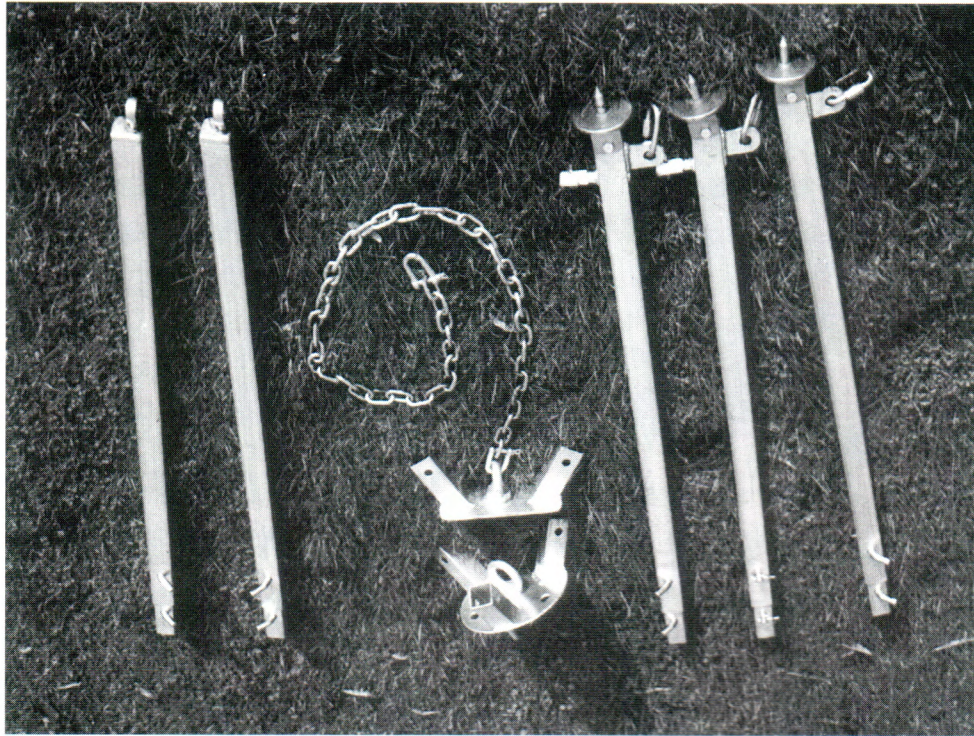
Cliff Edge Rollers and tripods: an affordable option. After numerous attempts at finding an answer to the problem of equipment haulage in solution tubes and cliff edge scenarios and spending more time than I care to admit to contemplating variations in designs, I have found, albeit accidentally, a pretty good solution.

When I started this 'cave diving stuff' some years ago, I took on the challenge of designing a suitable piece of equipment to safely haul that 'expensive' gear up and down the holes we love to visit. I took on board the variety of designs that I had seen made by 'veteran' divers which included variations made from spare tyres, old water pipes and expensive looking purpose built devices built by suitably qualified manufacturers. I scratched my head for some time thinking about alternatives and came up with individual solutions to problems,

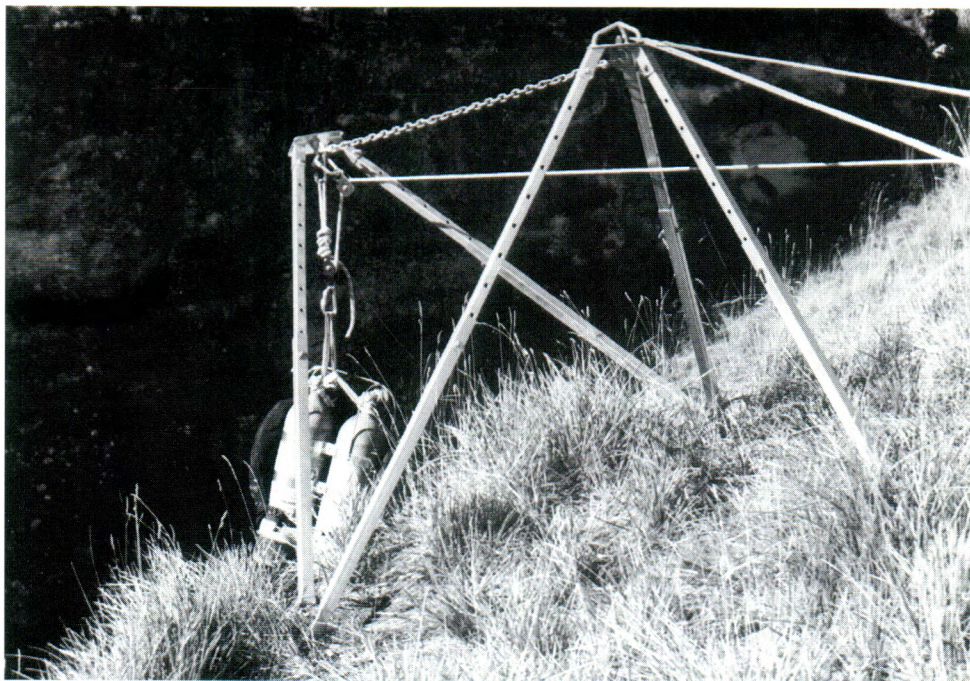
ie. a cliff edge roller, a tripod and even a gear hauling rack but no single device that could do it all. It seemed to me that the perfect design was all too elusive.

Then came along the object of this review, the 'Solution Tube Tripod and Cliff Edge Frame'. I had been diving with a 'solid' group of divers for some time when one day, one of them introduced me to an innovation designed and manufactured by Paul Axton. What impressed me were the features of the unit.

The unit is described as a tripod with optional counter-lever 'A' frame. It is made from square section galvanized steel tubing. Each leg is made up of an inner tube which slides through an outer tube with a number of adjusting holes. The length of each leg is determined by selecting a corresponding hole and securing the length with a pin. Each leg can therefore be adjusted individually to cater for uneven







surfaces. The foot of each leg has a spike ensuring the tripod is firmly planted on a variety of surfaces and angles. The apex of the tripod is thoughtfully designed with sufficient holes and fixtures to accommodate lateral tie downs, carabinas and ladders, an essential innovation.

What really impressed me was the design of the counter-lever 'A' frame and how it attached to the tripod. The thing that stumped me in my attempts at the perfect design was a suitable linkage that would hinge a variety of angles brought about by a counter levered 'A' frame from a sloping tripod. In this design, it was achieved by a ball and pin linkage similar to that found on the three point linkage on tractors. It was perfect and accommodated the infinite variation in geometry brought about by swinging the counter lever 'A' frame from the tripod. The 'A' frame was secured to the tripod by a chain whose length could be varied easily depending on the application. (See figure) Climbing hardware could be attached easily with carabinas.

Apart from the design of this unit, the quality of manufacture is also impressive. The design

also features many identical parts, which makes assembly of the unit very quick and easy. The unit is also very portable fitting into the corner of the boot of a car. One slight improvement should be considered by the manufacturer in securing the spring pins to the unit by means of a lanyard or similar thus eliminating the chance of loss during transport or assembly.

On a recent weekend (April 1998) diving with a number of senior penetration divers, the device was utilized getting into Iddlebidy. Traditionally I have found it hard to impress any hardened South Australian diver in the ways of Victoria however on this occasion, praise rained. The quality and design of the unit could not be faulted.

All things considered, the solution tube tripod and cliff edge frame fits the bill and is worthy of inclusion in the equipment collection of any cave diver worth their salt. If you are interested, give Paul Axton a call on 0418 304 120, or AB Ocean Divers on 03 9579 2600.

## Nullarbor '97 > Beneath the plain! by Paul Hosie

Imagine. You're 120m underground in 30m of water. The nearest air chamber is 300m behind you and the nearest sunlight three times that distance. You look up at a slab of rock representing 120m of limestone sitting over your head. Your buddy hangs suspended in mid-air a few metres in front of you, his exhausted air racing up to splash on the ceiling, forming puddles of quicksilver. The passage in front pinches down from a huge tunnel where you can barely see from one side to the other into a smaller tunnel continuing on and further down into the rock. Is this Heaven or Hell, or maybe a little of both ??

Prior to arriving at this point, diving encased in rock beneath the Nullarbor, each member of the team had trodden the path of righteousness under Steve's nurturing guidance. We began as mere mortals, aspirations of Cave Diver status blinding our vision. A couple of water training sessions in Waroona Dam during Winter sorted that out (particularly those who reckoned doing it without a wetsuit would be a real personal achievement - Goodonya Chris !). If at any time during training you started to look uncomfortable or distressed, Steve was always there with a helping hand to stir the mud up in front of you, to lovingly flood your facemask with freezing dam(n) water or give your reg a friendly wiggle - purely for reassurance. These caring gestures were always accompanied by a beaming smile ! How we all adored and respected his blessed little cotton socks !!

We began with simple line following and hand signals. We ended up buddy breathing, reeling in line, communicating by touch and adjusting buoyancy without masks on - all at the same time !! Although this didn't happen overnight, it DID happen ! The trip began at the Malibu legendary 'back room' with a briefing by The Nullarbor Veterans Association. Gear was assembled, the trailer reconfigured & vehicles fuelled. 6pm Friday and we were off (some things never change!) - dinner at Northam (8pm), meet up with the new Sturgeon Family Toy at Coolgardie (3am), breakfast at

Balladonia (7am) and Camp Cocklebidy, adjacent to Murra-El-Elevyn about 10am. And that's where the fun began !

