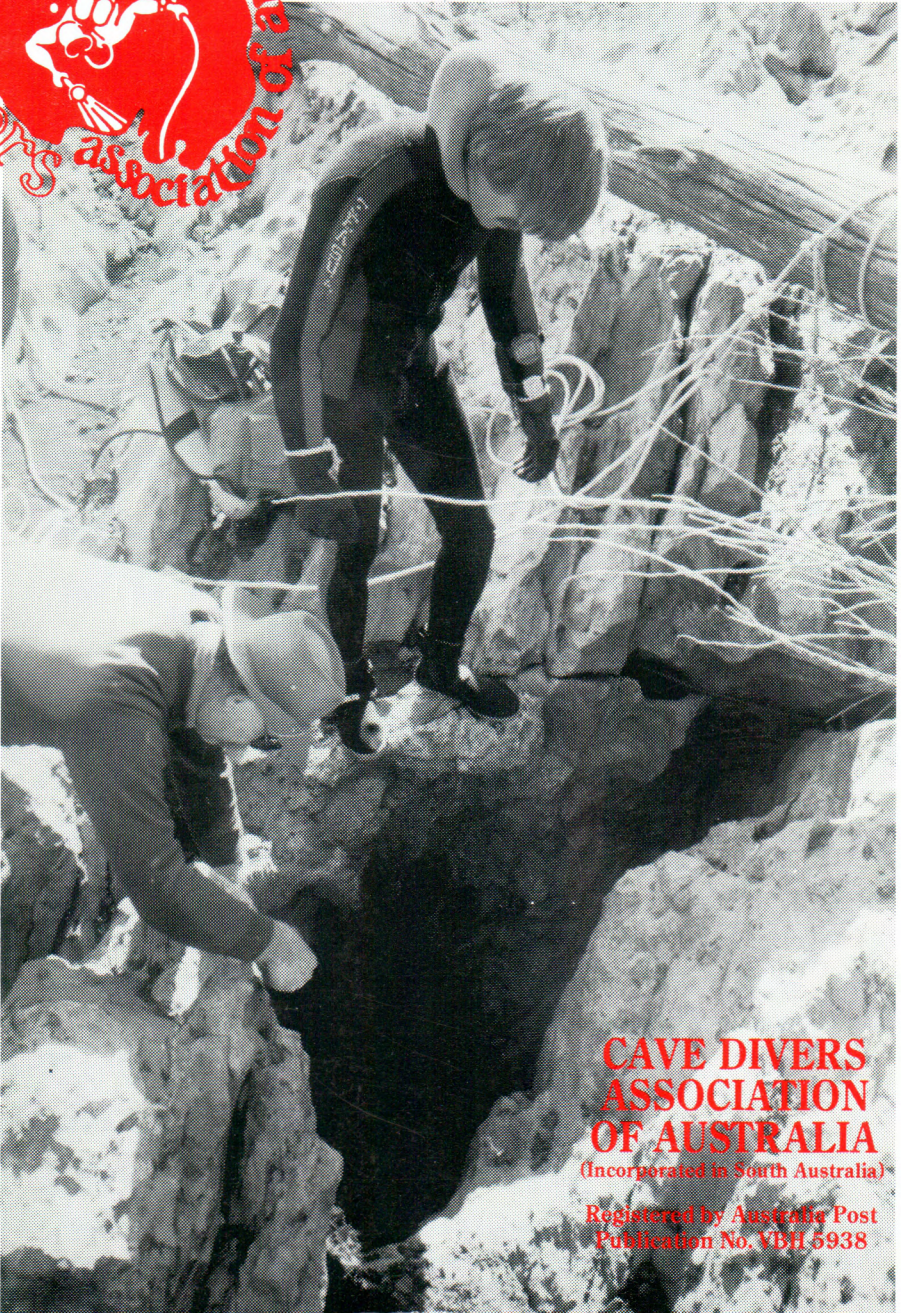




C.D.A.A. Newsletter

# GUIDELINES

No: 44 - JULY 1992



**CAVE DIVERS  
ASSOCIATION  
OF AUSTRALIA**  
(Incorporated in South Australia)

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Cave Divers Association of Australia  
P.O. Box 290, North Adelaide, 5006

**Front Cover:** Steve Arnel preparing to descend into 30m pot hole in middle of Lake Burrinjuck. See pages 8-9 for further details.

GUIDELINES is the newsletter of the Cave Divers Association of Australia, published four times a year - January, April, July and October. All articles for the following issue are to be sent to the Editor, P.O. Box 290, North Adelaide, SA 5006, prior to **10th September, 1992**. Articles and information may be reproduced without prior permission provided reprints are credited to the authors and GUIDELINES. Private ads for caving and diving equipment may be advertised free. 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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## EDITORIAL

Greetings people. By the time you are reading this, the CDAA's first venture into the area of lecture tours will be over - Sheck Exley will be back in the States diving in a cave somewhere, and for those of you who made the effort to come along, hopefully the memory will be good.

The turnout at all venues was great, and we also made a small profit - cementing the feeling that I will endeavour to organise a similar event next year.

A big thankyou must go to the people who helped with the organisation - I won't mention all the names, but without their help the tour wouldn't have happened. Thanks gang!

On a different note, this will be the last time you see my name at the bottom of the editorial. After editing 10 issues of Guidelines, I feel it is time to pass the job onto someone else. With my work commitments increasing and also co-ordinating the Business Directorate, time is precious, and I'm finding that there's not enough hours in the day anymore.

I have been lucky enough to be involved from day one with the new format of what you're now reading - and what I consider to be the finest magazine of its type anywhere. All too often the praise goes to the editor, but without a good team to help, the job would have been impossible. Without our publisher Ruth Mann, the format could have been very different, and as Ruth is an active Cave Diver and interested member, the quality has remained A1. She has put up with my constant phone calls day and night, collated all the information and transformed it into a top class publication. Ruth - thank-you.

A big thank-you must also go to the people and businesses that have supported us with advertising. Without their generous support the budget simply didn't allow for the quality of publication we have today.

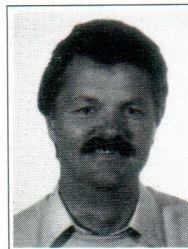
Our new editor is not new to the Association. After 6 months off, Pete Girdler has taken on the job, and I'm sure will continue to produce a quality magazine every issue.

We still need articles constantly, so please, those of you who have had an interesting trip or dive somewhere, contact Pete and he will take it from there.

Again, thank-you to all who have helped me over the past 2½ years - I have enjoyed the experience immensely, and good luck to Pete.

*Tony Davis*

## NOTE FROM NATIONAL DIRECTOR



Quietly behind the scenes, much National-based co-ordinating activity has been occurring between the CDAA and other "cave-interested" bodies. The role of the caving and cave diving is now part of a much larger picture. Andy's article submitted here outlines parallel directions of his organisation, with which the CDAA is beginning to discuss policies of common interest.

## CDAA, ACKMA AND GST?

*Andy Spate,  
President, Australasian Cave and Karst Management Association*

The Australian craze for acronyms continues - we are reputed to be the worst (best) country in the world for abbreviating everything. Most readers of Guidelines will recognise what CDAA stands for; most Australians can make a stab at what GST

means; but what about ACKMA?

ACKMA, the Australasian Cave and Karst Management Association, was founded in 1987 as a group to promote interest in, and proper conservation of,

*Continued on next page*



Australian and New Zealand caves and karst.

