

CAVE DIVERS ASSOCIATION OF AUSTRALIA

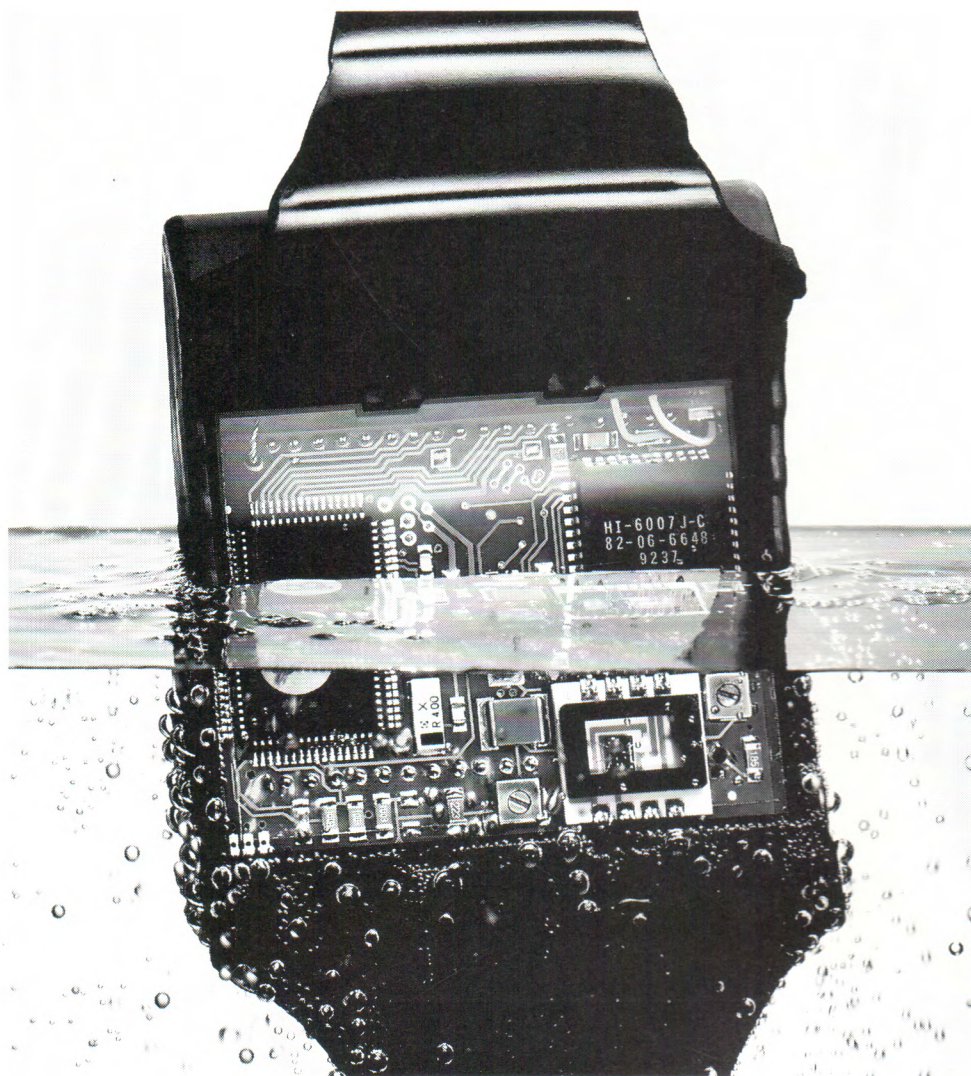
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GUIDELINES

No. 49 - OCTOBER 1993





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Front Cover: Winning photo from the
Photography Competition—see page 3 for 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, Peter Girdler, P.O. Box 290, Golden Grove, SA 5125, prior to **10th December, 1993**. 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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DIRECTORY

The following is a list of people that can be contacted for C.D.A.A. matters. Please contact the most relevant person or, if unsure, write to P.O. Box 290, North Adelaide, 5006, and your enquiry will be passed on.

National Director

Lance Mitchell (03) 720 1205 (h)

National Standards Director

Chris Brown (08) 269 5793 (w&h)

Business Director

Lisa Bernasconi (055) 62 9583 (h)

Treasurer

Wayne Wilson (03) 338 2975 (h)

Training Manager

Greg Bulling (08) 265 4978 (h)

Instructor Training Manager

Tony Richardson (03) 754 6163 (h)

Site Access, Mapping & Research Manager

Peter Horne (08) 295 6031 (w&h)

Representatives:

S.E. - Phil Argy (087) 23 0879 (h)

WA - Andrew Poole (09) 249 4048

NSW - Neil Vincent (043) 97 1798 (h)

Regional Training Co-ordinators:

WA - Hugh Morrison (09) 344 1562 (w)

NSW - Terry Cummins (02) 888 5899 (w)

C.D.A.A. Publications

Vic. - Sue Riddle (03) 762 3471 (h)

SA - Max Marriot

Records Officer

Glenn O'Connell (03) 465 5235 (h)

Guidelines Editor

Peter Girdler (08) 259 5497 (w)

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For our members to receive this offer, you must quote this booking number: **00940**. Also you must mention that you are a CDAA member mentioned.

Upon arrival, your membership card needs to be shown, and the number quoted.

The membership card must be shown at the restaurant to receive the special dinner offer.

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LETTERS

I am interested in the opinion of Directors and other members, on what may be considered a supplement to the recently added Guidelines "Rumour File".

We occasionally hear along the grape vine of members who have had their privileges withdrawn due to inappropriate actions or activities. I feel that it would be worthwhile publishing these at regular intervals for a couple of reasons:

1. To act as an additional incentive for members to "do the right thing"; and,
2. Particularly where instructors may be involved, it would assist up-and-coming members in their choice of instructor for future courses which they may be undertaking.

Adrian Kingsley Richards, CDAA 1769

IF YOU WISH TO CONTRIBUTE TO THIS COLUMN, PLEASE SEND YOUR TYPE-WRITTEN LETTERS TO:

THE EDITOR, GUIDELINES
P.O. BOX 290 GOLDEN GROVE, SA. 5006

BUSINESS DIRECTOR'S REPORT

by Lisa Bernasconi

It seems like a long time ago, but the A.G.M. was quietly uneventful. There was a good turn-out of about 50 people and the accountant's Financial Statement was well received. The Statement, along with a Summary of the Minutes, was printed in the last mailout.

I apologise that there are no duty statements in this issue, as they were lost in the mail and there was not enough time to reproduce them.

Our 20th Anniversary weekend was a huge success. Anyone who wasn't there really missed out. The venue was the Presidential Motor Inn and they have now offered all members a special discount. The information is printed in this issue. All the Landowners, both property and government, were presented with Certificates of Appreciation and 20th Anniversary windcheater, and both were extremely well received.