Waiting for us at Murra-El-Elevyn was the Kalgoorlie Contingent - Rob and Karl. They were unhappy about forgetting quail eggs to garnish the duck terrene Karl had been slaving over that morning. They never stopped having problems the rest of the week - ran out of caviar (maybe we can get some at the Cocklebidy Roadhouse ?), the camembert was too runny and the bruschetta must have been from a bad batch. Once camp was set and some excuse for lunch wolfed down, we set off to Tommy Grahams. It took a couple hours to get all the gear down to the water. We formed chains to shuffle the gear down item by item. Bags became famous for their back-breaking ability; we had the Golf Clubs, The Brick and the Golf Buggy - truly memorable to those who endured them!

A slumberful night and a hearty breakfast had us prepped for our first day diving. Those first dives were dream-like; the concept and beauty of it all mesmerized me. After practicing our basic skills and completing the obligatory exercises, we left Tommy Grahams after spending a full day down the hole. The water was surprisingly warm (23.8°C) with a couple large main chambers and some side rift passage. Following our two supervised dives and a long rest-break, we carted all the gear up and out of the cave - against gravity. We were all knackered and glad to have a shower and meal at the Roadhouse before collapsing into bed back at camp. The next two days saw us diving in Murra-El-Elevyn - right next to the campsite. We were qualified Cave Divers (& Certified Mad) at Snowflake Chamber from which we headed off on our own.

'Murra' is a very pretty, interesting cave - several hundred metres of winding passages, a few small air chambers, some low flattener passage and rocks full of fossils. The water temperature was a comfortable 19°C and the maximum depth in the cave about 15m - nice



long dives before the 2/3 capacity of our air supply was reached and we turned around. The generous loan of a video camera with underwater housing allowed us to take some interesting footage in this beautiful cave.

Heading to Eucla on Wednesday brought another surprise - we met our Bat Buddies - the Cave Crusaders, resplendent in their 'Team' T-shirts. They were another Cave Diving group from Perth out on the Nullarbor. We quickly moved on to Weebubbie before a connection and further embarrassment could be made !

Weebubbie, named by a very sarcastic Scotsman, was to be the final dive-stop for the trip. The diving was phenomenal. Awesome and all the superlatives you can and can't think of. We did half a dozen dives here and each one was to a different part of the cave. The dive to the end of the Railway Tunnel was totally mind blowing. We took lots more video footage - most of which came out well, except for the main passage - you need real megawattage of light to illuminate the gigantic tunnel. The huge airdome was impressive and the sides of the rock collapses fell away to 30-40m ending up in the low 'White Rooms', giving plenty of scope for some truly interesting diving.

I'd like to question the validity of something though: We traveled 1500km dodging rocks,

hauled gear up and down over rocks 'til it hurt and we lived like bugs for a week - for what ? - an hour under water blowing bubbles ?! It doesn't make sense . . . that is, until you've done it !! Diving in water that's as crystal clear as mountain air and surfacing in a subterranean lake chamber is as exhilarating as diving without sharks gets !! Particularly impressive was the fossil rich rock we saw in Murra El Elevyn. There were other surprises - Snowflake Chamber, the SuperDome in Weebubbie and The Blue Room of Tommy Grahams. Each place was a real treasure, captured perfectly by grey cells sparked up to the peak of their receptive ability.

OK ! Now stop Imagining and get yourself onto a Cavern course - the first step on the path to being a Cave Diver. Steve's training is top notch (where's my cheque Sturgeon ?) and the rewards are far beyond what my pathetic ramblings can convey !! Do It.

#### About the Author

Paul is a macho, intrepid kind of guy who normally only scuba dives in pools - for added safety. He took up Cave Diving to conquer claustrophobia. After diving the Nullarbor, he now has agoraphobia to deal with. Credit for this article must go to Mr. Helmut Varshing for his considerable assistance during the trip. We wish him a safe trip back to Dusseldorf.

## Dave Burchell

### From the Book One Foot In The Grave, an autobiography by Dave Burchell

Probably the most dangerous dive in which I was ever involved was the time we did a survey for the Mount Gambier Council in the Englebrecht Caves.

This dive cropped up after I'd been diving in the freshwater lakes round Port McDonnell with Ross Curnow and John Lees. Ross and I had spent a couple of hilarious days terrifying Lees in the Piccaninny Ponds. Of course we'd seen to it that he hadn't been in any danger, but he didn't know this, and as Lees is the original practical joker we reckoned it was time we got one or two back on him.

On the way back to Adelaide we'd called in on some friends at Mount Gambier who told us that one of the city councillors, who had heard we were about the place, wanted to see us. We looked the chap up and found that the Mount Gambier Council was interested in making a survey of an underground lake system right there in the town, known as Englebrecht Caves, and being aware of our trips to the district diving in their lakes, thought we might like to make ourselves useful and dive in this one for them. Unfortunately it was out of the question that weekend for we were out of air, but I reckoned we could do it in a couple of weeks time. This was O.K. by the Council, who were so pleased they even went so far as to offer to pay for our petrol.

During the next week I wrote to Mick Potter, a diving friend of mine who lived in Mount Gambier. Mick is one of the most experienced lake divers I know and had been with me when years before we made our first tentative dive into the eerie depths of the Baby Blue Lake out from Mount Schank.

Since then he has either personally discovered, or dived in, every known lake in the whole of the vast volcanic network which makes up the Mount Gambier district. Probably his greatest find was the now internationally famous Piccaninny Ponds, where the clear fresh water bubbles up through the rock fissures from underground springs hundreds of feet below. In my letter I asked Mick if he would dive with me

in the Englebrecht Caves since it was a two-man job. I also asked Curnow and Lees, who both wanted to come along, to act as stand-by divers.

Two weeks later we again set off on the three-hundred-mile trip to Mount Gambier. I was glad we had arranged to meet Mick down there, for the car was laden down with the usual collection of divers' gear, lungs, suits, ropes and torches, all necessary to complete the survey, plus our camping gear. Mick and several councillors were already at the site of the Caves, which were marked by a forty-foot dry crater. At the bottom of this crater was a split in the rocks forming an opening into a natural tunnel-like cleft, which in turn led down to the lake a further sixty feet below. To reach the water it was necessary to worm our way along and down this tunnel, which was probably a blow-hole in the old volcanic days.

At times the ceiling was so low that we had to slide on our stomachs, and as it was pitch dark as well I was pleased enough when it opened up into a huge cathedral-like cave. With the lake acting as a floor this impressive area was about one hundred feet long, thirty feet wide and forty feet from the water level to the ceiling, and lit up by the powerful lights we'd lugged down it looked magnificent. I could well understand the Council's desire to find out if there were any more such caves close by, for if there were the plan was to open the whole thing up and with steps and lights turn it into a tourist attraction.

The domed ceiling, sweeping down in an unbroken line to the water, gave no indication of any further caves, and our job was to search around under the water-line and see if any tunnels ran off from there. If there were it was intended to follow them and see where they led. The water was so clear at the bank where we were standing that if it hadn't been for some patches of dust on the surface it would have been hard to tell it was there at all. So leaving my Scuba on the bank, I took a torch and snorkelled around the perimeter of the lake looking for tunnels.

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I'd nearly completed an underwater sweep of the walls without finding any lead-off, and was on my way back feeling mighty disappointed, when the probing beam of the torch picked up an opening about ten feet down. Taking a couple of deep breaths I duck-dived to the tunnel's entrance, and steadying myself against the roof of the opening with one hand, carefully inspected the passage with the aid of the torch. As far as I could see the passage, which angled down at about forty-five degrees, led into another cave, and I decided it was certainly worth investigating. Returning to the bank I worked out a plan with Mick and we decided, using our Scubas, to follow the tunnel in as far as we could whilst John and Ross waited outside.

Mick had wisely rolled the nylon shot line round an old electric cable spool, for previous experience had taught him that it is better to pay the rope out as you go from the diver's end, rather than have someone paying it out from the surface. So anchoring the end of the rope to an iron spike driven into the ground, we asked one of the councillors to hold on to it as well.

Taking two torches myself I tied a third on to Mick's belt as an added precaution, and with him leading and paying out the shot line from the spool, we swam down through the tunnel. Coming out the other end, through the roof of the flooded second cave, we entered a world of fantasy. The water was so clear that I felt it must surely be too thin to hold us, and I had the uncanny feeling that at any moment we'd fall right through it on to the rocks forty feet below.

From our vantage point up near the roof I played the torch round the eerie scene. Across on the far side wall near the floor the beam picked out yet another passage, so giving Mick a nudge, we 'flew', like two spooks out of a crazy dream, through the air-like water down to this new opening. We continued on in this fashion, winding and twisting down passage after passage, carefully paying out our shot line until finally we ran out of rope. This meant that we were three hundred feet from where we started, and a glance at my depth gauge showed we were also fifty feet deeper than the water level in the first cave.

There wasn't much more we could do and I'd just given Mick the signal to pack it in and return to the others, when it happened.

Quite suddenly everything went completely black. For one terrible moment I thought somehow, unaccountably, I'd gone blind. I just couldn't see anything.

Then to my great relief, for a few fleeting seconds, Mick appeared again in the torch beam. Through what had appeared to be lazy swirls of black mist I could just make out his eyes staring back at me from behind his face mask, and I realised what had happened. Apparently in the Englebrecht system, like many of these deep volcanic fissures, the springs channelling the water in were reasonably slow, so slow in fact that the thick volcanic dust on the floor of the tunnels had lain hardly disturbed for thousands of years. But the turbulence caused by Mick and me swimming down had stirred up this now fine silt, which following us in a dense black cloud, enveloped us completely when we stopped after coming to the end of the rope.

In the few seconds we had between the temporary clearance and final total darkness I gave Mick the 'Are you O.K.?' sign and jerking my head in the direction of the main cave, indicated 'Let's go.'

Mick was in the act of acknowledging the sign when the black mist once more curled in and he disappeared altogether.

'Steady now,' I told myself as an uneasy stab hit me in the stomach, 'the first thing is check your air.'