ACKMA is not only a group of cave managers and national park rangers - there are very many "dry" cavers and caving societies as members (although a 35 year caving experience leads me to believe that we had better be careful about dry cavers - the demon drink seems to have wetted some!) as well as academics. Hopefully we can attract some "wet" cavers from CDA to our membership. We also have cavers and cave managers from well beyond the shores of En Zed and Oz.

ACKMA, which was formed in 1987, grew from the Cave Tourism and Management Conferences organised by ASF (the Australian Speleological Federation Incorporated to you non-acronym adjusted diehards). However, it became increasingly evident that cave managers, rangers, scientists and others needed a society which could represent them professionally - as a group interested in caves and karst resources themselves rather than those interested in caves and karst as a place just for recreation or research.

ACKMA has been remarkably successful in bringing together managers and cavers - our conferences (held about 18 months apart) have seen some remarkably fiery exchanges between cave managers and cavers. These *have and will* lead to better management guidelines, understanding and access conditions for users and managers alike, and to better conservation of the karst resources.

The growth and development of ACKMA and the CDA have much in common. Whilst the CDA may have been driven by the need for cave divers to maintain access to the cave and sinkhole resources for their needs, ACKMA has been driven by a need for cave and karst managers to be able to present their views and needs to users and to the policy setters.

This must be one of the driest and uninteresting collections of paragraphs I have ever written. However, I believe that the CDA approach has much to offer Australasian cave managers whilst they

grapple with the need to provide access to caves and with the need to keep some resources for the future. It would be useful to see Australian cavers adopt a similar believable assessment of cave users. It seems that the Australian Speleological Federation is moving toward a national system of caver accreditation. This will help managers and wet and dry cavers alike.

**FOOTNOTE:** Andy's reference to the CDA's approaches gives credit for our strongly-established training and site-rating policies. It is pleasing to see that other related organizations can utilize or build on some of our own Association's skills and hard work. I am continuing to develop national contacts and exchanges with ACKMA and ASF as my ongoing CDA National Director's policy.

**G**

## CDA NEWS

### BARNOLUT BOOKINGS

Colin Traeger of Barnoolut would prefer bookings to be made ahead only 4-6 weeks please. It can be difficult for him to predict changing argicultural/management decisions affecting access so far in advance, and he would not like to disappoint divers if possible.

### McKAY'S SHAFT

McKay's Shaft is now ready for visitation. Murray has arranged with me in our discussions for 4 weekends per year for the first year. Divers must be Sinkhole Level and one member at least is to have good rope & ladder skills to set up the 25-metre drop at the entrance. Initially, groups of about 6 people will be accepted, and contact must be made to either myself or Phil Argy, NOT to the landowner. We will act as on-ground organizers until the access system settles in. Both our phone numbers are listed at the front of Guidelines. The CDA will use a "lottery draw" system for parties if there is a clash. So organize yourselves and make contact. Indemnity forms will be provided.

### NEW WOODS & FORESTS ADDRESS

Please note the new address for Woods & Forest is on Jubilee Highway, Mount Gambier, next to Woods and Forests Sawmill (near Umpherston's Cave). See letter on page 16 for more details.

## CDA EXAMINERS

INSTRUCTOR	Cavern	S'hole	Cave	State	Telephone (h)
Ron Allum	•	•	•	NSW	(02) 398 4610
Stephen Arnel	•			VIC	(055) 26 5230
Bill Bernhardt	•	•	•	VIC	(03) 725 9716
Chris Brown	•	•	•	SA	(08) 379 1445
Marilyn Boydell	•	•		WA	(09) 349 5646
Stan Bugg	•	•	•	VIC	(03) 379 8791
Greg Bulling	•	•	•	SA	(08) 265 4978
Gary Bush	•			WA	(09) 521 8121
Scott Carpenter	•	•	•	VIC	(056) 25 2508
Paul Cavanagh	•	•	•	NSW	(02) 804 7888
Brian Cornell	•			VIC	(059) 85 2514
Terry Cummins	•	•		NSW	(02) 888 5899 (w)
John Dalla-Zuanna	•	•	•	VIC	(03) 370 1093
Ian Gothard	•			VIC	(03) 481 0474
Glen Harrison	•	•	•	SA	(08) 386 3237
Barry Heard	•	•	•	VIC	(056) 27 5511
Alan Jolliffe	•	•	•	VIC	(03) 874 7669
Nick Jones	•	•		VIC	(03) 282 4502 (w)
Simon Jones	•	•	•	WA	(09) 344 4343
Ian Lewis	•	•	•	VIC	(087) 25 9229
Phil Mann	•	•	•	VIC	(03) 483 0315
Max Marriott	•	•		SA	(08) 47 3360
John McCormick	•	•	•	VIC	(03) 579 0570 (w)
Warrick McDonald	•			VIC	(03) 579 2600 (w)
Richard Megaw	•	•	•	SA	(08) 344 1733
Tim Miles	•	•	•	SA	(08) 289 2030
Hugh Morrison	•	•	•	WA	(09) 409 9807
David Ogilvie	•			NSW	(02) 888 6899 (w)
Andrew Poole	•			WA	(09) 249 4048
Tony Richardson	•	•	•	VIC	(03) 754 6163
John Vanderleest	•			VIC	(03) 416 9370
Des Walters	•	•	•	NSW	(060) 25 3506
Bob Wealthy	•	•	•	VIC	(03) 789 6389
Frank West	•			QLD	(049) 43 5983
Andrew Wight	•	•	•	NSW	(02) 428 2176
Liz Wight	•			NSW	(02) 428 2176
Carol Wright	•			NSW	(066) 53 6087
Frank Ziegler	•	•	•	VIC	(055) 26 5288

## HAS YOUR MEMBERSHIP EXPIRED???

If you are unsure, either check on your C.D.A.A. card, or the label on the envelope you received this Guidelines in, has the expiry date and number of your membership.

In the last issue of Guidelines, Issue No. 43 - April 1992, a pink Membership Renewal Form was included.

Complete the details and send your renewal fee by September 1st 1992 to CDA Records Officer, P.O. Box 290, North Adelaide 5006.



## **C.D.A.A. Annual General Meeting**

DATE: Saturday, 26th September 1992  
VENUE: Red Carpet Inn, 96 Jubilee Highway East,  
Mount Gambier  
TIME: 8.00pm start/10.00pm finish

**See enclosed yellow information  
sheet for further details,  
and for your Nomination Form.**

### **MEMBERS MANUAL:**

All orders for the  
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# KEEPING COOL IN "PALE ALE"

by Peter Horne

Often erroneously believed to be an anagram for "Pale Ale", the waterfilled sinkhole known as ELA ELAP is an almost-legendary cave diving site among Mount Gambier sinkhole visitors ... but (usually) not because of its awesome beauty or other virtues!

Sometimes called "Green Lake" and known officially as cave number 5L14 (Cave Exploration Group of South Australia), Ela Elap was reportedly first seen by a white explorer (Burr) in 1845, but the first known underwater exploration in the sinkhole - by local divers "Mick" Potter and Jock Huxtable - didn't take place until November 1962, almost 120 years later. The name of the sinkhole is thought to have been derived from the local Buandik aboriginal words "lap lap", which reportedly meant "small fish" or something similar, and had nothing to do with pale ale (or "pale hole" - the feature is also wrongly known as "Eloh Elap").

Ela Elap is a truly mysterious cenote (native well). It is roughly similar in size and shape to other sinkholes which lie nearby (especially "One Tree"), but its bottom water temperature is by far the coldest of all known waterfilled cave features ... just 11 degrees C compared with the others' 14-15 degrees or so! And, unlike the others, it is usually gloomier and murkier as one descends (although at times it can be inexplicably

clearer than the others, too)!