Thanks to everyone who has requested raffle books but there are more to sell. Please contact myself on (055) 62 9583 or Pete Girdler on (08) 380 5205 for raffle books to be distributed to you for selling.

Just as a final part on my report. On our Anniversary Weekend it seems I made a comment that has upset a few people. The statement being "I would prefer it if we didn't have a guide system", or something to that effect. This was in no way meant to undermine or insult the hard, often unrewarding, work that the guides do. I understand completely that without guides there are a number of long closed dives and some new ones that we would not be diving except for their long hard work at getting them open. Also then, all the follow-up that comes by giving the landowners what they want. My comment was simply made by a cave diver who remembers diving when there were no permits and no guides - a time we can no longer go back to. I apologise to anyone who misunderstood my "off-the-cuff" comment.

FRONT COVER FEATURE

CDAA 20th ANNIVERSARY PHOTOGRAPHIC COMPETITION RESULTS

The winner of the 20th Anniversary Photographic Competition, judged at Mount Gambier during the Workshop Weekend on 9th and 10th October was Peter Rogers. The winning photograph is reproduced on the front cover of this issue of Guidelines, titled "Tap Dancing in Tank". The site of the photo was Tank Cave, and the two divers are Dave Warnes and Phil Prust. Technical details used to achieve this result follows:

Camera: Nikonos 5
Lens: 15mm
Film: Kodachrome 200 ASA
Lighting: Ikelite 150 strobe on camera
4 slave strobes on divers (of which, only 3 went off!)
Manual strobe speed: 1/90th second

First prize is an Oceanic Omega II Regulator (donated by Oceanic Australia Pty Ltd). Congratulations is extended to Peter Rogers.

Second prize went to Ian Gothard. He receives an Underwater Kinetics UK-400 and Mini Q-40 lights (donated by Scuba Industries). Well done.

Third prize winner was Richard McDonald, who receives two years free CDAA Membership.

Thanks to all those who supported this competition with donations and entries. Some of these entries will be featured in the future issues of Guidelines.



CDAA NEWS

FEEDBACK TO MEMBERS

We have received several enquiries about two particular issues since the AGM.

1. The dive on mixed gases in the Shaft.

The Directorate endorses exploration and will always encourage well-planned expeditions on trials of new diving techniques, however some times these do not fit into the parameters of our Rules and Constitution and this particular venture was one. As such we felt to protect the Association and its members, the Directorate wrote and informed the landowner that within our Rules and Regulations we (the Association) could not officially endorse the dive and any decision to approve the dive as well as the responsibility for accepting the credentials or experience of the divers would be by the landowner and therefore the dive was seen by the Association as a "private" arrangement.

2. Attention all Instructors

The issue of instructor insurance has now been under discussion for 12 months. As we still have some instructors uninsured and as this goes against our Constitution and Regulations, a deadline has been placed on all instructors becoming insured. All insurance will need to be in place by the 31st December 1993. Please contact Lance, Chris or Lisa if you have any queries.

CDAA RAFFLE

The Association is calling for more ticket sellers for our 20th Anniversary Raffle, being drawn on 30 November 1993. Please contact either of the Raffle Co-ordinators - Lisa Bernasconi (055) 62 9583, or Pete Girdler (08) 380 5205, to arrange tickets to be sent to you. All tickets, sold and unsold, are to be returned to the Raffle Co-ordinator who issued your tickets, by 15 November. To make this raffle a success - we need your help!!!

CLOTHING & PUBLICATIONS POSITIONS

Thanks to all those people who enquired about the clothing and publications positions. The new clothing representative is Jacqui Wilson (03) 338 2975 (h), and publications will be represented by Sue Riddle (03) 762 3471 (h) and Max Marriot (phone to be advised).

NEW CDAA CLOTHING RANGE

The much-awaited new clothing range has arrived! Fabulous quality, 100% Australian-made products will be available from October.

The new range includes a great CDAA T-Shirt and Windcheater in Airforce Blue, and, in celebration of the 20th Anniversary of the CDAA, a fantastic range of Anniversary products.

Also, in the fashionable Airforce Blue, a limited edition Anniversary Windcheater and Anniversary Long-sleeve T-shirt.

Remember when ordering - these items are a generous fit. Support the CDAA by wearing these great new products.

Order now before stocks run low.

T-Shirts	\$15.00	M, L, XL
Windcheaters	\$28.00	M, L, XL
Anniversary Items		
Long-sleeve T-Shirts	\$18.00	M, L, XL
Windcheaters	\$30.00	M, L, XL

Remember - please add \$5 for postage and handling.

MEMBERSHIP EXPIRED?

If your membership expired on 30th June 1993, a late fee of \$20 will be applicable if renewal fees are paid after 1st November 1993. Annual Membership fee is \$40, two-years \$80. Please note that the new Records Officer, Glenn O'Connell, can be contacted, before 9pm, on (03) 465 5235.

"ADDICT" CONTACT NUMBER

The contact phone number for ADDICT is Colin Jevons on (08) 381 4253.

LANDOWNER ACCESS LETTER

Inside this edition of Guidelines you will find a copy of the Landowner Access Letter, which should be photo copied and used any time you write to landowners, requesting permission to dive on their sites.

20TH ANNIVERSARY STICKERS

This issue of Guidelines contains a commemorative sticker of our 20th Anniversary year.



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CDA 20th ANNIVERSARY WORKSHOP CELEBRATION

by John Dalla-Zuanna

The CDA celebrated its 20th Birthday with a weekend of workshops, lectures, photo competition and a gala dinner.

The two-day format, held at the Presidential Motor Inn in Mount Gambier, included the following topics:

- An introduction to research and mapping (Ken Smith)
- Tank Cave - our newest penetration site (Phil Prust)
- Tank Cave video (Tony Carlisle)
- Long distance penetration diving, Nullarbor style (Chris Brown)
- Cave diving - past and present (Peter Rogers)
- A diver's guide to Mexico's Yucatan Caves (Andrew Wight)
- Cardiac stress and the mammalian reflex (Adelaide Hyperbaric Unit)
- Bubble monitoring with dopplers (Adelaide Hyperbaric Unit)
- Shooting videos in caves - all you need to know (Tony Carlisle)
- Running your own Nullarbor trip - all the details (Adrian Richards)
- Twin tank seminar - the latest on twin systems (Barry Heard)

These free lectures and workshops were attended by about 70 members, who all agreed that the presentations were very enjoyable, informative and world class.

The weekend also hosted the photographic competition (details on page 3 in this issue).

A special thanks to Russell Kitt at Oceanic, and Jim Holliday at Scuba Industries for their donation of prizes.

Undoubtedly, the highlight of the weekend was the Anniversary Dinner with approximately 80 members and 40 landowners enjoying a delicious 3-course meal topped off with a spot of dancing and some serious elbow bending (many chose to leave their diving gear at home!).