Feeling for the tactile gauge on my high pressure hose I estimated the quantity of air left as shown by the indicator needle, then carefully reaching across to where I knew Mick must be I quietly felt around him until I located his gauge; like mine it showed three-quarters full.

'That's O.K.,' I thought, 'at least we have plenty of air.'

Whilst searching for Mick's gauge I could tell he was taking up the initial shot line slack on his cable spool, and realised what a mess we'd have been in if the rope had been paid out from the other end. I also appreciated having a cool-headed bloke like Mick for company. If there'd

been the slightest panic it could well have meant the end for both of us. The old Potter, always the quiet one, doesn't say much as a rule, but as a diving mate he'll do me any time.

I suppose three hundred feet doesn't sound far, but when it involves winding your way blind through a labyrinth of tunnels it seems like three hundred miles, and whilst at no stage did I seriously consider we wouldn't make it, I was very much aware of the danger we were in.

For if either of us accidentally clouted our regulators on the uneven walls and ceilings, which in the dark was quite on the cards, we would have run the risk of immediately losing our air supply, or if the shot line, sawing back and forth at a dozen places against the sharp volcanic rock, happened to break under the strain, we would never have found our way out. It was a case of sustaining slow calculated movements and concentrating on following the shot line, which had now virtually become a life-line, for to have lost contact with the rope would have proved equally disastrous. Letting the now useless torch go and leaving it to hang from the cord round my wrist, I took a firm grip on the rope and inching along, fed the line back to Mick who rolled it up as we went.

Due to the tortuous nature of the passages the shot line had pulled into cracks and fissures in the broken ceilings and walls, and several times we came up against solid rock with the line seemingly feeding through a minute split in the wall confronting us.

On these occasions, holding the rope in one hand, I would then endeavour to trace the split back to the main tunnel with the other hand, feeling around in as large an arc as possible.

If this proved unsuccessful I'd repeat the performance on the other side. Four times this happened and four times I had to remind myself that as we'd got in, there must be a way out. Also I remember feeling easier if I closed my eyes instead of staring into that black nothingness. There must have been something psychological about it, and I always meant to discuss it with my head-shrinking cobbler John Litt, who like most psychiatrists can logically explain away anything.

During these times when we were held up Mick, who seemed to sense what was happening, would wait patiently somewhere behind me until I'd sorted out our new course, until finally we swam back up into the main lake and made our way across to the bank.

The Mount Gambier Council, after hearing our report, eventually decided to abandon the project, and although Mick and I haven't talked about it much we both know that our dive in the Englebrecht Caves was a close one. The slightest mishap or mistake could well have resulted in us staying down there - permanently.

---

Lowering myself carefully down inside the cockpit I eased into the bucket-seat and, taking hold of the small steering-wheel, stretched my foot out and placed it lightly on the huge accelerator.

It was really quite a moment. 'Boy, you certainly get yourself into the oddest places,' I thought.

I was at the controls of the most famous speedboat in the world, Donald Campbell's Bluebird. The time was December 1964, and the place Lake Bonney at Barmera, in South Australia's Upper Murray River district.

After three weeks of frustration waiting for the rough surface on the wind-swept lake to return to its normal placid state, it appeared that Campbell would at last have his chance to break the world water speed record, for today conditions looked favourable enough for Bluebird to make her run.

We were there, Ross Curnow and I, in answer to the urgent phone call I'd received the night before from the project manager, Graham Ferrett. He needed a couple of divers on hand in case the Bluebird came to grief and sank, for if this happened at a speed in excess of 200 m.p.h., it would be necessary to pull Donald Campbell out quickly.

Peter Warman and Colin Williams of the Police Aqualung Squad, who had been standing by at the lake as a security measure for the past three weeks, had been recalled to Adelaide since the bad weather looked like continuing, prohibiting an attempt for at least a few more days.



Suddenly, however, the wind had died and the lake started to flatten out. Immediately all stations were on 'go', and as Graham found, after an urgent phone call to Adelaide, that the Police divers were unobtainable, being off somewhere on another job, he rang me. I told him I'd be pleased to help out, and when he said he wanted two divers I gave Ross Curnow a ring. By four in the morning we were on our way.

After arriving at Barmera, Graham introduced us to Campbell and his master mechanic Leo Villa, who had been on hand at no less than twenty-eight world record speed attempts, both on land and water, assisting Donald and his famous father Sir Malcolm.

Taking Ross and me down to the shed on the bank of the lake where Bluebird was housed, Leo explained how important it was to be on the job quickly if anything did go wrong. Unlike John Cobb's Crusader which dug in nose first at 205 m.p.h. on Lock Ness in Scotland, the Bluebird's design was such that, in the event of an accident, she would like as not flip over backwards, making it necessary for us to work on the boat upside down. He showed us how to release the cockpit canopy, assuming it wasn't damaged, and how to bust it open if it was.

Everyone was a bit tense as the overall project, which was aimed at breaking both the world land and water speed records in the one year, was fast running out of time. They had the land record, 403.1 m.p.h. on Lake Eyre in South Australia's Far North under the belt, but in order to pull off the double had to do better than 260 m.p.h. on water before midnight on 31 December, less than a month away.

I asked Leo if it was O.K. for me to climb into the cockpit of the boat. I wanted to get an idea of what obstructions there may be to a man's legs if we had to pull him out in a hurry. He gave me the 'go ahead', so there I was, no doubt at the peak of a million schoolboys' dreams, in Donald Campbell's seat at the control of the Bluebird.

A little later we were squatting on the bank, waiting. It seems you do a lot of this when breaking records. Leo was explaining how when

she's up and planing, the whole two tons of the Bluebird rides on eighteen square inches. 'Breaking the "water barrier" is the difficult part,' he said. 'This is somewhere round 200 m.p.h. plus, and the boat vibrates violently up until about 230, but once she's passed that she really takes off.'

Behind Leo's back, at this remark I raised an eyebrow at Curnow. His only reply was to silently shake his head. Obviously Ross's boat, flat out at 25 m.p.h., was fast enough for him.

With an awesome roar at 210 m.p.h. she seemed to be coming straight for us, the almost imperceptible swell making her snake and leap.

'If he goes a mile an hour faster,' I thought, 'Curnow and I are a moral to go over the side of these pick-up boats.'

It seemed she was all but out of control, and we were mighty relieved when Campbell finally heeded Leo Villa's repeated requests over the radio 'to give it away'. The swell caused by the flooded river flowing into the lake had beaten them again.

That was the last try on Lake Bonney, for shortly after the whole crew, plus the boat, left for a last-ditch try on Lake Dumbleyung, over 2,000 miles away in Western Australia, and after six and a half weeks of waiting they got the ten minutes of calm water they wanted.

There at 3.40 on the afternoon of 31 December, with less than eight and a half hours' time left, Donald Campbell set a new world water speed record at 276 m.p.h. and completed the double.

*Submitted by G. Barclay*

*Editor's note: Dave Burchell was born in Millicent, South Australia. He lost a leg in a boyhood train accident, but eventually came to view this as a 'blessing in disguise', leading him to take up many more challenges than he would otherwise have done. When he retired, his many sporting interests included skin diving, archery, pistol shooting, tennis and following Australian Rules football.*

# If you have a body, the BCS will fit it!

**BCS**  
Bouyancy Control System  
One size fits all!

**Unique adjustable shoulder yoke and strap assembly (patent pending)**  
Allows the diver an adjustable range of over 10" as well as adjustable ring and buckle placement

**Adjustable D ring position**  
Two provided, additional D rings easily installed

**Weight System "clips out" for easy restringing (patent pending)**  
Two height positions available for comfort and trim adjustment

**Auto-Retract Attachment System (patent pending)**  
Two retractable shock cords with hooks for attaching console, small lights etc.

**Adjustable lumbar pad between the tank and diver's back (not shown)**

Crotch strap is adjustable or removable

**Patented Double Pull-Cord Lanyard Weight Release System**  
Allows diver to pull and release half of weights at a time

**Diver can easily switch between integrated weight system and no integrated weight system**  
When no weight system is used, option waist strap assembly available

Available with or without integrated weight systems

**Airway with power inflator and pull-to-dump valve**  
(can be mounted on left or right side on wings model)

**Double shock cord cell retract system on wings holds the cell in close to the body**

**Manual bottom dump/overpressure valve** (can be mounted on left or right side on wings model)

Sternum strap is adjustable or removable

Easy to use weight pockets

**40 Pound Weight Capacity!**

Most integrated weight systems have limited capacity of 10-20 lbs

**Wing's circular cell design allows complete air flow within the wings**  
Eliminates diver's need to modify movements to adjust air position in the wings

**Approximately 58lbs of lift**

**Made with 1000 Denier Cordura**

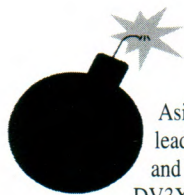
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# Impressive Features Unique Design





# WHY DOES THE DV3X BLOW UP?

by George Irvine

Aside from the obvious fact that all lead acid batteries offgas hydrogen, and hydrogen will explode, the DV3X scooter has other idiosyncrasies that make it more of a risk than with other models. For one thing the lid is only removable by taking out the screws, and it is very difficult to seal, while the Mako or DV 100 models have removable latch-on lids. The DV3X has a charging port plug which people tend to replace after charging (the worst possible time to do so - give it an hour) in order not to forget to do it before entering the water. All scooters should be allowed to sit open until ready for use. We just leave the o-ring out of ours until ready to dive. Sparking of the embedded charging port during charger hookup is a common cause of flash explosions.

Another problem with the 3x is that people try to take them deep. They are an oval cross section that will not take much depth without flexing. This causes the lower bulkhead to bow and leak hydrogen, or to fracture and leak hydrogen to the sparking motor below. The hydrogen from the batteries will rise in pressure while the battery offgasses, forcing the hydrogen in, but not necessarily allowing it to get back out on the surface. Frequently the scooter is not open long enough to let the hydrogen out.