Preliminary temperature studies over a 12-month period by this writer and his companions during the early 1980s clearly showed that Ela Elap was consistently and noticeably WARMER in the murky shallows (25 degrees Celsius or so) in Summer than One Tree, The Black Hole and Ten-Eighty sinkholes, but COLDER throughout the entire water-column during the rest of the year. While Ten-Eighty and The Black Hole "bottom out" much deeper than Ela, One Tree is almost exactly the same depth (about 50 metres), so it therefore came as something of a surprise to find that two almost-identical features, on the same property, exhibited totally different temperature and visibility profiles!

Like many other sinkholes in this general area, access to Ela's entrance lake is a simple matter, thanks to the wide, gently-sloping ramp which was cut into its south-western side (probably in the 1800s) so that stock could get to the water easily. Early divers were heard to speak of "giant underwater stalactites" in the depths of this sinkhole, and it is likely that these stories stemmed from some unusual upright limestone (or stromatalitic?) formations which are to be seen on the walls at 36 metres, just under the entry area.

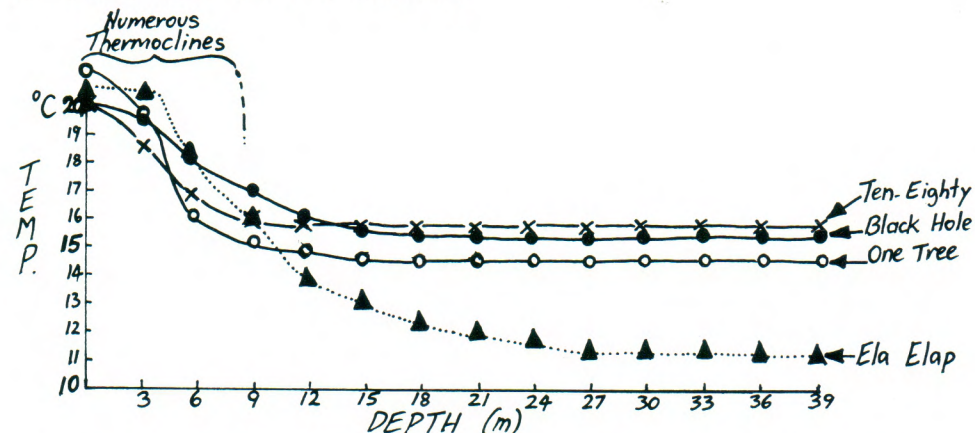


Figure 1 - Comparison of water temperatures (Summer 1981 - P. Horne/M. Nielsen).

The shallowest point in the sinkhole lies near the northern side, where the top of a debris (and rubbish) mound is reached at a depth of around 28 metres. From here, wetsuit-clad divers can follow the boulder-strewn slope past the occasional large tree branches and scattered wire rolls to the silt bottom ... if they have good torches and can tolerate cold fingers, numb lips and (maybe) even aching teeth!

Despite its relatively uncomfortable environment, however (for Aussies, that is!), the greenish "pale ale" contains acceptably-low levels of contaminants and nitrates (1981

studies) and quite a few large life-forms such as introduced redbfin perch and native Galaxids, as well as the ol' yabbie or two.

Hopefully, future studies will identify the geological, hydrological or environmental mechanisms which keep (or make) Ela Elap's water so different from the other major sinkholes of this region.

In the meantime, put on your gloves and a 7mm wetsuit (or invest in a nice warm drysuit), ensure you have a nice warm thermos in your (heated) car, and enjoy one of the lower South East's most unusual cave diving sites!

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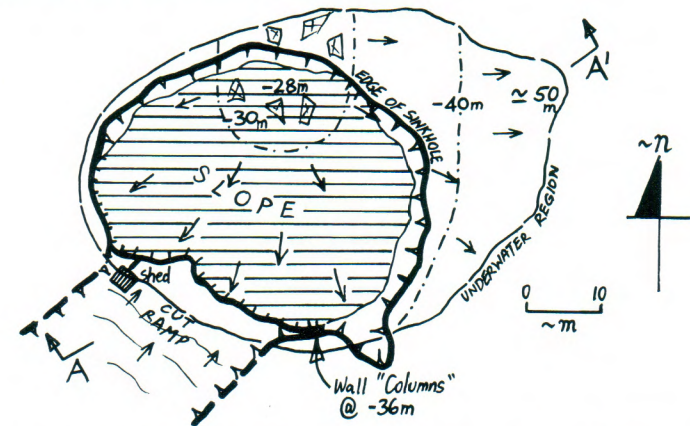


Figure 2 - Plan view of Ela Elap (Combined data, Stace/Allum/Horne, 1979/81) (ASF Grade 2)

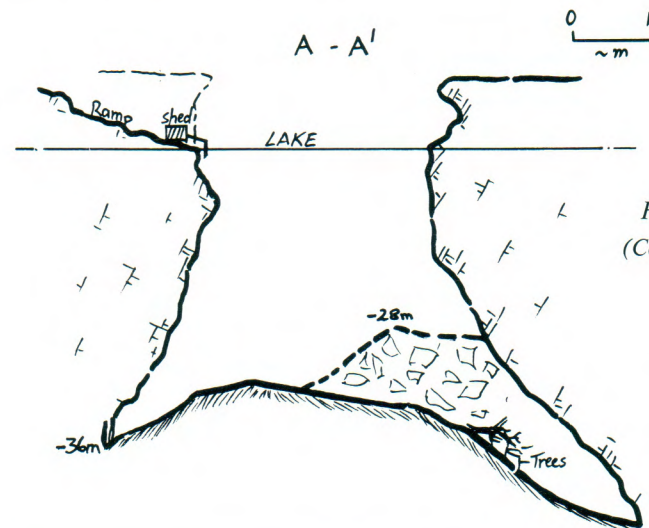


Figure 3 - Long section of Ela Elap (Combined data, Stace/Allum/Horne 1979-81). (ASF Grade 2)



# BURRINJUCK AND BEYOND

by Pat Bowring

**VISIBILITY?** What visibility? Divers were using jump reels and search patterns just to find their own hand. But Lake Burrinjuck, a dammed portion of the Murrumbidgee River in New South Wales, was always an unknown quantity.

That's why we were there. We, being about 15 cave divers and speleos from New South Wales, Victoria and South Australia. From the speleos we knew that there were caves in the area, specifically around what is now a small island in the middle of the lake.

In dry times, and back before the place was flooded, these had been explored and mapped to varying degrees of accuracy. (One of our maps dates back to 1882.)

During droughts, they had been checked using various high tech equipment ranging from lie-lows to kayaks. When water-flow into the dam resembled John Hewson's sense of humour, spectacular visibility was recorded.

Anything up to five or six feet!

Given the dire need for new cave diving sites, especially in New South Wales, anything was worth a try. Even in winter. Even in the middle of a lake. Even ... well they don't call cave divers "the lunatic fringe" for nothing.

Something was there and someone had to dive it. If by some miracle we actually found the caves, all the better. If somehow a fixed line could be run into the cave, then the mission would be declared an absolute success.

And if no one drowned ... well, no one did.

The principal cave was located to the south of the island. So the northerners decided to dive it. From the information provided by the various speleological societies we believed it to be located along a vertical cliff, about 35 metres high with a large entrance.

It used to be about ten metres above the Murrumbidgee River. Now it could have been up to 36 metres below the water line. And precisely where was anyone's guess.

At least it would have been without the informative speleo specifically from a representative of The Hills group. With his

help we were able to make a good guess and we started within metres of the entrance.

Despite the absence of visibility, it was possible to confirm the entrance, at about 24 metres below the surface, and push (we believe) several hundred metres into the main chamber.