During the dinner, the landowners were presented with a Certificate of Appreciation for their 20 year support of the Association. The CDA also honoured three of its long serving members present at the dinner - Dave Warnes, Phil Prust and Brian Davies. They then cut the specially prepared CDA (complete with logo) birthday cake.

Many thanks go to the many people for their involvement as presenters, or as workers behind the scene, but a special thanks should go to Tony Davis for co-ordinating the weekend.

The weekend brought together many people - past and present - and for some, like myself, it was good to see some old faces and talk of old times. At the same time, the newer members showed an exuberance which will not doubt take the CDA to many more birthdays yet!

Congratulations and Happy Birthday to the CDA!

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20th ANNIVERSARY GALA DINNER



More photos on page 14.

ILLEGAL ACCESS TO "NETTLE-BED CAVE" (5L290)

by Peter Horne

During the past few months, the locks on the Nettle-Bed Cave gate have been removed by unscrupulous individuals who no doubt were not prepared to wait for current delicate access negotiations to be finalised for this site.

Nettle-Bed Cave and the nearby Iddlebidy Cave are two special sites with respect to local and State Aboriginal community concerns and interests. Human remains and a number of very old artefacts and markings have been found in these caves, proving that they require more delicate access negotiations involving not only the landowners, but the Aboriginal Affairs Department and the local Aboriginal community (as well as the Police Department and the State Coroner's Office in the case of Iddlebidy).

Since the discovery of Nettle-Bed as a diving site several years ago, the CDAA has been working with the support of the Aboriginal Heritage Branch of the Department of Environment and Planning (and now Aboriginal Affairs Department staff) in our attempts to reach a suitable arrangement whereby Nettle-Bed and Iddlebidy can eventually be visited by recreational cave divers, once suitable protection mechanisms are put in place (e.g. information boards and wall-protector mesh, etc.). However, the recent illegal diving activities in Nettle-Bed have seriously undermined these ongoing negotiations by highlighting the irresponsibility of some members of the cave diving community (whether they are members or not ... and I suspect that they are).

Under the Aboriginal Heritage Act 1988, and quite apart from other trespass laws with which most members would be familiar, damaging, disturbing or interfering with Aboriginal sites (and both Nettle-Bed and Iddlebidy are formally registered as being such sites) by any person can bring a **penalty of \$10,000 or imprisonment for 6 months.** I would therefore ask members or others who

believe that they may be able to assist in identifying the culprits who were responsible for this latest vandalism to contact the Association so that appropriate legal action can be taken if any apparent damage was done to the cave.

The project leader of the Nettle-Bed Cave Research Project, Grant Pearce, and I have been constantly endeavouring to resolve this issue during the past 24 months, but with the recent involvement of a new archaeologist, the "Mabo" issue (which has just surfaced), ongoing lack of support for urgent action by the Aboriginal Affairs department and various heritage aspects which still need to be addressed by numerous involved parties, a satisfactory resolution has not yet been agreed upon. Illegal break-ins during such complex and emotionally-charged negotiations can only compromise all that we have achieved to date, and seriously jeopardize further negotiations.

This latest act of vandalism highlights the fact that some divers have no concern for the work that CDAA researchers and negotiators undertake in their own time (and largely at their own expense) for the benefit of the Association ... not to mention our view that such work demonstrates to the world that the CDAA has the foresight to properly research new sites, covering all important aspects pertaining to such discoveries (unique life-forms, palaeontology, archaeology and Aboriginal occupations etc.) before recreational access is arranged. Such research is absolutely vital in determining whether a new site can appropriately handle visitors on a regular or restricted basis, and special emphasis is placed on protecting the site and its features.

In view of all of this, and since gates are really only good for keeping HONEST people out, I would like to again ask members to please be patient while these rather difficult arrangements are being finalised. **G**

THREE SISTERS CAVE

by Greg Bulling

One of the dive sites which is less frequently visited by cave divers is 3-sisters cave. Named after it's three window entrances (two of which are now blocked off), it is located on the Glencoe Road not far from the Millicent Road intersection.

The cave has a Penetration rating due to an underwater restriction but this is not its only hazard. Firstly, divers must climb or abseil from the roof window entrance some 20 metres to a large talus slope. Unfortunately the entrance is slightly offset which makes lowering of equipment a little cumbersome. It would also make the removal of an injured person quite difficult.

Until recently, the cave has been closed while a new access arrangement was negotiated with Millicent Council.

As mentioned, the underwater section of the cave has a rather tight restriction. One of the aims of my recent visit was to ascertain what equipment requirements would be most suitable for the site, as most diving in the past had been done using only single cylinders.

One of the initial hazards we found was well and truly above water - a large brown snake, who took a fancy to crawling over our gear as we tried to kilt up!

Once underwater the most obvious route leads to the restriction which is found not far from the entrance lake.

It takes the form of a large rock slab which slopes steeply downwards. Above the rock slab the roof slopes down at a similar angle creating a wide but low section of cave. During our dive all three members of the dive team used side-mounted cylinders and encountered no difficulty at all in passing through. Having said this, attempting to pass with large back mounts would be a different proposition altogether. Although certainly possible, it would be a difficult task with the likelihood of significant delays as individuals make their way through in single file. Of course this type of situation can lead to some stress during the exit, especially if you are the last person out!

Once through this area a sharp left turn brings you into a large single room which reaches a depth of 37 metres. The walls of the cave are clean white limestone and the visibility

is excellent.

If penetration divers are interested in diving the 3-sisters, I would recommend the following:

1. they are proficient in rope and ladder work.
2. they have experience in low visibility diving through restrictions (eg. Engelbrechts West)
3. they have a streamlined cylinder configuration either side-mounts (see future article) or small sized backmounts (eg. 40 c/ft steel cylinders)
4. They have a liking for hungry brown snakes!

Application to dive the 3-sisters can be made by contacting the CDAA Site Access Manager (see the inside cover of Guidelines).

Good luck!

CDAA 20th Anniversary 1973-1993

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CAVES, CARBON DIOXIDE & YOU

by Gary Smith

Published with permission from the Australian Speleological Federation (A.S.F.)

Carbon Dioxide often occurs in high concentration at the bottom of deep caves. It is a colourless, odourless and noncombustible gas which is over one-and-a-half times denser (heavier) than air.

Effect of CO₂ on the Human Body

Although carbon dioxide is not a poisonous gas, it can be dangerous and even life threatening by causing suffocation. Carbon dioxide (CO₂) is the body's regulator of the breathing function. It is normally present in the air at a concentration of 300 parts per million (ppm) by volume. Any increase above this level will cause accelerated breathing and heart rate. A concentration of 10% can cause respiratory paralysis and death. In industry the maximum safe working level recommended for a 8 hour working day is 0.5% (5000ppm by volume). (CIG 1991.)