The worst problem is that there are no less than 22 penetrations of the lower bulkhead that can let hydrogen in if they fail. Four of these are the support rods that the top bulkhead also sits on, which are compressed when the scooter is taken deep. Four of them are the screws holding the motor in place which are stressed every time the scooter is set down on its shroud. 8 of them are screws that hold the bulkhead down against the o-ring, which itself (number 22) can deteriorate. One is a milspec test port, four are electrical connections.

All of these penetrations display stress fractures and allow the pressurized hydrogen from the offgassing batteries in the sealed-up scooter to penetrate the motor compartment, and set the stage for an explosion when the trigger is pulled.

You will notice that the most successful use of these scooters, and the Makos, is in Mexico where the water is shallow. Notice also that the seals seem to last forever down there as well. These devices were

not ever intended to go deep, and I think you will find that the original sticker on all scooters recommending 130 feet is in keeping with PADI guidelines for diving, not the scooters themselves. Sure, they APPEAR to be ok after going deep, but they have been doing things you don't want to know about while you had them there.

While the inside of a DV3X scooter is like Schraedinger's cat to see in action, to visualize the process takes very little engineering understanding. Suffice it to say that the thing flexes, bows, and moves all around. Have you ever heard any "cracking" sounds when you drop down with one of these? That is the sound of the slide being pulled back on the .45 aimed at your head.

These scooters are worth exactly \$74. That is for the shroud and the blades - there is nothing else there. From that you deduct the handling charge for taking the shroud off as well as the disposal charge for the batteries, and you have nothing. The handles are a nightmare, the motor cone does not have the barrel seal, the motor has too many turns of the wrong wire on it with too little copper, the wrong pitch and span, and is both slow and inefficient. The drive gear, clutch, yoke and screw all are garbage. I can't tell you how much time I wasted on these things before I wised up, but it was just after I quit stuffing my hose, if that tells you anything.

George M. Irvine III

George Irvine is the Equipment Technology Chairman of the National Association for Cave Diving, Director of the Woodville Karst Plain Project and a member of the NSS-CDS.

Editor's note:

The recent underwater explosion of a Tekna DV-3X at Ginie Springs prompted us to ask George for comment. The advancing age of these devices, their popularity among Cave Divers and the increasing numbers of reports of explosions are of concern to us all. George builds the DPV's used by the WKPP divers.

*Reproduced from Underwater Speleology Magazine.*

## NOTICE 1998 ANNUAL GENERAL MEETING, ELECTION OF OFFICE BEARERS AND VOTING FOR MEMBER MOTIONS AND CONSTITUTIONAL AMENDMENTS

This notice is issued pursuant to Clause 32 of the Constitution and serves to advise members that the Annual General Meeting of the Cave Divers Association of Australia will be held on 17 October 1998 at the International Motel. The Annual General Meeting will commence at 10.00am and will conclude no later than 12.30 pm.

This notice also serves to call for:

- Nominations for office bearer positions;
- Member motions;
- Amendments to the Constitution

The items so called must be received by the Returning Officer no later than 10.00 am Wednesday 2 September 1998. Items received after this date will not be accepted, nor will any extensions to this date be granted.

Members intending to nominate for an Office Bearer position must be an eligible member of the Association as defined in the Constitution. Nominations must be accompanied by a precis not exceeding one hundred words detailing skills, experience and achievements relevant to the duties and responsibilities of the nominated position. The responsibilities of Office Bearers are contained in the Constitution of the Association and additional responsibilities are detailed in the 1998/99 budget contained in this issue of Guidelines. Nominations must be in writing and signed by the nominee, the proposer and the seconder all of whom must be eligible members of the Association. The polling date for the election is 17 October 1998.

The election of Office Bearers and voting on amendments to the Constitution will be conducted entirely on postal voting papers.

Polling date is 17 October 1998. If you wish to vote you must be an eligible member of the Association, you must use the ballot papers to be provided in the next issue of Guidelines. All questions can be directed to the Returning Officer, Mr Jim Ferry, 12 Grand Central Avenue Hallett Cove SA 5158, email 'jvcferry@bold.net.au'.



# CDAA SITE ACCESS

Remember: Access is a privilege, not a right. Please be considerate of landowners wishes.

CN = CAVERN S = SINKHOLE C = CAVE P = PENETRATION

SITE	LEVEL	OWNER	ACCESS DETAILS
<b>MOUNT GAMBIER - SOUTH AUSTRALIA</b>			
<b>Ewens Ponds</b>	Nil	DENR P.O. Box 1046 Mt Gambier 5290 (08) 8735 1177	Groups of 6 or more, phone/mail to Dept. of Environment & Natural Resources (DENR). Smaller groups, no need. Indemnity form to be completed.
<b>Horse &amp; Cart Tea Tree</b>	CN CN	Peter Cunningham PO Box 643, Mt Gambier 5290	By phone or mail, 1 week prior. Ph: (087) 38 4003.
<b>Little Blue</b>	S	Port MacDonnell	Little Blue - permission not required - must carry card.
<b>Allendale</b>	C	Port MacDonnell	Obtain key from Mt. Gambier Tourist Information Centre.
<b>Gouldens</b>	CN	DENR	<b>General Diving:</b> Divers to contact DENR and notify of date and site to be dived. Divers must have the correct CDAA diving endorsement for the site. The onus of proof of CDAA status is on the diver and is provided by presentation of CDAA membership card or DENR checking the membership list supplied by CDAA. If there are problems with the diver not being a current financial member DENR will not be chasing the records officer to sort out the problem. This will be the responsibility of the diver. The diver must have signed an indemnity with DENR before access is permitted. <b>Training:</b> Cavern and Sinkhole. The Instructor is to notify DENR of the date the sites are needed and to forward signed indemnities from each student and their temporary card number. Cave and Penetration: The Instructor is to notify DENR of the date the sites are needed and is required to forward signed indemnities from each student and their membership number.
<b>2 Sisters</b>	CN	P.O. Box 1046	
<b>Fossil</b>	C	Mt Gambier 5290 Ph: (08) 8735 1177	
<b>Ela Elap One Tree</b>	S S	Mr. Peter Norman Private Bag 67, Mt Gambier 5290	By phone or drop in before diving. Ph: (08) 8738 5287
<b>Swim Through</b>	C	Valerie Earl PO Allendale 5291	Currently CLOSED pending new access arrangements.
<b>Piccaninnie Ponds</b>	S	DENR P.O. Box 1046, Mt Gambier 5290	Permit holders by phone. Be aware of delicate vegetation. Indemnity form to be completed. Ph: (08) 8735 1177 Faxed copies of cards no longer accepted when booking.
<b>Hells Hole Pines Mud Hole</b>	S P/C C	Primary Industries S.A. (Forestry) PO Box 162 Mt Gambier 5290	Contact Primary Industries S.A. (Forestry) by mail, phone or fax to arrange permit. Collect permit from Regional Office, Jubilee Hwy., Mount Gambier. No diving on total fire ban days. Forest Work Bans may be applied by PISA Forestry if forest fire danger is expected to reach extreme. Such bans also exclude the public from entering the forest. If in doubt, please check with Trevor Wynniat, although signs are generally erected at diving sites on such days to indicate such bans. Permits will ONLY be issued Mon-Fri between 8.30am-4.30pm. Ph: (08) 8724 2887 (08) 8724 7179. Please use this number for all bookings and enquiries etc. Fax: (08) 8724 2885 Email: wynniat.trevor@pi.sa.gov.au. Written confirmation required.
<b>Kilsby's</b>	S	Landowner leased to S.A. Police	Restricted access conditions apply - refer Guidelines Issue 54. Twin tanks, maximum of 40 metres depth. Write to: P.O. Box 77, Mount Gambier, 5290, six weeks prior. July 4/5, August 1/2, September 5/6. <b>No animals permitted.</b>
<b>Shaft</b>	S	Generally open one weekend a month L. Claridge P.O. Box 290 North Adelaide 5006	TIMETABLE FOR "THE SHAFT" GUIDES August 1/2, September 5/6, October 3/4, October 31/November 1 Nitrox as a diving mix is not allowed in the shaft. Deco mixes ATTACHED to a shot line are permissible.
<b>Ten Eighty Bullock Hole Black Hole</b>	S S S	Mr. Colin Traeger PO Box 12, Mt Gambier 5290 (087) 26 6215	<b>Sundays only</b> Mail Booking Form to Colin Traeger 2-6 weeks prior, stating names/qual. of all divers, and time slot. Please include stamped self addressed envelope. Closed October to November for shearing.



# CDAA 25<sup>TH</sup> ANNIVERSARY CELEBRATIONS

THE ASSOCIATION IS VERY PROUD TO ANNOUNCE THE WEEKEND OF OCTOBER 17-18, 1998 AS THE OFFICIAL CELEBRATION OF 25 YEARS OF CAVE DIVING IN AUSTRALIA.

PLEASE JOIN IN AND HELP US ALL CELEBRATE THIS HISTORIC OCCASION.

THE DIRECTORS ARE PROUD TO ANNOUNCE THAT AMERICAN CAVE EXPLORER, AND OWNER OF DIVE RITE, LAMAR HIRES, WILL BE THE KEYNOTE SPEAKER FOR THE DINNER PRESENTATION.

TO ENSURE YOUR SEAT AT HIS PRESENTATION, PLEASE BE SURE TO RETURN THE BOOKING FORM FOR THE DINNER & AUDIO-VISUAL PRESENTATION BELOW **BY JULY 30TH**.