There were passages inside the cave and it would have been nice to have located their entrances. In fact it would have been a bloody sensation. But we didn't.

Meanwhile, beaver away on the other side of the island was Ian Lewis and his team. They were trying to locate a couple of significant solution tubes and another decent cave, with a smallish entrance but a large chamber.

Ian doesn't reckon he reached his objective. But he was nevertheless undaunted. He reckoned he found a hitherto undiscovered cave.

(Now while no one would ever dream of accusing our illustrious National Director of



being anything other than reverential towards the truth, some wonderment was expressed that he had discovered – in virtual zero visibility – a cave which had eluded countless speleologists in the days before the place was flooded.)

Anyway, who would be mean-minded enough to deny the man his moment of glory?

The point is that caves were found, some exploration done and plans made for return expeditions the next time the water level drops sufficiently to allow some degrees of dry access to the main cave.

We want to hear the cries of "How the hell did that get up there?" from people staring at our fixed line. It will also be interesting to see what sort of crazy macrame pattern was created under the influence of zero visibility and narcosis.

The exercise also pointed to the enormous potential that exists in further co-operation between groups of speleologists and cave divers.

There must be more diveable caves, with potential for exploration, lurking in the dim, closely guarded recesses of the minds of

speleos and cupboard cave divers in New South Wales and other states.

And if they are ready to share this knowledge with the rest of us at this point, perhaps they could be persuaded to bequeath the Association such knowledge in their will.



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## STANDARDS DIRECTORATE REPORT

*by Glen Harrison*

Hi folks!

Well another AGM is nearly upon us and there is still plenty of work still to be done in the Standards Directorate. Since the last Guidelines a lot of positive things have occurred regarding CDAA Standards. The long awaited Draft Penetration Instructor Outline was distributed to members of the Standards Review Group for comment and feedback. Many concerns were raised as a result of this document and a meeting was called to try to resolve some of these issues. The meeting proved very successful with much positive input regarding the future direction of penetration training. The second draft of the document is being prepared and should be available for distribution in the near future.

If you missed Shek Exley then you missed a once-in-a-lifetime opportunity to listen to one of the World's greatest cave divers. Shek is a very modest and unassuming American who is no doubt a legend in his own time. The Directors took the opportunity to meet with Shek while he was in Adelaide and discuss various issues concerning CDAA Standards and the NSS. It was interesting to parallel our different philosophies and I believe that much can be learned by the exchange of ideas and concepts. It is clear in my mind that the CDAA can be proud of our safety record and the high standards we adopt. We should strive to maintain these standards at all costs.

**G**

## CDAA INSTRUCTOR TRAINING

*by Tony Richardson  
Instructor Training Manager*

CDAA Instructor Training has evolved to meet the need for active instructors at the three levels of CDAA Diver Training - Cavern, Sinkhole and Cave. Penetration instructors are appointed on a course-by-course basis from the list of the most experienced and active Cave Diving instructors.

The following is a general outline of requirements before an instructor qualified for a CDAA instructor rating. Obviously exact requirements differ at the three levels of CDAA instructor.

1. Be an active insured scuba instructor with an agency recognised by the NSQC, i.e. PADI, NASDA, NAUI, SSI.
2. Be a financial CDAA member, qualified to a level higher than you are going to teach.
3. Have prior instructional experience.
4. Have a significant amount of cave diving experience as evidenced by a cave dive log.
5. Assist two other CDAA instructors in courses they are teaching and obtain sponsorship from these instructors. Sponsorship essentially means the sponsoring instructor vouchers for the

experience and instructional skills of the applicant.

6. Attend a CDAA Instructor Training Program held over a weekend. In this program, the instructor applicant is evaluated on standards and procedures, cave diving knowledge, and all phases of a CDAA course - lecture, land drills, water training and supervised dives.

The CDAA instructor then needs to maintain active status each year by teaching some CDAA courses or being involved in some other forms of CDAA training. Failure to do this will result in the instructor falling into inactive status which means the instructor is no longer able to issue CDAA certifications.

Considerable time and effort has gone into the development of the CDAA instructor qualification process. The aim of this process is to ensure only the most current, experienced, and committed instructors will qualify as CDAA instructors. As an adjunct to achieving this aim, CDAA Standards state that instructors will be appointed on a needs basis only.

**G**



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## SHECK EXLEY IN AUSTRALIA!

*by Peter Horne*

Australian cave divers were recently granted a rare opportunity to hear one of the world's foremost cave divers, Floridian SHECK EXLEY, give some fascinating public talks in Sydney, Melbourne, Adelaide and Perth.

Sheck was brought out from America by the CDAA (actually, mainly our Business Director, Tony Davis), and I was fortunate to have been able to attend the Adelaide meeting held on Saturday 20th June at the University of Adelaide's Fischer Lecture Theatre ... along with some 230 others!

Sheck told the audience that he had just enjoyed one of his most memorable dives – in the awesome chamber of The Shaft, in Mount Gambier – and he spoke for well over an hour, mostly from a “blacked-out” position behind the podium as he showed many interesting slides.

Unlike most public lectures I have attended previously, this one was almost dead quiet throughout, as everyone (except the usual screaming kid up the back) listened, spellbound, to every word he had to say in his Southern “Y’all Drarl”!

Sheck spoke about his many close-calls in the early days as he learnt the hard way about the hazards of diving in caves without lines, getting lost and the like ... and he also gave everyone a rare glimpse into the more specialised fields involving such aspects as super-deep diving, rebreather equipment and underwater habitats which were used on the incredible Wakulla Springs project recently. His detailed descriptions of his dives to more than 240 metres on mixed gas in caves also kept people wide awake ... and this prompted certain embarrassing members to ask him how he dealt with bodily functions while encased in a dry-suit for hour upon hour while decompressing ...

All through the lecture, Sheck showed that he was a professional but friendly and easy-going guy; and the rousing ovation at

the completion of his lecture hopefully indicated how much so many divers and observers enjoyed it!

After a short break, our own Andrew Wight presented his (and his wife, Liz's) fabulous underwater video, “Florida – Window to a Hidden World”, which was also very well received by all.

The National Director, Ian Lewis, summed the evening up and thanked everyone for coming out in force, and I managed to record most of the evening on a (blotchy old videotape, unfortunately) for posterity before we all departed. Some of us then accompanied Sheck to our infamous Pie-Cart for some cultural education in the form of an Adelaide “Pie Floater” ... a meat pie with tomato sauce, floating upside-down in thick, duckweed-coloured pea soup ... I have never seen Sheck looking so nervous! (Illicit copies of the video showing



this disgusting event may also be obtained via the usual discrete channels! ...)

Hopefully, the success of this event will inspire similar occasions in the next couple of years! Tony, the Association owes you a vote of thanks, mate ... and Sheck, thanks for the opportunity to learn more about REAL cave diving!

**G**

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# SAFE SINKHOLE & CAVE ACCESS

By Tony Davis

With the increasing number of new sites being opened that require vertical access, and the number of new members wishing to dive the established sites such as Hells Hole, Bullocks and Blacks, I felt it was a good time to endeavour to explain some of the techniques that can be used to safely gain access to the water.

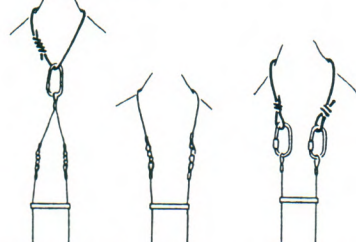
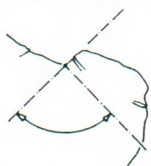
**Ladders:** By far the most popular method for getting in and out of sites is by using a lightweight alloy caving ladder, made from hollow alloy rungs crimped into steel cable. By using special split links at the ends any length is available by joining shorter ladders together.