Are you placing yourself at risk by going caving?

Before answering this question we should study certain aspects of the CO₂ cycle dealt with in the following text.

How CO₂ gets into caves

Carbon dioxide exchange is the dominant mechanism for carbonate deposition in most caves. In well ventilated caves the level is about 10 times higher than that of the outside atmosphere, and approximately 25 to 250 times lower than the CO₂ content of the ground water before reaching the cave. This is because plant roots and soil microbes give out carbon dioxide as part of their life processes, adding it to the air in the soil through which the rain water passes. When the ground water enters the cave, it loses carbon dioxide to the cave air until equilibrium is reached.

It is a popular myth that if the level of carbon dioxide (CO₂) increases in a cave, it conversely displaces an equivalent quantity of oxygen (O₂) and nitrogen. In many caves this may be true, however there are caves where the nitrogen level stays constant while the oxygen level decreases and CO₂ increases.

At Bungonia Caves (NSW), CO₂ levels of up to 6% have been linked to micro-organisms (ie. fungi and bacteria) which depend on the

nutrition present in organic material leached down from the soil or washed into the caves by floods. These organisms produce CO₂ as a by-product of their digestion process. This mechanism was observed to correlate with the reduction in oxygen accompanied by the increase in CO₂ concentrations. (Crawshaw and Moleman 1970.)

At Bungonia it is generally agreed that foul air accumulation by loss of CO₂ from saturated ground water was not the major source, but a contributing factor. High levels in some caves can be attributed to micro-organisms and/or large bat colonies.

In 1958 members of S.U.S.S. confirmed that readings of up to 13.5% CO₂ at Wellington and Molong Caves were at the expense of oxygen. ie. the sum of CO₂ and O₂ was constant and the percentage of inert gases was reasonably constant. They also concluded that this was due to organic decomposition. (E. Halbert. 1972).

Although caves naturally breathe due to changes in surface temperature and changes in atmospheric pressure CO₂ is heavier than nitrogen and oxygen, so it tends to congregate at the bottom of deep caves which do not have through ventilation to a lower entrance.

What percentage of air do we use?

To get a complete insight into what actually occurs when a caver is exposed to a cave atmosphere, which contains higher than normal levels of carbon dioxide (CO₂), we should examine the mechanism by which our own body expels this unwanted by-product of metabolism.

The human body under average conditions inhales air which contains approximately 21% oxygen and 0.03% carbon dioxide. The air breathed out of the lungs contains approximately 15% oxygen and 5.6% carbon dioxide.

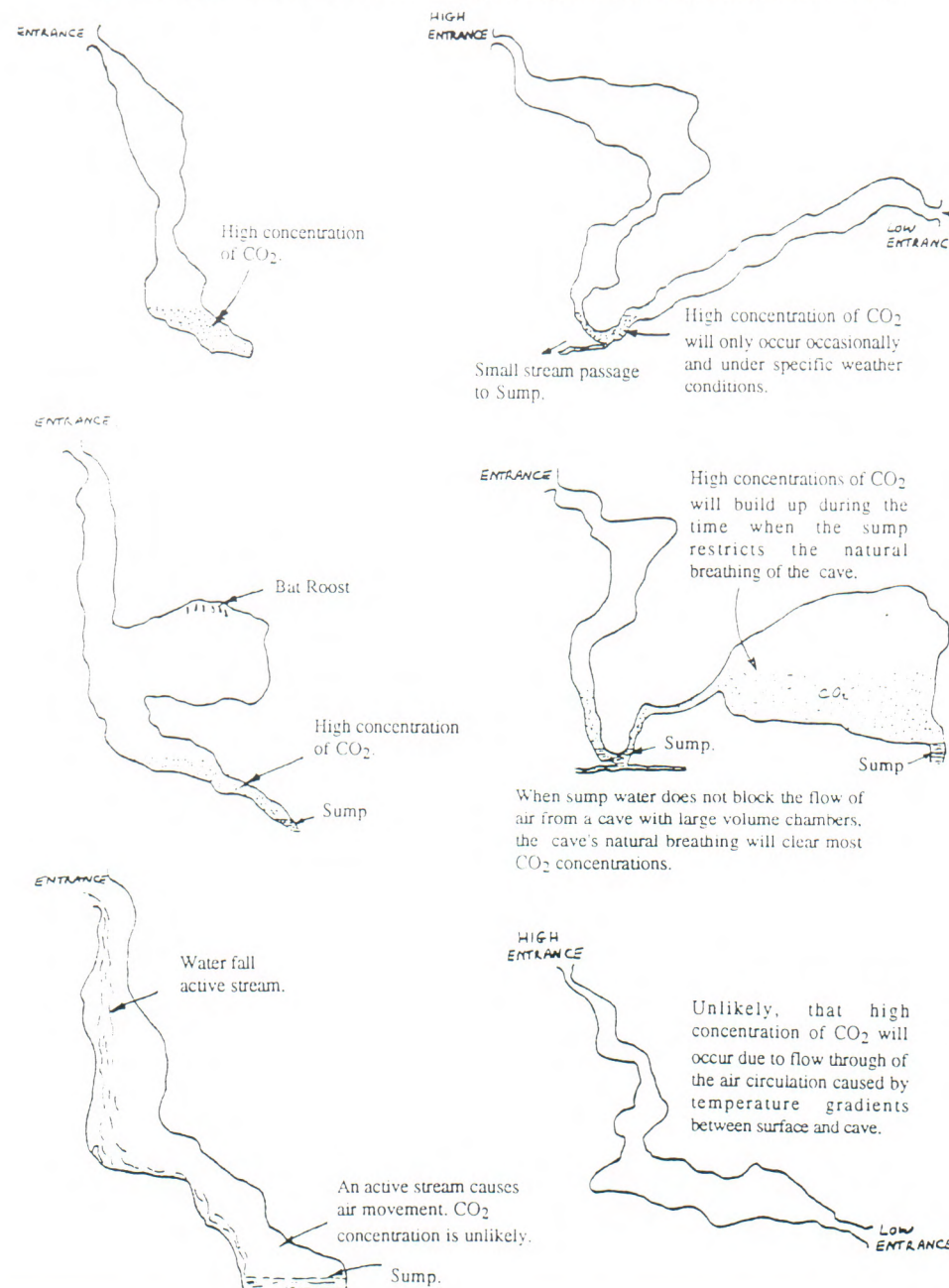
A person at rest inhales and exhales approximately 6 litres of air per minute but in times of stress, this may increase to more than 100 litres per minute. The lungs do not expel all of the air with each breath. The volume of air that moves in and out of the lungs during each breath is known as the tidal volume. The

Continued on page 17

CAVES, CARBON DIOXIDE & YOU

Figure one: Cave Sections

Showing the most likely conditions under which high concentrations of carbon dioxide is found in caves.