## WEEKEND PROGRAM:

### SATURDAY OCTOBER 17TH

- 10:00 AM CDAA ANNUAL GENERAL MEETING  
12:30 PM **FREE** MEMBER BBQ LUNCH  
2:30 PM SIESTA TIME (OR GO DIVING!!)  
6:30 PM ANNIVERSARY DINNER INCLUDING PRESENTATION BY OUR INTERNATIONAL KEYNOTE SPEAKER, LAMAR HIRES

### SUNDAY OCTOBER 18TH

- 10:30 AM **FREE** SIDEMOUNTING & EQUIPMENT CONFIGURATION WORKSHOP PRESENTED BY INTERNATIONAL GUEST LAMAR HIRES  
1:30 PM HOME TIME !!! (OR MORE DIVING)

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**BOOKINGS CLOSE JULY 30TH**

**BOOKINGS CLOSE JULY 30TH**

NAME: \_\_\_\_\_ CDAA NO: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PLEASE SEND ME \_\_\_\_\_ TICKETS FOR THE ANNIVERSARY DINNER & AUDIO VISUAL PRESENTATION @ \$30 PER TICKET

PLEASE BOOK \_\_\_\_\_ SPACES AT THE **FREE** MEMBERS BBQ LUNCH (AFTER THE AGM ON SATURDAY)

PLEASE BOOK \_\_\_\_\_ SPACES AT THE **FREE** SUNDAY SIDEMOUNTING & EQUIPMENT CONFIGURATION WORKSHOP PRESENTED BY LAMAR HIRES

**PLEASE SEND FORM, WITH A STAMPED SELF ADDRESSED ENVELOPE TO:  
CDAA C/- 197 SMITH LANE, CRANBOURNE SOUTH, VIC. 3977**



## CDAА SITE ACCESS

SITE	LEVEL	OWNER	ACCESS DETAILS
<b>MOUNT GAMBIER - SOUTH AUSTRALIA (continued)</b>			
Max's Hole	C	Mr T. Edwards P.O. Box 1319 Mt Gambier 5290	Phone or mail 1 week prior to dive. Ph: (08) 8726 8277
Hann's cave	P	P & A Lasslett	Groups of four divers only apply in writing to Site Director. Limited groups will be allowed access over the summer months. The site is very delicate and therefore only limited access is available. Divers applying will be notified as to further access details. Please include a stamped self addressed envelope.
Engelbrechts - East - West	C P	Mt Gambier Council	Obtain key from Mt Gambier Tourist Information Centre. Access agreement must be signed prior to diving. Key must be returned by 5pm Sunday, 2 divers must sign out keys, all divers must sign in advising which groups they are diving with.
Three Sisters	P	Millicent Council	Contact Linda Claridge (Records' Officer). Access available for experienced Penetration divers only. Low profile or side mounted independent air systems required. Access agreement must be signed prior to diving. Please allow 4 weeks for indemnities to be processed.
Iddlebiddy (5L250)	P	Primary Industries S.A. (Forestry)	5L250 open 1st & 3rd weekend of every month. 5L290 open every weekend. Max. 4 divers per dive per day, 1 dive per day for each site. Only Penetration divers completed practical in-water cross-over. Bookings from Forestry Office - key from Lady Nelson. Contact Primary Industries SA (Forestry) by mail, phone or fax to arrange permit. Collect permit from Regional Office, Jubilee Hwy., Mt. Gambier. No diving on total fire ban days. Forest Work Bans may be applied by PISA Forestry if forest fire danger is expected to reach extreme. Such bans also exclude the public from entering the forest. If in doubt, please check with Trevor Wynniat or Forestry Office, although signs are generally erected at diving sites on such days to indicate such bans. Permits will ONLY be issued Mon-Fri between 8.30am-4.30pm. Ph: (08) 8724 2887. Please use this number for all bookings and enquiries etc. Fax: (08) 8724 2885 Email: wynniat.trevor@pi.sa.gov.au. Written confirmation required.
Nettle-Bed (5L290)	P	PO Box 162 Mt Gambier 5290	
McKay's Shaft	S		Contact Phil Argy at Mt. Gambier as access can be arranged.
Tank Cave	P	Mr. DYCEr	Tank Cave Access Manager: Phil Prust. Apply in writing at least 3 weeks in advance to; the Tank Cave Access Manager, 19 Broadmeadow Drive, Flagstaff Hill 5159. (This access may be cancelled at anytime, at the discretion of the landowner) NB: New divers must first apply for an application form to; Paul ARBON, PO Box 290 North Adelaide. (See Tank Cave Access Information - Issue No. 57).
Baker's Cave	C	Temporarily closed.	
<b>NULLARBOR - WESTERN AUSTRALIA</b>			
Cocklebidy	C	Regional Manager	Must apply for permission to dive at least 4 weeks in advance of trip. Ph: (05) 9841 7133.
Murra El Elevyn	P/C	C.A.L.M.	
Tommy Grahams	C	44 Serpentine Rd,	Apply in writing with at least four weeks notice to: Mr Graham Higgins, Department of Land Administration, PO Box 2222, MIDLAND, WA 6056. Include in the application:
Weebubbie	C	Albany 6330	• The dates of the intended visit(s) • Photocopies of CDAA certification cards for all of the party • A signed Indemnity Form for Weebubbie Cave (photocopy from original in Issue 61 of Guidelines). Please note that this arrangement is for Weebubbie only and access to other caves on the Nullarbor must follow existing access protocol. Also note that divers must supply their own ladders as the old ladder has been removed.
<b>WELLINGTON CAVES - N.S.W.</b>			
Limekiln (McCavity)	P/C	Both Penetration and Cave Level are being accepted for this cave depending on it's water level at the time. The cave has a restriction at the entrance which is underwater making it a Penetration Dive. During drought, the water level drops to form a small lake below the restriction allowing experienced Cave Divers access to this delicate cave.	
Water (Anticline)	C	Affected by high CO <sub>2</sub> levels during Summer/Autumn. Access arrangements are co-ordinated with an already commissioned research group. Contact Greg Ryan (02) 9351 4809 w, (02) 9743 4157 h, gregr@cs.su.oz.au.	



## Nuno Gomes

### New world record holder in deep diving

In August last year, South African Nuno Gomes set a new world record in deep diving. When Gomes reached the bottom of the huge cave where the record dive took place, he was 282 meters deep. After more than twelve hours in the water he reached the surface again, exhausted. He had used 54,730 litres of eight different gas mixtures.

On several occasions, Gomes had familiarized himself with the huge cave in the South African Boesmansgat. The cave is one of the three deepest water-filled caves in the world and many diving expeditions had tried to reach the bottom before, but failed. Deon Dreyer, a young diver who made an attempt in 1995 disappeared in the cave's darkness and was never found.

In 1994 Gomes did two dives in the cave (230 and 252 meters). After both of these dives he had problems with decompression sickness and his medical advisor, Sean French began to doubt Gomes' possibilities for reaching the bottom.

Nuno Gomes prepared himself systematically for the big dive over the next two years. He spent months in physical training and acquired the best imaginable equipment, including a suit and regulator from Poseidon. He also assembled a team of experienced cave divers

which would assist him in his record attempt.

The week before the record dive was primarily spent transporting the necessary equipment to the cave. This was heavy work since Gomes and his helpers were forced to carry everything several hundred meters over a stony terrain. The team also made several dives to secure the rope and fasten tanks at the decompression points.

On the morning of August 23rd, 1995, Gomes sank into the dark water with 100 kilos of tanks hanging around his body. After several hours, when Gomes started his ascent again, he was met by his first assistant diver at a depth of 100 meters. Craig Kahn could verify that Gomes had reached the bottom and was in good shape.

Gomes stopped at two more points for decompression on the way up. When he finally reached the surface after more than twelve hours in the water, he observed: - I have reached my limit. I am not going to do this again.

But it seems as though he has changed his mind. It was recently made known that Nuno Gomes will perform another deep dive in Boesmansgat - this time to an even greater depth...



<http://artemis.eng.monash.edu.au/CDAA/>

## A Scenario

The scenario below is provided by way of an example of how stress-test training and emergency scenario practice facilitates the ability to stay calm under pressure, which on this occasion proved invaluable in the safe egress from one particular cave dive ...

Coming to the conclusion of a 50 minute penetration dive, divers A, B and C congregated at the exit squeeze of a particular penetration dive site in Mount Gambier. The divers hovered only five metres from the entry/exit lake exchanging signals in preparation for a safe exit. It is necessary to note that this particular cave has a significant squeeze at its opening, which although not difficult to negotiate being well worn from diving traffic, does constitute a significant impediment in terms of a single file movement being required.

Following a standard series of rope signals divers A and B exited the cave with each diver taking about one to two minutes.

As Murphy's law would have it just as diver B was somewhere in the squeeze on his way out, diver C had an out of air emergency. Without room for diver B to turn to assist (even if he could have been made aware of the situation) diver C faced a difficult situation as he realised that he had two 100cft tanks on his back with about 100bar in each and no regulators within reach to access the air.

What occurred? Why? How did diver C address the situation?

The circumstances that led to the rather unusual scenario of both regulators from a twin independent tank set-up being unavailable when needed were a combination of diver error and chance.

On the return journey, in the last part of the cave, diver C had started rearranging the manner in which he would next connect his regulators and in changing regulators inadvertently forgot to return one of his regulators to its original (and familiar) position.

After diver B had commenced his exit, diver C

went to change regulators by dropping one out of his mouth and then grabbing for the second regulator. The diver reached down and found his scuba feed inflator - no good, no big deal. He reached again and found a pressure gauge - no good, no big deal.

Reaching back for the regulator he had just relinquished he found his right side pressure gauge - no good, could do with a breath now. Reaching back and forth, try as he might, diver C could not locate either of his regulators.

What had happened was that the bungee cord which connected the regulator diver C last had control of had caught on a rock as he let it go. As the cord stretched the regulator was flung over diver C's tanks of which he was unaware.