**Rigging Ladders:** Ladders may be anchored by either a wire rope tether, or in conjunction with tape slings. Where there are sharp edges a wire tether is probably safer, but whichever you use make sure the anchor point used is secure. A car tow bar, healthy tree or solid fence post will usually do the job.

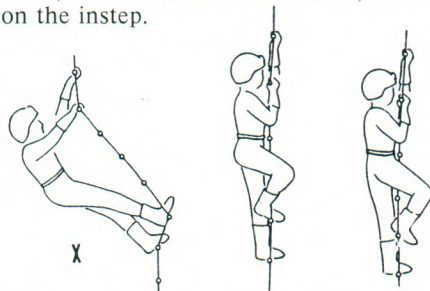
Where the ladder passes over the edge of the cave or sinkhole, it is important to protect it from sharp edges, and an old tyre or log is ideal. This will also keep the top of the ladder out from the edge, allowing much easier climbing. Make sure the spacer is secured as

well, otherwise you may find it following you down the cave, with potentially disastrous results.

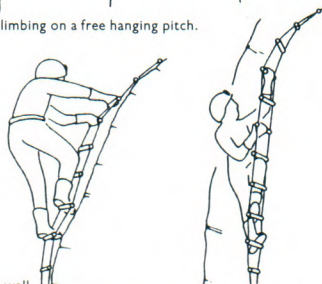
Ladder attachment should assume a safe angle to prevent it slipping off as load is released.  
Ladder attachments as near parallel as possible to minimise strain on the ladder end wires.



**Climbing ladders:** Ladder climbing is hard work, but by using the right technique it will be easier and much safer. Basically this means keeping your body as near vertical as possible, and this is best achieved by climbing with your arms wrapped around the ladder, with the hands, palms facing inwards, gripping the rungs at about head height and hugging the ladder in towards the chest. Feet are placed either like arms, climbing on your heels, or at the front of the ladder, climbing on the instep.



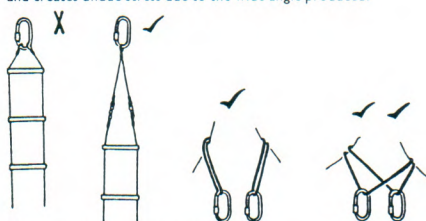
Two methods of ladder climbing on a free hanging pitch.



Ladder climbing against a wall

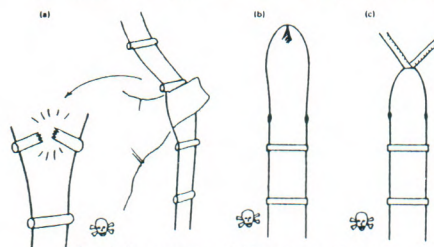


Single or double looped slings give better loading angles and creates undue stress due to the wide angle produced.



Alternative ladder attachments

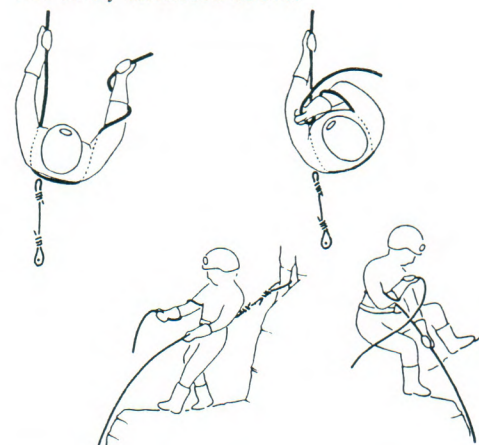
It is largely a matter of balance; keeping the ladder close to the body ensures an



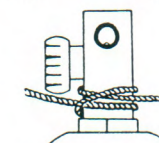
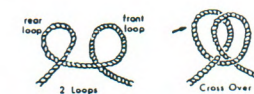
Poor belay practice a. ladder supported by rung b. tether hung on sharp flake c. tether directly onto tape sling

upright position and directs most of the weight onto the thigh and buttock muscles. Climb steadily, and resist the temptation to reach up for rungs above your head, and NEVER climb a flexible ladder with hands and feet in front, as this forces most of the weight onto the arms, and you will surely fall.

**Safety & belay techniques:** With the considerable effort needed to climb a ladder, it is imperative that correct safe belay techniques are used. This comprises a safety rope, a recognised caving or climbing type is essential, controlled by the safely anchored belayer, and attached to the climber ideally via a specialist climbing harness. If no harness is available then tying the rope directly to the climber around the waist is suitable. For long pitches a safety helmet is also needed, for protection from falling rocks, scuba tanks and the belayer who was not safely anchored above.



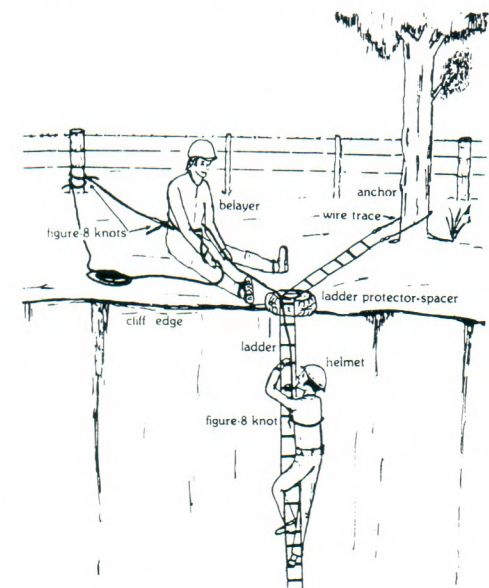
The basic principle of belaying utilises friction from rope wrapped around the belayers body to help control any fall. This is achieved by running the rope through the belayers guiding hand, around the small of the back, and a twist taken around the arm before it is held in the braking hand. If a fall should occur the strain on the belayer is severe, so it is imperative that no slack is left in the safety line, and the belayer wears gloves at all times.



Clove hitch on tank valve

**Lowering and hauling gear:** The basic principles explained above are also used for transferring gear, however a separate rope should always be used from the one used for belaying

people, as lives depend on that rope doing its job. When hauling tanks the rope, or preferably tape slings, must be attached to the tank valve, not the B.C. or backpack, using a clove hitch. Again the hauler must be safely tied to a solid anchor point.



Continued on next page



## SAFE SINKHOLE & CAVE ACCESS

*Continued from previous page*

Using carabiners and other mechanical devices will help heaps with hauling, and an A-frame with a couple of pulleys will greatly reduce the work done by the haulers, a very important consideration if the divers are doing the hauling and don't want to end up bent.

By visiting your local outdoor or climbing store a few essential pieces of equipment can be bought for not a lot of money, and they will increase the safety, and ease, of your next trip to a vertical approach site.

For those of you who want to learn more about this area try the book "Single Rope Techniques" available through the CDAA, or any of the technical manuals available at your local climbing store.

**Note:** Before using any of the techniques described above, it is essential to practice in a SAFE ENVIRONMENT, and to obtain correct practical instruction from experienced people.

G

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*Below is a letter received by Ian Lewis,  
CDAA, on June 3 1992*

Dear Ian,  
RELOCATION OF MT. GAMBIER  
FOREST DISTRICT

I wish to advise that as of 1st June 1992, the Mount Gambier and Myora Forest Office administration have been relocated into Mount Gambier.

Our new premises are in the previously Electricity Trust of S.A. office, adjacent to the Woods and Forests Sawmill and Regional Offices on Jubilee Highway, Mount Gambier.