CAVE DIVERS' MOVE TOWARDS THE DRY ALTERNATIVE - PART 2

Continued from previous issue - Guidelines No. 48 - July 1993

Most dry suits carry zippers across the shoulders. Named "shoulder entry" suits, the diver is required to request assistance when donning the suit as even the most dexterous individual would place too much stress on the waterproof zipper if they attempted this alone. Climbing in and out of a sinkhole requires a certain amount of freedom in the arm movements and can cause the diver to overheat due to exertion.

It is rumoured that a self-donning style of suit puts an unnecessary load on the zipper when donning and/or doffing. This has been overcome with the development of suits manufactured with the "telescoping torso" - a fancy name for extra material in the torso area to allow the diver to lift the neck seal comfortably over the head without placing any stress on the zipper or crutch area. The suits are equipped with suspenders on the inside which hold the crotch firmly in place. An added crotch strap keeps the suit in place by holding the top half down allowing greater arm and leg mobility. This design, in spite of the extra material, offers a snug fit regardless of insulation thickness or body weight and most importantly eliminates that "baggy" crutch.

For those more adventurous cave divers, dry suits can have a number of disadvantages. "The placing of the valves is a major consideration when squeezing through those tight crevices," said Cavanagh. "A valve that protrudes could get damaged. It is therefore



Buoyancy must be mastered. It is advised that cave divers practise vertical control prior to entering a cave system.

certainly worth asking for valves to be placed in the most effective but least vulnerable positions." Perhaps the diver reliant on valves should consider a redundant system.

A close fitting dry suit is also important to the cave diver. Whereas a deep diver or general sport diver is not impaired by creases in the suit when pressure causes it to squeeze tightly to the body, the cave diver may require to push his/her body closely against rocks and every protrusion and crease will effect smooth manoeuvrability. The denier nylon suits will create hard crease lines in the material when squeezed. This is not a consideration if the diver is not expecting to do close fitting penetration. Another problem can be caused with the wearing of double layers such as protection jackets. These can retain water creating a larger surface area and greater drag.

Divers intending to purchase a dry suit should consider extra buoyancy training. Training to date will have involved buoyancy control using a BCD. Typically, the BCD, fitted around the torso, controls buoyancy in the upper body. A dry suit however offers more controlled overall **trimming techniques** allowing divers to swim "feet up and head down", a definite advantage in a silty cave. The extra training/practice will be required to perfect the "trimming" techniques. Most cave divers are extremely experienced and this new form of diving may well throw them off in the initial stages. Typically, the novice diver adapts to dry suits much quicker.

Another reason for training is the control

Continued on page 20

by Tracy Morgan



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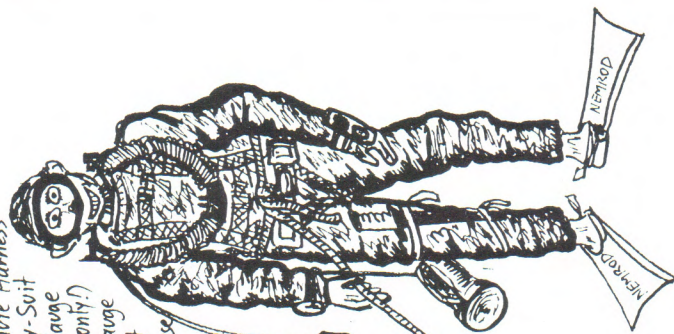
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CONTACT: GARY BUSH

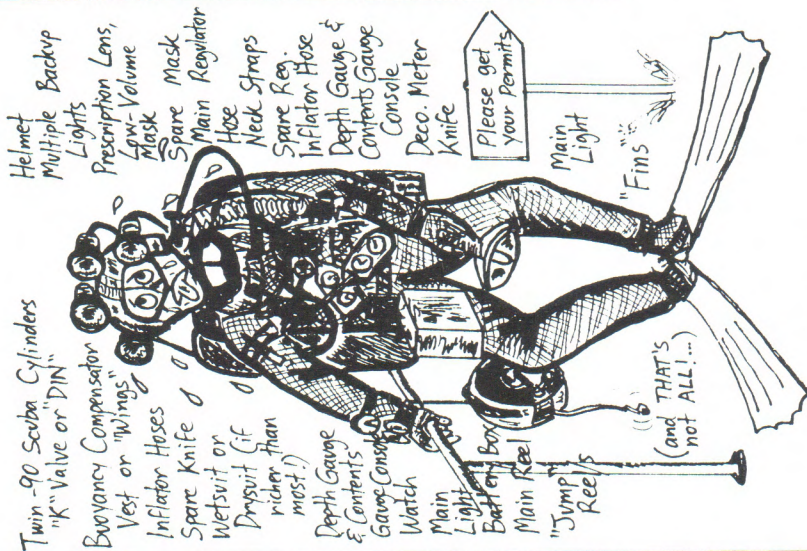
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meter
"Flippers"
Watch



"YESTERDAY"

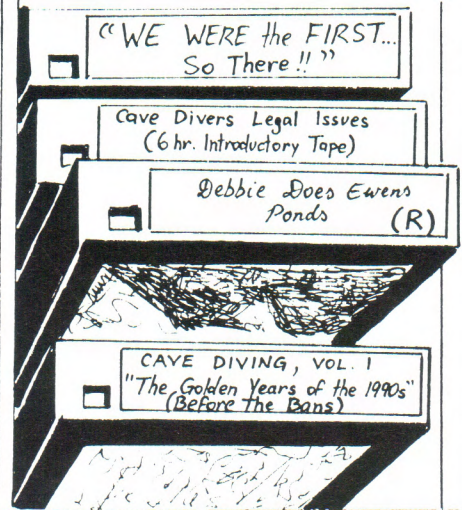


"TODAY"

Twin - 90 Scuba Cylinders
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Wetsuit or
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richer than
most!)Depth Gauge
& Contents
Gauge Console
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Battery
Main Reel
"Jump"
Reels
(and THAT'S
not ALL!)Helmet
Multiple
Lights
Prescription Lens,
Mask
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Hose
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Contents Gauge
Console
Deco. Meter
Knife
Please get
your Permits

"Fins"

VIDEO CENTRE
NOSTALGIA:
SPORTS



P. Horne
Oct 1993

Tomorrow?

CAVES, CARBON DIOXIDE & YOU

Continued from page 10

maximum possible tidal volume is equal to the vital capacity. The vital capacity is the amount of air that the lungs can hold after trying to force out as much air as possible and then taking the deepest possible breath. The amount of air left in the lungs after trying to breath out as hard as possible is the residual volume. It is impossible to empty the lungs of all air in this manner.