After about thirty seconds of grabbing hose after hose with no regulator, diver C was becoming pretty desperate for a breath and entertained the idea of making a break for the exit through the squeeze. In the panic and exertion of trying to get out I doubt whether diver C would have made it.

Instead diver C recalled a desperate move he had previously read about (and practised with a buddy on previous cave dives) whereby he grabbed his scuba feed inflator, depressed the inflate and exhaust buttons simultaneously allowing air to flow directly out of the exhaust mouthpiece. This enabled diver C to catch a breath, albeit wet! Actually it enabled diver C to catch 3 or 4 breaths by pressing both inflate/exhaust buttons and by breathing in and out of this wings.

As one would expect, the above use of the inflator caused diver C's wings to inflate quite rapidly lifting him to the roof of the cave. Pinned to the roof on his left side the second missing regulator dangled into view under diver C's left arm where he had clipped it while playing with his set-up and forgotten about it.

Spending a solid minute regaining his composure sucking on the now relocated missing regulator, diver C eventually negotiated the squeeze and exited the cave.



In terms of lessons to be learned from the experience:

1. The accidental loss of one regulator by reason of a fluke occurrence (bungee cord catching on a rock combined with enough forward momentum to actually release the neck strap connection) should not have caused any problems with a twin regulator set-up, save only for the diver's error in playing with his familiar regulator set-up while submerged.

2. Being able to control panic (which sets in VERY quickly when a diver really needs air) by remaining calm and assessing all options for what they will achieve is absolutely critical. There is little doubt that once diver C had committed to trying to get out through the squeeze thoughts of locating his scuba air sources would have gone out the window in

favour of clawing the five meters to the exit.

3. Practising emergency air procedures, such as obtaining air from a scuba feed inflator, can be invaluable. Had diver C not seen his missing regulator appear under his arm when pinned against the roof in the circumstances, hurried tugs of the signal rope would have alerted the divers' buddies in the entrance/exit lake of a problem. Although his wings were full, the overhead environment meant diver C would have simply remained pinned until one of this buddies arrived. While I don't guarantee the quality of the air in terms of increasing CO2 build-up and the odd splash of water, you would be quite surprised for how long you can potentially breath air out of a scuba feed.

Provided by way of interest.

# REMOTE AREA FIRST AID COURSE

An opportunity exists for interested members to participate in an accredited Level 2 First Aid Course, specialising in Remote Area & Expedition First Aid.

The course will be run in Melbourne, and for more details, please contact Tony Davis on 0418 370 941.

## National Directors Report

### Photos wanted

I would like to produce a multi media history of the last 25 years of the CDAA to be shown at the 25th Anniversary celebrations. In order to do this I need your help. If you have any slides, prints, negatives, dating back to the beginning and right through to the present I would appreciate borrowing them long enough to scan them into a computer. I also need any humorous stories, anecdotes or whatever you have to make this project work. You can send them to Post Office Box 5233, Rockingham Beach WA 6168.

### Research and Mapping Group

Research has been an area that has fallen by the wayside in recent years, despite the fact that there are still a number of projects worthy of some work. Our only current mapping project is Tank cave. It is our intention to set up a new Research Team. This team will be charged with a number of different responsibilities. This will include completing the mapping of some existing sites, investigating and mapping some new sites to the CDAA and training new people in the techniques of exploration and mapping. Our current Site Access Director Gary Barclay will be taking on the role of Research Team Manager. Anyone interested in being part of this new project should contact Gary on (03) 5565 8793, Fax: (03) 5565 8118 Or email: garinda@tpgi.com.au

### Gofer Broke 98

I would like to offer our thanks and support to John Dalla-Zuanna for initiating this project. It is the commitment of people like John that helps make our association what it is. It is easy to get disheartened when you hear about the bad things a few members have done, however the reality is that the vast majority of our members are very supportive of our association and put a lot of their time and energy into projects such as this. I would also like to thank Trevor Wynnaiat (PISA) for his support of this project. Keep up the good work everyone. Steve Sturgeon  
National Director

I would like to start off by congratulating the people who successfully completed the Easter penetration course. I would also like to thank Barrie Heard - Course Co-ordinator, John Dalla-Zuanna, Glen Harrison and Linda Claridge - instructors who put so much time and effort into it. Of the twelve candidates that started the course, 8 passed. Lack of experience was the clearly the main factor effecting people's performance on course. I would urge people not to fast track towards Penetration level, rather get out there and do a wide range of Cave level dives in a variety of sites. These dives should include trips to the Nullarbor, NSW and overseas. The next penetration course is advertised elsewhere in this issue. For those people who were unsuccessful last time, I would like to offer my encouragement and advise you to get into the water as much as possible before seeing us again in October for another crack at it.

### Course Materials

I would like to take this opportunity to thank Peter Grills for the excellent job he has done in producing the instructor and student materials. Peter is just one of the many dedicated, hard working people behind the scenes without whom the CDAA would not function.

### Records

The member and instructor records have recently been combined and are being managed by our Records Officer - Linda Claridge. This move has been taken to improve the co-ordination of the records. Very special thanks go to Sue Riddle for the great job she has done in the past with the Instructor records. We have recently upgraded the records Officer's computer system to speed up the record s system.

### 25th Anniversary Celebrations

Arrangements for this event are well under way. The event is to be held at the International Motor Inn. Plans include holding the AGM in the morning, followed by a Bar-B-Q lunch, Equipment workshop in the afternoon. In the evening the Commemorative Dinner will include a pre dinner address, and international keynote speakers. This 25th Anniversary is an event not to be missed.



# BUSINESS DIRECTORS REPORT

(as at 18 May 1998)

I can report that the Treasurer, Andrew Seifried has now established a computerised accounting system, utilising MYOB accounting software. This will enable the timely and accurate production of management reports, quarterly

reporting in Guidelines and the production of annual financial statements. The Associations expenditure position as at 30 April 1998 can be summarised as follows:

<b>CDAА PROPOSED BUDGET 1998/99 AND 1997/98 ACTUAL EXPENDITURE TO 30 April 1998</b>			
	<b>1997/98 BUDGET</b>	<b>97/98 ACTUAL</b>	<b>1998/99 BUDGET</b>
<b>NATIONAL DIRECTOR</b>	<b>\$5,900.00</b>	<b>\$6,802.40</b>	<b>\$11,000.00 TOTAL</b>
General and Minor Projects		\$230.50	\$2,500.00
Telephone		\$231.90	
Insurance		\$3,390.00	\$8,500.00
Instruction Materials		\$1,950.00	
<b>BUSINESS DIRECTOR</b>	<b>\$6,800.00</b>	<b>\$4,550.89</b>	<b>\$5,500.00 TOTAL</b>
General and Minor Projects	\$756.93	\$1,500.00	
Postage	\$30.40		
Telephone	\$70.27		
Accounting Software	\$421.18		
Constitution	\$1,087.00		
Regulations	-	\$500.00	
Annual General Meeting	\$1,385.46	\$2,000.00	
Directors Meetings	\$799.65	\$1,500.00	
<b>STANDARDS DIRECTOR</b>	<b>\$4,000.00</b>	<b>\$1,528.70</b>	<b>\$4,000.00 TOTAL</b>
General and Minor Projects		\$490.40	\$2,000.00
Postage		\$161.00	
Telephone		\$51.63	
Instructor Workshops		\$375.40	\$1,000.00
State Meetings		\$450.27	\$1,000.00
<b>PUBLICATIONS DIRECTOR</b>	<b>\$22,400.00</b>	<b>\$18,611.35</b>	<b>\$27,000.00</b>
General and Minor Projects		\$91.83	\$3,500.00
Postage		\$721.73	
Telephone		\$688.29	
Printing & Stationery		\$327.65	
CDAА products insurance		\$255.65	
Records System			\$1,500.00
Guidelines		\$15,332.94	\$16,500.00
Upgrade - Computer Hardware		\$943.26	\$1,000.00
CDAА 25th Year Activities		\$250.00	\$4,500.00
<b>SITE DIRECTOR</b>	<b>\$2,000.00</b>	<b>\$775.02</b>	<b>\$3,600.00 TOTAL</b>
General and Minor Projects		\$70.00	\$1,500.00
Postage		\$360.87	
Telephone		\$344.15	
Research and Mapping			\$2,000.00
<b>TOTAL</b>	<b>\$41,100.00</b>	<b>\$31,268.36</b>	<b>\$51,000.00</b>

## Treasurer's Report

I am happy to report that the finances of the Association are in sound shape. The level of expenses have to date been contained to an amount significantly below 1996/97 amounts. I would like to thank the directorate and other officers of the Association for their cooperation, which has made my task as Treasurer much easier.

I would like to point out however, that there are financial records relating to the initial part of this financial year, (before I began as Treasurer), that I will require in order to complete the accounts.

## 1998/99 Proposed Budget

There are no membership fee increases proposed for 1998/99. The 1998/9 proposed budget is based on maintaining current revenue levels. Whilst there are a number of minor ins and outs that generally negate each other, the key initiatives for 1998/99 include the recognition of the importance of research and mapping and the celebration of the Associations 25th year anniversary.

In addition, a requirement by state and local governments for an increase in public liability cover will result in premiums increasing significantly next year. The numbers have not been finalised at this time, however a notional budget has been established.

## Credit Cards

To facilitate prompt and convenient payment, credit cards will now be accepted for the payment of fees and CDAА products and materials. At this time merchant fees and

related costs will not be passed on, however all charges relating to failed transactions must be paid before a membership is processed or materials and products are issued. A revised renewal notice and products order form can be found in this issue of Guidelines.

## Asset Management

In my last report, issue 63, I indicated that the monitoring and control of CDAА assets was not satisfactory. Since then I have received several comments indicating the existence of assets not recorded on the depreciation schedule which forms a part of the Association accounts. If you are in possession of any material which belongs to the Association (typically computing equipment and books, but also including a regulator donated for fund raising purposes) please contact me and I will make arrangements for collection.