CDAA members would need to be advised of this change.  
MOUNT GAMBIER FOREST DISTRICT  
WOODS AND FORESTS DEPARTMENT  
P.O. BOX 162,  
MOUNT GAMBIER, 5290

Permits for cave diving should now be collected from either the new office or, if after hours, from Mill Security. Arrangements will be made to have a suitable permit box made for this purpose.

Your co-operation on this matter will be appreciated. There may be minor transitional problems with members becoming aware of the change in address, however, every endeavour will be made to communicate the new arrangements when members are applying for permits.

Yours faithfully,  
DENNIS R. PAGE,  
District Forester,  
Mount Gambier Forest District

### MOUNT GAMBIER

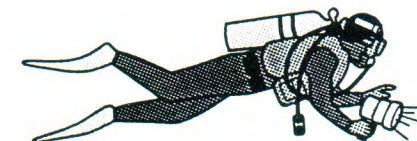
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# THE THREE SISTERS CAVE (5L13)

By Peter Horne

After the closure of several years due to legal concerns, the unusual cave known as The Three Sisters (5L13) is about to return to our list of diving sites thanks to the very-much appreciated willingness of the Millicent Council to help us out (or should I say "in"?).

As is the case with several other Government and council-owned sites, cave diving access permission to The Three Sisters cave will be granted to suitably-qualified people provided they have signed the appropriate legal documents - including those requiring the payment of stamp duty. While these arrangements are being finalised, I thought it would be a good time to write this brief article so that members had a better idea of what to expect before they put on their tanks and "jumped in".

The Three Sisters owes its name to its three original roof-window entrances, although only one, just a couple of metres from the bitumized Tantanoola-Glencoe Road, is accessible these days. It has been known for quite a long time - at least since 1933, when it was mentioned by Norman Tindale in a geological report on the Tantanoola area - but it is a relative newcomer to cave diving circles because it used to be heavily polluted with offal from a nearby abattoir.

The cave is situated near the top of a rise, so it is quite a drop from the entrance hole to the floor - around 18 metres or so. In general shape and size, The Three Sisters is strikingly similar to an unnamed (dry) cavern known as 5L99 a couple of kilometres to the north-west; they are both basically large collapsed caverns with dome-shaped ceilings and minor extensions around the boulders and walls. However, The Three Sisters strikes the water-table before the bottom of the cavern reaches the wall, enabling cave divers to work their way down to a depth of about 33 metres in a terminal chamber.

The small entrance hole does not drop cleanly into the cavern; an awkward area right at the surface makes gear (and caver!) lowering rather tricky in the darkness. A ledge also sticks out a couple of metres down,

presenting a bit of a head hazard for cavers when they are climbing back out if they are not careful. It is therefore important for all members of the party to be reasonably proficient in ladder-climbing or S.R.T. skills, and a helmet-mounted caving light is also highly desirable.

Entering the cavern, one sees many picturesque curtains of fine tree roots hanging from the ceiling and along the walls. The first point of floor contact is almost 20 metres below, on the top of a steep dirt-and-rubbish mound, and from this position almost all of the cavern can be seen. Heavy diving gear (especially double air cylinders, as is the requirement these days) needs to be handled very carefully on the mound, but there is quite a lot of space at the edge of the main lake for gearing-up. The lake has a couple of minor flat passages, but the "main drag" is quite easy to find.

Divers slip under the wall into a low cavity before reaching the wall at a depth of only a few metres. At first glance, the cave appears to end here; however, by moving right up to the wall, divers will see that the huge floor-slab doesn't quite actually touch it, and a narrow, vertical fissure-like hole below indicates that the cave continues here.

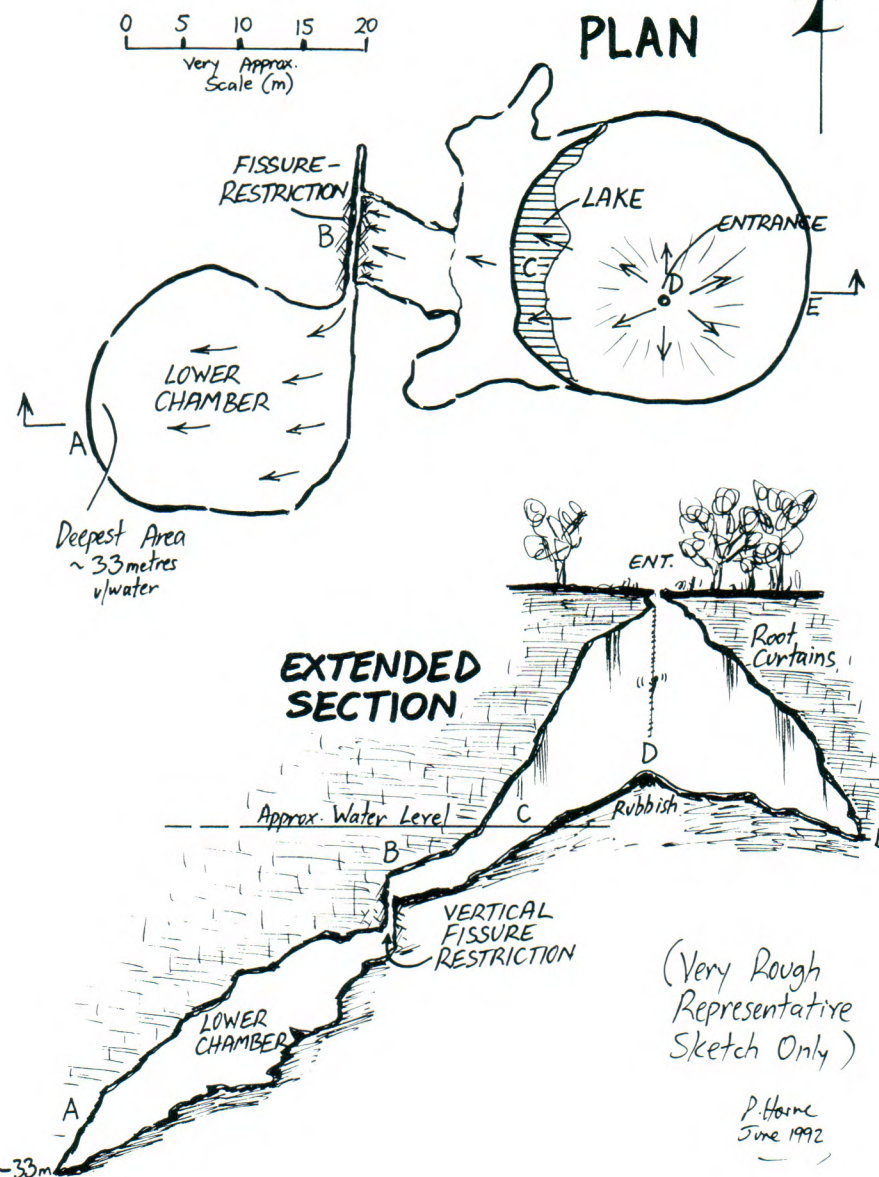
This restriction used to be a major problem even for divers wearing just a single cylinder, when it was prone to severe silting, but by the mid-1980s, prior to its last closure, it was much clearer although still difficult to squeeze through if one was "portly"! Since current CDAA policy states that divers are required to wear twin cylinders on all Penetration dives, it can only be assumed that this restriction will be even harder to negotiate due to increased bulk, although probably not by a great amount. It is essential for the first diver in the party, with the benefit of good visibility, to look down the fissure and locate the largest open area before entering the crack. Then, by turning 90 degrees to the left and ensuring that all hoses and regulators etc. are tucked in and well-protected, the first diver can commence a slow and careful shoulder-bumping

*Continued overleaf*

## "The Three Sisters"

(5L13)

(Very Approx.)  
MAIN





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### THE THREE SISTERS (5 L13)

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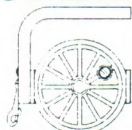
descent down the wall before reaching the bottom a few metres further down. This fissure will quickly let you know whether you need to modify your twin-tank setup or not!