For an average adult, approximately 500 millilitres (ml) of air is drawn into the lungs with each breath during normal breathing. But of this 500 ml of tidal volume, only 350 ml is fresh air as the first 150 ml is "dead" air already in the nose, trachea and bronchi. The 350 ml of fresh air represents only approximately 6% of the lung's maximum total capacity which is about 6000 ml (6 litres).

How the human body gets rid of CO₂

Normally a person is unaware of the complex mechanisms of breathing which are regulated and controlled by the respiratory centre of the brain and the nervous system.

The carbon dioxide level in the blood is an

important stimulus to respiration. Nerve receptors in the aorta near the heart and in the carotid artery that goes to the brain, monitor changes in the carbon dioxide in the body. If the amount of CO₂ in the blood increases, both the rate and depth of breathing increases. Changes in oxygen levels are also monitored, but the receptors are not as sensitive to changes in oxygen as to carbon dioxide.

The exchange of the two gases (carbon dioxide and oxygen) takes place in the lungs by diffusion across the walls of the air sacs (alveoli). Oxygen from inspired air diffuses across the lining of the air sacs and enters the circulation, while carbon dioxide moves in the opposite direction. Then the gases are transported between cells and the lung by the blood circulation.

The principle by which diffusion occurs dictates that a gas in high concentration will move to an area of relatively low concentration, until an equilibrium is reached. This enables CO₂ in the body at a higher concentration to diffuse to the inhaled air.

Continued next issue

"SEE" THE DIFFERENCE

DIVE RITE NEUTRALITE HI INTENSITY LIGHTING SYSTEMS TRULY MODULAR LIGHTING AT ITS BEST

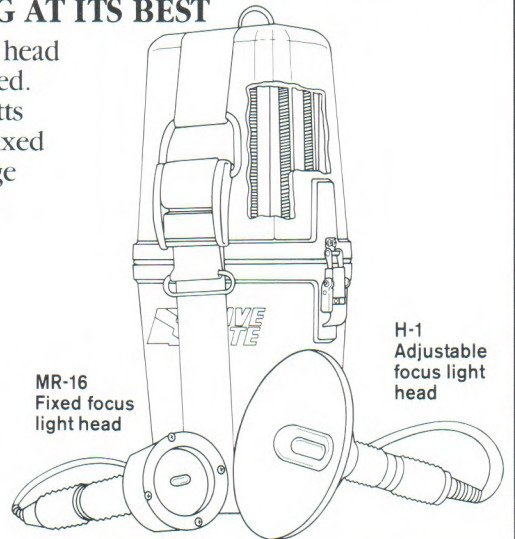
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H-1
Adjustable
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head

SITE ACCESS: A PRIVILEGE, NOT A RIGHT

by Stan Bugg, CDAA 96

As I write, more dive locations than ever before are open to CDAA members. Access to some of these places, previously closed, has been hard won, and is a credit to the patience of certain CDAA officers, and to the willingness of landowners to accommodate our requests.

The various access arrangements may seem a bureaucratic nightmare to some members. From my own point of view, remembering how close we came to facing closure of ALL dive sites in the mid '70s, these arrangements offer little inconvenience. In fact it is now possible to book sole access to a cave, e.g. Pics, Barnoolut, Shaft, Iddlebidy, which makes planning a weekend's diving much easier.

Other new arrangements also impress me, for example the 24 hour pickup of permits from Primary Industries S.A., and the efficient and friendly service we enjoy from the staff at the tourist centre when we collect keys for Englebrechts and Allendale. All of the above are relatively recent arrangements, and they show us that the Mt Gambier community is doing its best to provide us with what we want . . . to access to the caves.

Unfortunately too many members see access as a right which comes automatically with membership, and do not see that they have responsibilities to fulfil. We divers must realize that we do landowners no favours by entering their property. In fact the favour is being done for us, as the farmer has to stop productive work to wait for us, check cards, and check us out after the dive.

Every group entering brings with it the risk of gates left open, stock harassed, litter, fires, and litigation against the landowner by the diver. No wonder several landowners have required us to sign a contract!

Yet some members seem to do everything possible to give the Association a bad name when they visit dive sites.

The presence of litter is especially annoying. Surely divers could follow the bushwalker's creed of carrying out anything that they bring onto the property. The same goes for human waste. I personally would think that the 18 year age-limit for cave divers

would ensure that all members were TOILET TRAINED, and able to plan their day well enough not to need to CRAP behind every tree and bush within sight of a dive hole! Those who must "GO" would help if they at least buried the evidence, including the paperwork.

Even underwater, some divers show little regard for the impression they leave. Graffiti permanently scars most caves . . . an act of mindless vandalism, made even more stupid when these people write other people's names on the walls! How do I know? Simple. Everyone I know can spell their own name correctly! It is my impression though, that the graffiti problem has reduced significantly over the last ten years, and hopefully this trend will continue.

Several caves are being observed closely as to the impact of diver traffic on their closed environment. Examples of this are McKay's, Iddlebidy and, of course, Pics. Therefore how we treat these caves and their surroundings will affect access for years to come.

Other sites are closed to general diving pending finalization of access arrangements, e.g. Three Sisters, Tank Cave. Members who are anxious to dive these locations should be patient, and look to the excellent record of the Site Access Committee over the past decade.

The trend over the last ten years has been of increasingly easy access, rather than closure, for which all members should be grateful. It is testimony to the hard work by our representatives behind the scenes.

So rather than complain about how much red tape must be crossed to get to dive, stop and consider two important aspects:-

1. The amount of work that goes into gaining and retaining access, especially to caves previously closed.
2. The role YOU and your buddies must play in keeping caves open, by leaving a favourable impression with landowners, rangers and others you come into contact with as you pursue your sport.

Cave Divers Association of Australia 20TH ANNIVERSARY RAFFLE

Due to some unforeseen problems with permits, etc., the draw date for our Anniversary Raffle has been changed.

New draw date: TUESDAY, 30 NOVEMBER, 1993

All winners will be notified by mail, and their names will be published in the Adelaide Advertiser, Thursday, 2 December, 1993

WE NEED YOUR HELP!!

The only way this raffle will be a success is if you – the members – pitch in and sell tickets.

**PLEASE PHONE EITHER OF THE RAFFLE
CO-ORDINATORS TO ARRANGE TICKETS:**

- ▶ **LISA BERNASCONI (055) 62 9583**
- ▶ **PETE GIRDLER (08) 380 5205**

All monies and unsold tickets must be returned to the raffle co-ordinator by 15th November, 1993.