In the meantime Andrew and I will commence the process of compiling an asset register and I will be pursuing all matters brought to my attention.

## Constitution

It is the intention of the National Committee to propose amendments to the Constitution. The proposal to be put to members seeks to increase the term of Office Bearers to two years and to provide for the rotation of elections for office bearer positions. That is the election of two Office Bearers on one year and the remaining three on the subsequent year. This will help to address problems relating to continuity.

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INTERNATIONAL GUEST SPEAKER ALL  
FOR ONLY \$30.  
MEMBERS VALUE AT THE  
ANNIVERSARY WEEKEND.  
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## GUIDELINES DEADLINES

If you would like to contribute to Guidelines, you should note the following deadlines for submission of materials:

Deadline	for publication
7th of November	December
21st February	March
21st May	June
8th August	September

## NOTICE FOR INSTRUCTORS

Procedure for ordering student packs:

1. Check you are insured & financial.
2. Send order & cheque.
3. Allow 14 days from when the order is received - so allow plenty of time.
4. No student kits will be returned
5. If you need to phone for more information use (02) 4950 6262 between 8am and 12 midday (NSW times).  
\* Messages left on my mobile from instructors will not be returned.
6. Please do not pass my number on to dive shops - you should deal with them not me.

Peter Grills 1780  
Instructor Materials Officer

## ACTIVE CDAA INSTRUCTORS

Any Instructor wishing material contact - (02) 4950 6262 (8am - 12 midday)

STANDARDS DIRECTOR:

Glen Harrison  
Telephone: 0418 846 602  
(email) harrison.glen@saugov.sa.gov.au

INSTRUCTOR	CN	S	C	STATE	PHONE	INSTRUCTOR	CN	S	C	STATE	PHONE
<b>NSW &amp; ACT</b>						<b>VICTORIA</b>					
Nick Jones	•	•		ACT	015 851 313 m	Stephen Arnel	•	•	•	VIC	(055) 26 5230 h
Peter Grills	•	•		NSW	(02) 4950 6262 (8am - 12 midday)	Gary Barclay	•	•		VIC	(03) 5565 8793 h
Gary Norgard	•	•		NSW	(049) 68 4588 h	Jane Bowman	•			VIC	(03) 9579 2600 w
Andrew Robertson	•	•		NSW	018 412 563 m	Stan Bugg	•	•	•	VIC	(03) 9379 8791 h
Des Walters	•	•	•	NSW	(060) 411 405 w	Linda Claridge	•	•		VIC	(03) 5565 8793 H
<b>SOUTH AUSTRALIA</b>						Brian Cornell	•	•	•	VIC	(059) 85 2514 h
Greg Bulling	•	•	•	SA	014 477 430 m (08) 8265 4978 h	John Dalla - Zuanna	•	•	•	VIC	015 887 060 m
Glen Harrison	•	•	•	SA	0414 946 602 m (08) 8386 3237 h	Chris Edwards	•			VIC	(03) 9579 4352 h
Max Marriot	•	•	•	SA	(08) 8447 3360 h	Barry Heard	•	•	•	VIC	(056) 27 6474 h 019 401 469 m
Richard Megaw	•	•	•	SA	(08) 8344 1733 h	Ian Lewis	•	•	•	VIC	015 284 051 m
Richard McDonald	•	•	•	SA	(08) 8295 4140 h/w	Warrick McDonald	•	•	•	VIC	(03) 9579 2600 w
<b>WESTERN AUSTRALIA</b>						Bob Wealthy	•	•	•	VIC	(056) 858 338 h
Marilyn Boydell	•	•		WA	(09) 349 5646 h						
Gary Bush	•	•	•	WA	0417 957 620 m						
Steve Sturgeon	•	•	•	WA	(08) 9527 7667 (h/w) (08) 9349 5646 h						

## CDAA suspensions

Jarn Hodgson and David Apperley have been placed under indefinite suspension from the CDAA for serious breaches of site access regulations at Nettlebed Cave. Hodgson and Apperley should not be accorded rights of membership, even on presentation of a current CDAA membership card.

Steve Sturgeon  
National Director

## Penetration course - October 1998

CDAA members interested in participating in the last penetration course for '98 should contact the course coordinator Steve Sturgeon at: PO Box 5233, Rockingham Beach, WA 6168

Ph. 08 9527 7667, Fax 08 9528 6995, Mobile 0418 940 143, Email cdaa@nitrox.com.au.

The course will be conducted over 2 weekends in Mount Gambier:

- the 3rd, 4th, 5th; and
- the 10th, 11th October 1998.

Steve Sturgeon  
National Director

## Access to CDAA sites

Concern has been raised by several Landowners regarding unqualified and uninsured people entering CDAA sites. In order to clarify the situation the following regulation applies in all instances. Only suitably qualified, current CDAA members are allowed access into sites where physical boundaries such as fences or gates exist. This means, for example, that only current CDAA members who hold sinkhole rating are allowed

access beyond the fence lines which specifically surround holes on Barnoolut property. Also, only penetration rated dives are allowed beyond the Englebrechts West gate unless other members of the party are on a Life Line guided tour.

Glen Harrison  
Standards Director

## Engelbrechts Cave

Lifeline is a voluntary organisation raising funds for the Lifeline crisis line. CDAA members diving Engelbrechts Cave are able to use water, toilet and lighting facilities and therefore contribute to Lifeline's overheads. Lifeline have put a submission to the CDAA requesting a contribution to help cover the cost of these utilities.

The CDAA and Lifeline have worked together to resolve this issue, and we have now agreed to implement an 'honours box' system to recoup the cost of facilities used by CDAA members diving the Eastern and the Western side. Please show your appreciation of these services by giving generously! If this system fails to raise sufficient funds to cover costs, it is likely that diving fees will be charged. The honours box is in the lighting box at the top of the steps.

Gary Barclay  
Site Access Director

## Directors' meeting

Members who would like specific issues to be discussed at the next directors' meeting over the AGM weekend should contact the relevant director by end of September.

Steve Sturgeon  
National Director

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**MEMBERS VALUE AT THE ANNIVERSARY WEEKEND.**  
**BOOK NOW TO GET YOUR SEATS**



## CDAA NOTICES

### Instructor records

As of now Linda Claridge will hold all instructor records (as well as members' records). Many thanks to Sue Riddle for all her work over the past years. Please note that it is your responsibility to ensure that your details are accurate and to contact Linda, if they are not!

Steve Sturgeon  
National Director

### CDAA products

I believe I got in touch with all those who have contacted me recently, but apologies to all those who have ordered clothes and not received them yet. I am in the process of designing and ordering a new line of CDAA clothes in time for the CDAA anniversary and these will be available very soon.

We will begin with Polo shirts, T shirts and Windcheaters and that later Polar Fleece will be added to the menu.

Chris Edwards  
CDAA Products Officer

### 25-year CDAA anniversary

I would like to put together a history presentation for the 25-year anniversary celebration and am looking for the loan of any

interesting photos/slides etc that I could use. I am interested in anything that shows a history of the CDAA and Cave Diving. The photos need to be sent to me and I will return them to owners after scanning. If you have any photos/slides to contribute, you can contact me on (08) 9527 7667 (w), 0418 940 143 (m) or email me on [cdaa@nitrox.com.au](mailto:cdaa@nitrox.com.au).

Steve Sturgeon  
National Director

### CDAA Research and Mapping Group

A new CDAA Research Group has now been set up, headed by Gary Barclay (see Director's report for more details). Please contact Gary if you would like to be part of this new group on 03 5565 87933 (h) or [garinda@tpgi.com.au](mailto:garinda@tpgi.com.au).

Steve Sturgeon  
National Director

### Guidelines

Apologies to Warrick McDonald and all those members of AB Ocean Divers who did not receive appropriate thanks in the last issue of Guidelines - until very recently, Guidelines has been packed on AB's premises & AB divers have on many occasions lent a helping hand.

Sabine Schnittger  
Publications and Products Director

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## TRADING POST

### FOR SALE

Boss Double Bladder  
Wings/BC, Brand new  
condition, Never used,  
\$600 neg.

Ken Smith  
(08) 8271 7064  
AH (08) 8271 7064  
[k.smith@bigpond.com](mailto:k.smith@bigpond.com)

### FOR SALE

Viking Sport  
Size 2  
Drysuit  
excellent condition  
\$750.

Trevor Alldritt  
(08) 8250 1483

### Need a Generator for your Nullarbor Trip

650 watt Honda generator  
available for hire.

Ideal for Nullarbor trips  
Compact, reliable and very  
economical  
Phone Victor  
0417 392 843

### FOR SALE

Two 63 cubic ft  
aluminium tanks,  
with stainless  
steel bands.  
\$320 the lot.

Phone  
Clive Wheeler  
CDAA 2409  
8298 5952



# TRADING POST

**INTERNATIONAL  
KEYNOTE  
SPEAKER LAMAR  
HIRES AT THE  
ANNIVERSARY  
DINNER.  
DON'T MISS OUT.  
BOOK EARLY**

## FOR SALE

Cave/tech diving light,  
all marine anodised  
aluminium, 12v 15amp  
hour battery, 100w,  
50w or 30 watt bulb,  
compact head, switch on  
battery pack, charger,  
as new \$850.

Neil Vincent  
(02) 971 798  
email neilv@ozemail.com.au

**DON'T FORGET TO RETURN  
YOUR ANNIVERSARY BOOKING  
FORM BY AUGUST 15th SEE  
YOU THERE!!!**

## A Gofer's Weekend

On Saturday 23rd May, I arrived at Lady Nelson carpark to participate in the Gofer Broke '98 weekend of activities!! There about 15 people (including latecomers) gathered to hear John Dalla-Zuanna allocate various duties to be performed at various sites around the Mount.