It is very important for the lead diver to ensure that the guideline is tied off properly at the bottom of the open area in this fissure before he moves further along towards the lower chamber on the left ... otherwise, they might all face an interesting line-trap situation on the return leg of their visit!

The false passage at the bottom of the fissure comes out at the top of a large sloping chamber with some ragged, jumbled boulders and white silt. This is the final area known at this time, and the "sealed" appearance of this chamber indicates that there is very little hope of any additional extensions being discovered.

We hope to produce a detailed map of the cave in the near future, and members who have previous underwater surveying experience are invited to contact us if they believe that they can assist in this regard. The Three Sisters is a very different cave dive from most of the others around Mount Gambier, but it is still an important karst feature and is certainly worthy of more detailed research work.

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

SITE	LEVEL	CONTACT	ACCESS DETAILS
<b>MOUNT GAMBIER - SOUTH AUSTRALIA</b>			
<b>Ewens Ponds</b>	Nil	Dept. of Lands PMB 124, Mt. Gambier 5290 (087) 35 1111	Groups of 6 or more, phone/mail to Dept. of Lands. Smaller groups, no need. Ponds are closed 1 September - 30 November each year.
<b>Horse &amp; Cart Tea Tree</b>	CN CN	Peter Cunningham PO Box 643, Mt Gambier 5290 (087) 38 4003	By phone or mail, 1 week prior.
<b>Little Blue (Baby 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 2 Sisters Fossil</b>	CN CN C	Dept. of Lands PMB 124 Mt Gambier 5290 (087) 35 1111	Contact Dept. of Lands by phone/mail prior to diving. Stay out of Gouldens when pump is operating.
<b>Ela Elap One Tree</b>	S S	Mr. Peter Norman Private Bag 67, Mt Gambier 5290 (087) 38 5287	By phone or drop in before diving. Accommodation also available.
<b>Swim Through</b>	C	Valerie Earl C/- PO Allendale 5291	Currently CLOSED pending new access arrangements.
<b>Piccaninnie Ponds</b>	S	NPWS 11 Helen Street, Mt Gambier 5290 (087) 35 1171	Permit holders by phone. Be aware of delicate vegetation.
<b>Hells Hole Pines Mud Hole</b>	S C C	Woods & Forests PO Box 162 Mt Gambier (087) 24 2759	Contact Woods & Forests (Lois Kettle) by mail or phone and arrange permit. Collect permit from Regional Office, Jubilee Hwy. Mt. Gambier. No diving on total fire ban days.

SITE	LEVEL	CONTACT	ACCESS DETAILS
<b>MOUNT GAMBIER - SOUTH AUSTRALIA continued</b>			
<b>Black Hole Ten Eighty Bullock Hole</b>	S S S	Mr. Colin Traeger, Manager, Barnoolut Estate PO Box 12, Mt Gambier 5290 (087) 26 6215	Contact CDA A Records Officer for diving deed THEN mail Booking Form to Colin Traeger 2-6 weeks prior, stating names/qual. of all divers, and time slot - 1pm Saturday, 9am or 1pm Sunday, or 8am (weekdays).
<b>Max's Hole</b>	C	Mr. Trevor Edwards PO Box 1319 Mt Gambier 5290 (087) 26 8277	Phone or mail 1 week prior to dive.
<b>Shaft</b>	S	Mr & Mrs Ashby	ONLY by contacting designated "guides" who will arrange access. Refer Guidelines Issue 42 - January 1992.
<b>Engelbrechts - East - West</b>	C P	Mt Gambier Council	Obtain key from Mt Gambier Tourist Information Centre.
<b>Three Sisters</b>	P	Millicent Council	Currently closed until new access arrangements completed.
<b>Iddlebiddy (5L250)</b>	P	Woods & Forests P.O. Box 162, Mt. Gambier, 5290 (087) 24 2759	Open 1st and 3rd weekend of each month. Only penetration divers who have completed a practical in-water cross-over. Phone Forests Clerk, Lois Kettle, for bookings. 4 divers per group per weekend. Collect key from Lady Nelson. Must show permit. No permit - no key.
<b>Mackays Shaft</b>	S	Ian Lewis (087) 25 9229 OR Phil Argy (087) 25 9192	4 weekends per year for first year. Groups of about 6 people, with one member having good rope & ladder skills. Indemnity forms will be provided.
<b>NULLARBOR - WESTERN AUSTRALIA</b>			
<b>Cocklebiddy Murra El Elevyn Tommy Grahams Weebubbie</b>	C P C C	Regional Manager C.A.L.M. 44 Serpentine Rd, Albany 6330 Ph: (098) 41 7133	Must apply for permission to dive at least 4 weeks in advance of trip.
			Small dive site next to main chamber: Sinkhole
<b>NULLARBOR - SOUTH AUSTRALIA</b>			
<b>Warbla</b>	P	N.P.W.S. Ceduna	Currently CLOSED to all diving subject to draft management policy.





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**Basic U/W Cave Surveying.** The standard publication for anyone remotely interested in research and survey techniques used in water filled caves.

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**Deep into Blue Holes - by Rob Palmer.** This is the project manual written about his trips to the Bahamas, diving some of the most advanced and spectacular caves in the world. As reviewed in Guidelines No. 35.

**CDA Occasional Paper No. 2 - from Natitonal Conference 1981.** Includes topics such as Fossil Cave, Belay Techniques & Cocklebidy 1979

**S.R.T. Single Rope Techniques - published by the Sydney Speleological Society.** This is the definitive work on all aspects of vertical travel in caves. Should answer most questions on rope work for cavers and cave divers alike.

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### PRICE

\$12.00

\$10.00

\$15.00

\$40.00

\$35.00

\$8.00

\$23.00

\$15.00

\$15.00

\$15.00

\$50.00

\$25.00

\$25.00

\$30.00

\$11.00

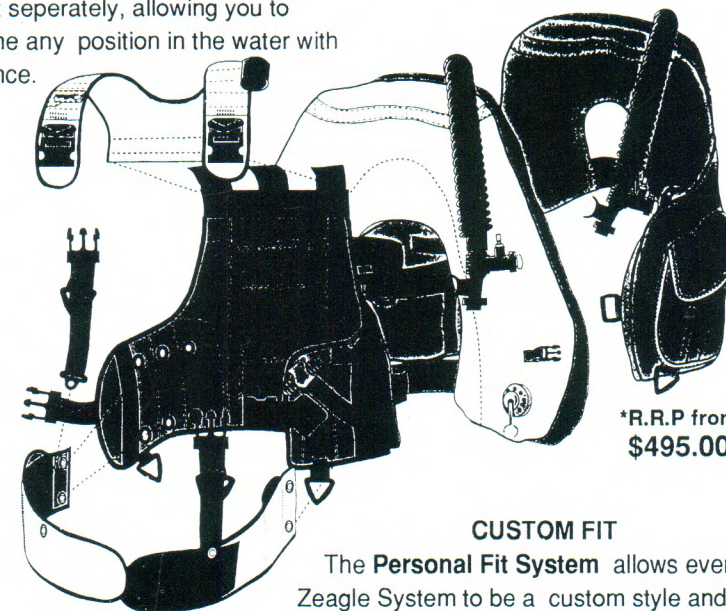
\$0.80

\$2.00

## "GREATEST" INNOVATION IN DIVING COMFORT

### COMBINE ALL YOUR BUOYANCY AIDS INTO ONE!

By incorporating the weights into the B.C., your weights and buoyancy are concentrated at your body's center of balance, so they work together, not seperately, allowing you to easily assume any position in the water with perfect balance.