1st PRIZE: \$1000 TRAVEL VOUCHER

Applicable to local or overseas travel

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To the value of \$400**

**3rd PRIZE: DINNER
At a restaurant of your choice, to the value of \$100**

TICKETS \$2 EACH

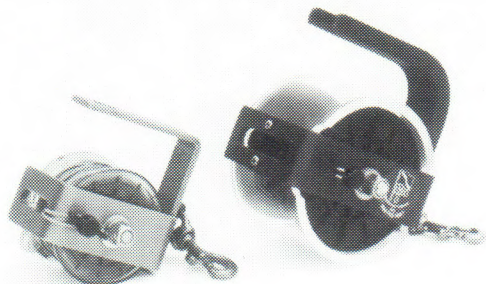
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Professionally made using one piece injection moulded spools and anodized alloy frames. Each DIVE RITE reel comes with line and handy gear clip.

When you put your life in the hands of a piece of equipment, you want to be sure it works.

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CAVE DIVERS' MOVE TOWARDS THE DRY ALTERNATIVE - PART 2

Continued from page 12

required when experiencing vertical changes. Without complete familiarity the diver may find that he/she has too much air in the feet and/or shoulders and find the vertical shafts a little difficult to master immediately.

Finally, a cave diver is advised to consider a dry suit with removable hood. With the additional anxiety created underwater in a cave and the exertion often required to manoeuvre successfully through a crevice, it is important that the diver can cool down. A removable hood is a necessary advantage.

Like all new diving devices being introduced, training and familiarity together with a wise purchase is the answer to safe diving practices. Dry suits are believed to be the answer to thermal considerations and have been successfully utilised in all forms of cold water diving across the world. With the added advantage of membrane technology allowing

for adjustable thermal protection whether in warm or cold waters, the practiced dry suit cave diver will have one less consideration to concern himself/herself about, remaining thermally protected.

INSTRUCTORS' CORNER

This section of the magazine is devoted to instructors to use as a means of communicating with each other about any instruction or standards matters. Please use freely.

WANTED: Instructors who are willing to help with proof reading standards or instructional material. Any instructor who feels as though they can contribute please contact Greg Bulling (08) 265 4978.

CDAA INSTRUCTORS

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) 269 5793
Marilyn Boydell	•	•		WA	(09) 349 5646
Stan Bugg	•	•	•	VIC	(03) 379 8791
Greg Bulling	•	•	•	SA	(08) 265 4978
Gary Bush	•	•		VIC	(03) 510 9081 (w)
Paul Cavanagh	•	•	•	NSW	(02) 804 7888
Terry Cummins	•	•		NSW	(02) 417 2800 (w)
John Dalla-Zuanna	•	•	•	VIC	(055) 62 9583
Ian Gothard	•	•		VIC	(03) 486 1810
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
Max Marriott	•	•		SA	(08) 47 3360
John McCormick	•	•	•	VIC	(03) 579 0570 (w)
Richard McDonald	•			SA	(08) 278 1829
Warrick McDonald	•	•		VIC	(03) 579 2600 (w)
Richard Megaw	•	•	•	SA	(08) 344 1733
Hugh Morrison	•	•	•	WA	(09) 409 9807
David Ogilvie	•			NSW	(02) 417 2800 (w)
Tony Richardson	•	•	•	VIC	(03) 754 6163
John Vanderleest	•			VIC	(03) 416 9370
Des Walters	•	•	•	NSW	(060) 25 3506
Bob Wealthy	•	•	•	VIC	(03) 789 6389
Liz Wight	•			NSW	(02) 428 2176
Frank Ziegler	•	•	•	VIC	(055) 26 5288

CDAA SHAFT GUIDES

GUIDE	Telephone (h)
Paul Arbon	(08) 265 2098
Greg Bulling	(08) 265 4978
Chris Brown	(08) 269 5793
Tony Carlisle	(08) 2998 5516
Peter Horne	(08) 295 6031
Phil Prust	(08) 370 6000
Tony Richardson	(03) 754 6163
Peter Rogers	(03) 527 7969

Refer to Guidelines 42 (Jan 1992) for specific conditions and requirements to dive The Shaft.

NOTE: Only Shaft guides are to contact the land owner.

CDAA SITE ACCESS

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

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

SITE	LEVEL	OWNER	ACCESS DETAILS
MOUNT GAMBIER - SOUTH AUSTRALIA			
Ewens Ponds	Nil	DENR P.O. Box 1046 Mount Gambier (087) 35 1177	Groups of 6 or more, phone/mail to Dept. of Environment & Natural Resources (DENR). Smaller groups, no need. Ponds usually closed 1 Sept. - 30 Nov. yearly (phone to check). Indemnity form to be completed.
Horse & Cart Tea Tree	CN	Peter Cunningham PO Box 643, Mt Gambier 5290	By phone or mail, 1 week prior. Ph: (087) 38 4003
Little Blue (Baby Blue)	S	Port MacDonnell	Little Blue - permission not required - must carry card.
Allendale	C	Port MacDonnell	Obtain key from Mt. Gambier Tourist Information Centre.
Gouldens 2 Sisters Fossil	CN CN C	DENR P.O. Box 1046 Mt Gambier 5290	Contact DENR by phone/mail prior to diving. Stay out of Gouldens when pump is operating. Indemnity form to be completed. Ph: (087) 35 1177
Ela Elap One Tree	S S	Mr. Peter Norman Private Bag 67, Mt Gambier 5290	By phone or drop in before diving. Accommodation also available. Ph: (087) 38 5287
Swim Through	C	Valerie Earl C/- PO Allendale 5291	Currently CLOSED pending new access arrangements.
Piccaninnie Ponds	S	DENR P.O. Box 1046, Mt Gambier 5290	Permit holders by phone. Be aware of delicate vegetation. Indemnity form to be completed. Ph: (087) 35 1177
Hells Hole Pines Mud Hole	S C C	Primary Industries S.A. (Forestry) PO Box 162 Mt Gambier 5290 (087) 24 2759	Contact Primary Industries S.A. (Forestry) by mail or phone to arrange permit. Collect permit from Regional Office, Jubilee Hwy. Mt. Gambier. No diving on total fire ban days. Permits will ONLY be issued Mon-Fri between 8.30am-4.30pm.
Kilsby's	S	Landowner leased to S.A. Police	Contact Peter Girdler. Restricted access conditions apply. (Refer Guidelines 47.)