The sites were Pines, Mudhole, Nettlebed, Fossils, Gouldens and Caveview - "The Shaft".

So small groups using the "divide and conquer" technique, set out to have a day of fun and adventure!

One group went to Mr. Ashby's property and cut the hedge and did some general cleaning with the whipper snipper. A few others went to Gouldens to repair the rail on the landing to find that it had already been done! So undaunted, the group collected all the visible rubbish and snipped grass and weed down the grading.

The Mudhole/Nettlebed team did a fantastic job of cutting steps in the path leading to Nettlebed thus making the access easier and less slippery. This was followed with placing stone blocks into Mudhole, allowing for a less silty entrance, next time you're down that way.

Following this a further clean-out of the logs and debris from Pines, now gives a great view of the entrance to the back passage from the landing - it now looks spectacular!

Finally, yours truly and John Dalla-Zuanna opted for Fossils, with the entire top area, inside the fenceline being whipper snipped and the access paths inside the sink cleared also. Add to this nearly a trailer load of old broken bottles, and other rubbish was removed from the dry areas around the hole.

The day was interspersed by the usual downpours and sunshine. Both the Borderwatch Newspaper and SE8 TV attended various sites, making a story out of the event.

So ... standing in this the 25th year of the C.D.A.A., I think the group made a visible contribution to our shared environment, with all these jobs completed successfully.

We all ended up at Phil's place, Blink Bonnie, where a great B.B.Q. Dinner was created with the generous donation (and moral, should I say spiritual support) from the "Limestone Cowboys" (NSW members), thanks guys!!

We ate and drank and those that did the fire eating got an extra blast out of the evening.

I don't recall everybody's name, but it was great being involved, and I hear there will be other weekends coming up soon, (eg. Hell's Hole). Looking forward to it, see you there.

Ross Walker  
CDAA1904

**To all CDAA instructors wishing  
to advertise proposed CDAA  
courses -  
Please contact the Editor for  
FREE advertising space!**



## A Gofer's Weekend



## An expedition with a difference

### The Cave

The Schwarzbach, or Golling waterfall is located near the small town of Golling, near Salzburg in Austria. It was discovered and opened to the public in 1798 by the Count of Schwarzenberg. Access to the waterfall is arduous and originally extensive road building had to be undertaken. The entrance to the cave lies at 580 m and is one of the most impressive giant karst springs in Austria. A small 5m wide stream issues from the 1m high entrance; just below it the waterfall forms two steps which are almost 100m high. Flow rates of the Schwarzbach Cave vary between 20 and 20,000 l/sec. After long dry periods, particularly from January until the beginning of March, the stream vanishes entirely. Water temperatures remain at 5-5.5° throughout the year.

The German cave diving pioneer Joachim Hasenmayer was the first to really penetrate into the cave in 1973. He dived 170m into the cave to a depth of 50m, and returned to the small lake after 25mins and a short decompression stop. In subsequent years no diving took place for a long time, until a Swiss expedition reached a formidable depth of 76m, around 230m from the entrance. One of the findings of these divers was that Jochen Hasenmayer's original maps, located in the Salzburg 'Cave book' contained some errors. According to the Swiss, the cave is not as deep as Hasenmayer had thought.

### The plan

Since the lake is difficult to reach and located in a source protected area, permission for access is very difficult to obtain. At any rate, a simple permit would not suffice, since it is only valid for a specific day. Permits are also required for all preparatory and hauling trips, each of these also only valid for one day.

It is bad luck, if diving is not possible at the appointed time (e.g. for reasons of bad weather, illness etc). It was only because we were on an 'official' mission from the Institute of Microbiology and Genetics in Vienna that we managed to obtain a licence to dive in the

first place. Our mission was to sample water, rocks and sediments at different depths. The hope was to find new micro-organisms.

Our plan was also to produce a documentary about the expedition. Since I know a German cameraman who has previously helped me film a cave diving story, staffing was not a problem. This is when the difficulties started - how to transport almost 500 kg of equipment to the dive site. We discussed this with Mr Rettenbacher, the mayor of Golling. He assured us that there would be no problems - voluntary firefighters of Golling would gladly help us. All was well, I thought.

One week before the expedition we finally received confirmation that all necessary permits would be granted. The first dive took place on January 23rd. The conditions were excellent - fantastic weather, hardly any current, great visibility in excess of 15m. I dived alone on Nitrox around 80m into the system to a depth of 22m. On Sunday, March 1st I dived again, accompanied by two friends. The aim was to reach the end of the Goellgang, a tunnel leading off the first rock chamber, and to take some photos. Conditions were even better than on the first day. The current was a little stronger, but as a result all loose sediment quickly drifted away and the visibility improved. We reached the end of the Goelltunnel, around 110m from the entrance and were convinced that the planned dive to 80m would be a great success. When we looked at the pictures two days later, we were jubilant.

Friday, the 6th of March was our target date. Everything was prepared - the film team, equipment, permits etc. Bad luck set in on Wednesday the 4th. The weather turned warm, unbelievably so, at 18°C. This would not have mattered, if it hadn't snowed on Monday and Tuesday. The snow melted, all of it.

Next, on Thursday, I received a call from the municipality of Golling to tell me that there might be problems with the permit after all. The reason, I was told, was that permits could only be granted for research purposes. Since



the expedition did have a research purpose I could not understand what the problem might be. After many telephone conversations with officials, I realised that my original documents had not been forwarded to the University of Vienna for verification. In the end, and after 4pm I finally received permission to dive. When we arrived on Friday, it started to rain. Normally, the waterfall is not active at that time of year, but at the weekend it was truly magnificent. This was great for the tourists, but not for diving. A real catastrophe, in fact. We decided to try anyway, to make the best of our efforts.

So we carried the 500kg of equipment (including filming gear) up the mountain. Without the support of the fire department, the task of getting everything up in a reasonable time would have been an impossible one. Five hours later, the gear was within 10m of the small cave. Now we had to secure the last few meters to the site with ropes, since there was a real risk of loosing your grip in the waterfall and sliding down the first 50m step. 2.5 hours later we were finally in the water.

After we had entered the water, cameraman Christian suddenly discovered a problem with the lighting - half of the strobes did not work. Michael, my support diver, and I were slowly getting cold. After 15 minutes, Christian decided to film with only 50% of his lighting. We started the dive.

#### The dive

Slowly we dived down the slope. After 30m the tunnel ended in a large chamber strewn with boulders and mud. Progress was difficult and slow because of the strong current. From this first rock chamber we passed through a window into the Goelltunnel. The current

significantly gained in strength through the restriction, and progress became almost impossible. Four tanks on my back did not exactly help.

The 3m wide by 4m high tunnel headed westwards and featured the occasional big rocks on the floor. As a result of the hard swim I had already used up more air than planned. Shortly before the end of the Goelltunnel, a 2m high openings led to the downward sloping 'staircase'. After a 120m swim to a depth of 28m the visibility had deteriorated to only around 50cm. I opened one of the containers from the University of Vienna and filled it. I was thinking about turning back. I could calculate the remaining gas, and it was starting to concern me. We called the dive, greatly disappointed. On top of everything, the return swim took the form of a forced exit with the current pushing me out at a roaring pace. Reeling in became a real problem.

After 20min we were back in the rock chamber. Visibility was not too bad here. Christian signalled that he wanted to swim around a little, so he'd get some more footage. I discovered some crystals on the floor of the cave, an interesting find. Otherwise, the only important conclusion of this sad episode is that Hasenmayer's measurements were, after all, correct, and that it was the Swiss expedition who had made the mistakes.

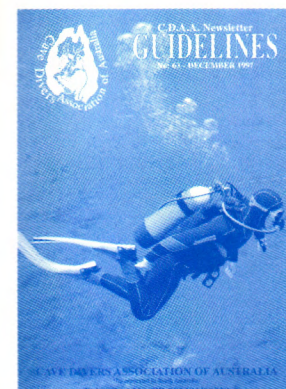
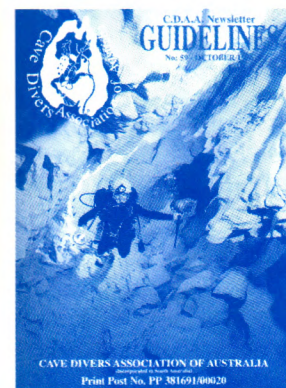
We'll try again in January 1998. Perhaps we'll have better luck then.

This expedition was sponsored by AGFA and Poseidon.

Written by Marcus Kalmar

Translated by Sabine Schnittger

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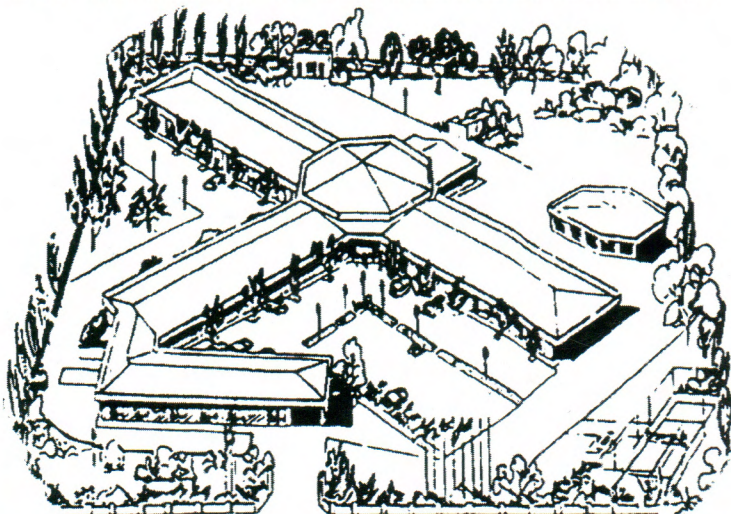
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