\*R.R.P from  
\$495.00

### CUSTOM FIT

The **Personal Fit System** allows every Zeagle System to be a custom style and fit. No other buoyancy system gives you the versatility and comfort of a Zeagle.

Each individual component of the Zeagle System can be independently selected for size, style and colour to get the system that will work best for you.

The Zeagle system inflates away from your body eliminating the feeling of being squeezed.

**zeagle**  
SYSTEMS, INC.

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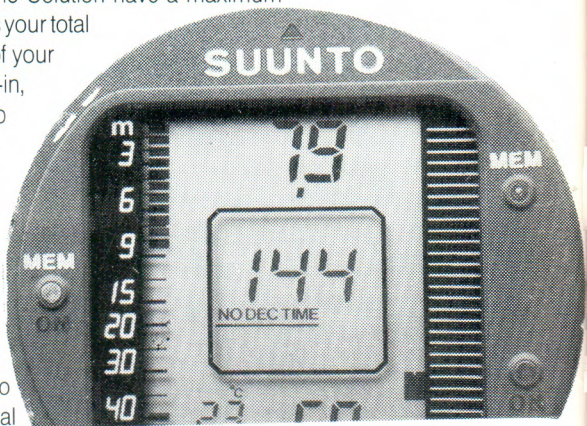


# SUUNTO SOLUTION

*a dive computer for the most demanding divers*

**Solution is the most versatile and easy-to-use diving computer in its class. Its unique easy-access memory records dive summaries, dive profiles, as well as dive history.**

The profile and summary (logbook) memories of the Solution have a maximum capacity of 8 hours. The dive history memory records your total diving time, number of dives, as well as the depth of your deepest dive over the lifetime of your Solution. A built-in, 3-stage ascent rate meter with warning helps you to monitor the speed of your ascent. The Solution combines 36 user-friendly functions in one of the most compact computers in the market. It is designed to be simple to operate – so you can use the functions to their fullest. The Solution has a clear display with large digits that are easy to understand. Wrist and console models are available. Thanks to the Solution's unique PC Interface, it is also possible to link up with a personal computer. This allows you to read and print out personal data about your actual dives, including dive profiles and tissue saturation levels. In addition, the software program allows you to enter complete logbook information for every dive. The built-in dive simulation lets you plan your dives in advance.



## SUUNTO RELEASES NEW DIVE COMPUTER SUUNTO COMPANION

*much more than a digital depth gauge and dive time*

**The Companion is compact, easy-to-use, easy-to-read, easy-to-understand and a high quality sport diving computer for Beginners and Advanced divers.**

**THE COMPANION SHOWS:** • maximum, actual and ceiling depths • dive, no-decompression and surface interval times • temperature. **TELLS TO:**

- ascend, when the no-decompression limit has been exceeded
- stop at the ceiling and descend, when ceiling has been exceeded
- slow down, when maximum ascent rate has been exceeded.

**WARNS OF:** • not-safe-to-fly • low battery • omitted decompression stop during previous dives. **REMEMBERS:**

- maximum depth, dive time and surface interval time for five most recent dives (Log Book) • violations of decompression stop and ascent speed

**PLANS:**

- following dive, showing no-decompression limits for various depths based on previous dives.

**ADJUSTS:** • to altitudes up to 2400m • for more conservative, no-decompression limits.







# CAVE DIVERS ASSOCIATION OF AUSTRALIA

(Incorporated in South Australia)

P.O. Box 290, North Adelaide, S.A. 5006

## Annual General Meeting Notification

**DATE:** Saturday, 26th September 1992  
**VENUE:** Red Carpet Inn, 96 Jubilee Highway East, Mount Gambier  
**TIME:** 8.00pm start/10.00pm finish

Nominations are now being called for the 3 Directors positions.  
**Nominations must be received by Monday, 17 August 1992.**

- Nominations should be on the attached Nominations Form or similar, and contain two nominators who are current financial members of the CDAA, other than the nominee.
- Each nomination should contain a summary of not more than 100 words, outlining information to support the nominee.
- A person may be nominated for more than one position.
- No preferences will be considered in voting.

**There are three (3) positions open for nomination**

- 1. National Director**
- 2. Business Director**
- 3. Standards Director**

An outline of each director's responsibilities is contained in the Red Document (Special Guidelines Issue No. 34). Further information available from the current directors. If any position receives more than one nominee, a Voting Form will be posted to all members before 8 September 1992. Voting for this will close 23 September 1992 with the new directors being announced at the AGM.

## NOMINATION FORM

**Position(s) nominated for:**  
(please tick appropriate position)

- ☐ National Director  
☐ Business Director  
☐ Standards Director

Nominee: \_\_\_\_\_ CDAA No: \_\_\_\_\_

Brief summary of Nominee: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Nominated by: \_\_\_\_\_ CDAA No: \_\_\_\_\_

Seconded by: \_\_\_\_\_ CDAA No: \_\_\_\_\_

**NOMINATIONS MUST BE RETURNED BY MONDAY, 17 AUGUST 1992**

Return your nomination in the envelope provided to: CDAA Returning Officer, PO Box 6452, St. Kilda Road Central, Vic. 3004



# REVIEW AND FUTURE DIRECTIONS FOR THE C.D.A.A.

IAN LEWIS

As the AGM draws closer, I have put together this short Association Review page for your consideration, regarding next year and the longer-term direction of the CDAA. It's now 5 years since the major Re-structure of the Association began in earnest, and we are at a point where that process is close to completion. There are a few refinements still to be done and some outstanding issues (mainly in the Standards area) that require final consultations, but these are currently being considered and dealt with step-by-step.

In my year as National Director, I have been very quiet for a prolonged period (quite unusual!), but I have given great thought to the future directions we can take. In recent months I have discussed and received many ideas from senior experienced CDAA members – particularly past officials who know the CDAA's requirements well and have much to contribute. Three things are clear at this stage –

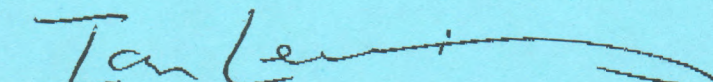
Firstly, our sport is now on the National stage, sharing agendas with all other outdoor sports. It is recognised as a trend setter in administration and training by most Government levels throughout Australia and we are beginning to provide advice on our experience to other Outdoor Sports. Decisions within Cave Diving now have a much wider audience taking notice.

Secondly, the CDAA needs new, long-term goals and objectives internally and externally. Successes like Sheck Exley's visit generate wide goodwill and further public initiatives are highly desirable. We have moved beyond year-by-year administrative decisions. We need to plan 3-5 years ahead and integrate our wide range of activity options. A long term Policy Document is beginning to be assembled for consideration over the rest of 1992.

Thirdly, our Finances are being analysed by the Treasurer, in consultation with me, using Accounting/Audit procedures to provide a firm basis for disciplined long-term funding decisions. This will, of course, govern our decisions and options, and define the limits of long-term undertakings.

I have decided to renominate for the National Director's position, after much consultation on the above matters, with input by the two previous National Directors to guide me and provide skilled consultation. I expect to announce State meetings soon to enable all the membership to contribute input on these far-reaching issues.

Thank-you for your support in 1992.

  
IAN LEWIS