SITE	LEVEL	OWNER	ACCESS DETAILS
MOUNT GAMBIER - SOUTH AUSTRALIA continued			
Black Hole Ten Eighty Bullock Hole	S S S	Mr. Colin Traeger, Manager, Barnoolut Estate PO Box 12, Mt Gambier 5290 (087) 26 6215	Contact CDAA 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. WEEKENDS ONLY. Closed October-November for shearing.
Max's Hole	C	Mr T. Edwards PO Box 1319 Mt Gambier 5290	Phone or mail 1 week prior to dive. Ph: (087) 26 8277
Shaft	S	Mr & Mrs Ashby	ONLY by contacting designated "guides" who will arrange access. Refer Guidelines Issue 48 (July 1993).
Engelbrechts - East - West	C P	Mt Gambier Council	Obtain key from Mt Gambier Tourist Information Centre. Access agreement must be signed prior to diving.
Three Sisters	P	Millicent Council	Contact Peter Horne or Peter Girdler. Access available for experienced Penetration divers only. Low profile or side mounted independent air systems required. Access agreement must be signed prior to diving.
Iddlebiddy (5L250)	P	Primary Industries S.A. (Forestry) PO Box 162 Mt Gambier 5290 (087) 24 2759	Open 1st & 3rd weekend of each month. Only penetration divers who have completed practical in-water cross-over. Phone Forests Clerk for bookings. 4 divers per group per weekend. Collect key from Lady Nelson. Must show permit.
McKay's Shaft	S	Mr. McKay	Contact Phil Argy (087) 23 0879. Small groups of about 4, good ladder climbing & SRT skills required. Access agreement to be signed prior to diving.
Tank Cave	P	Mr.& Mrs.R. Dycer	Apply in writing to: CDAA Tank Cave Diving, c/- 4 Rosella Street, Modbury Heights, SA 5092. Access conditions apply. (Refer Guidelines 48.)
NULLARBOR - WESTERN AUSTRALIA			
Cocklebidy Murra El Elevyn Tommy Grahams Weebubbie	C P C C	Regional Manager C.A.L.M. 44 Serpentine Rd, Albany 6330	Must apply for permission to dive at least 4 weeks in advance of trip. Ph: (098) 41 7133. Small dive site next to main chamber: Sinkhole
NULLARBOR - SOUTH AUSTRALIA			
Warbla	P	N.P.W.S. Ceduna	Currently CLOSED to all diving subject to draft management policy.

CDAА PRODUCTS

Please send orders, with cheque or money order ONLY, to
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BOOKS/VIDEOS

Cave Diving Communications. A new manual from NSS-CDS dealing exclusively with all u/w communications used in cave diving. Including touch, torch & line signals, & use of line arrows & jump reels. A must for all cave diver's bookshelf.

Cave Diving. A Blueprint for Survival. By world-renowned cave diver Sheck Exley, this is a case study of a number of accidents that have occurred in the USA and how to avoid them.

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

Cave Diving - The Cave Diving Group Manual. Completely new edition from the pioneers of the sport, the British. This is easily the finest reference manual on our sport currently available. Covers every possible aspect including sump rescue solo diving and advanced oxygen and mixed gas theory. Expensive but well worth it.

CDAА 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.

DES Emergency Handbook - Revised 1990 edition by Lippmann & Bugg. Printed on waterproof paper this essential first aid manual should be part of every divers' kit.

NSS Cave Diving Manual - The standard reference manual in Cave Diving covering just about every conceivable topic. New edition

Research Handbook for Cave Divers - Peter Horne. Written by our most experienced research diver, the book is a compendium of years of experience from various sources. A valuable addition for those interested in the other side of cave diving.

An Advanced Guide to Physiology, Procedures & Systems
- Brett Gillian and Robert Von-Maier

Nullarbor Challenge (Video) - Produced by Hanger 137. The true story of the exploration of the largest single limestone cave region in the world.

CLOTHING - Out they go! To make way for the new range of CDAА Clothing, we are offering all our existing clothing at up to 50% off

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Were \$30 NOW \$15

Windcheaters Navy/white logo, Red/black logo & White/purple logo.

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The Tech 7700 Series Buoyancy System is derived from specialized BC's Zeagle has developed for technical, military and commercial divers. The 7700 Series gives the serious technically oriented diver a system with the features, flexibility and strength necessary to perform under the most demanding conditions. Approximate bladder lift capacity: Single bladder 45lbs, with redundant bladder assembly 88lbs.

Fully redundant twin bladders, with seperate inflators and dump system.

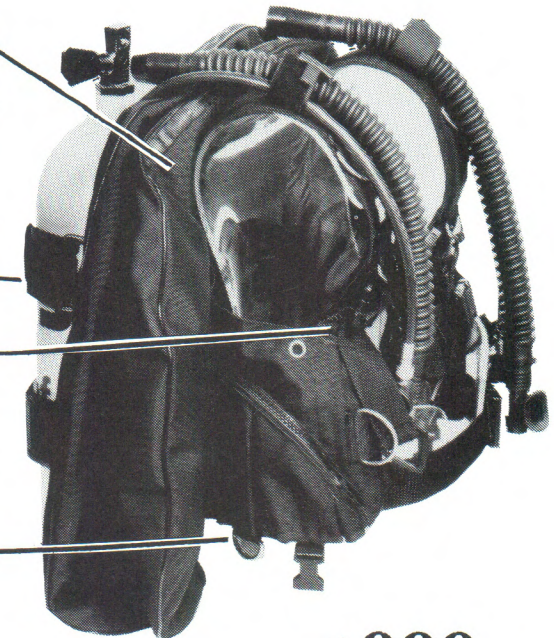
The 7700 Series is manufactured from high-tensile ballistic cloth, which both covers the vest and protects the bladder assembly.

The 7700 Series will accomodate either twin or single cylinders by simply changing the cylinder bands.

The vest incorporates dual waist strap with heavy duty buckles and a sternum strap for added security and stability, regardless of the divers position.

Eight stainless steel D-rings are attached to heavily reinforced tabs at strategic locations, providing for easy attachment of equipment.

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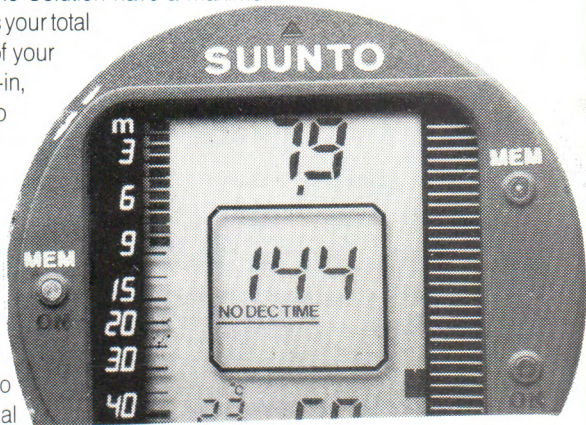
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SUUNTO SOLUTION

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)

LANDOWNER ACCESS LETTER

Landowner/Contact Name & Address

Group Contact: _____

Address: _____

Phone: (h) () _____

(w) () _____

Dear _____

I write to ask permission to enter _____ property/cave for the following persons on the date and times indicated below. Please find enclosed a stamped, self-addressed envelope for your reply.

Members of the Group:

NAME

CDAA No.

CDAA Certification
Level Held

DATE

TIME

LOCATION (in order of preference)

Signed: _____ Date: _____