



C.D.A.A. Newsletter GUIDELINES

No: 72 - JUNE 2000



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Editorial

It's subscription time again... You'll find the form in the middle of Guidelines – Don't be late with your membership renewal. Those late fees are a killer!

I would like to thank Chris Edwards for his help with preparation and proofing of this issue. I have been very busy with work and his input has been very much appreciated. Thanks Chris!

As always, I am on the lookout for articles. So please help!!!

Hope you all enjoy this issue.

Glenn O'Connell
Editor

ARTICLES FOR GUIDELINES

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

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

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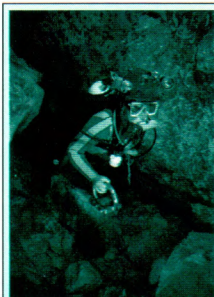
FOR SPACE - APPLY TO THE EDITOR

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

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Front cover:

Margy Wyschnja in
the Engelbrechts
Cave

CAVE DIVERS ASSOCIATION OF AUSTRALIA

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

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

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See insert in centre for details



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Standards Directors' Report

I was appointed to the position by the Directorate at the end of 1999, following the resignation of Glen Harrison after his three year stint of tireless effort. I would like to take this opportunity to join with all the membership to thank Glen for the leadership and forethought that he brought to the position.

In the spirit of progress and innovation shown by Glen, I am hoping to keep the momentum rolling as we move into the new millennium.

Since my appointment I have been faced with both pleasant and less than pleasant tasks, all of which come as part of the job.

It was unfortunate that two of my first jobs were formal investigations into alleged breaches of standards, resulting in one member being suspended for a period of six months for a depth violation and a breach of access protocol. Two members were suspended for a period of twelve months each for double depth violations and a breach in access protocols. An instructor was suspended for a period of two years for multiple breaches of standards. A further member has received a formal reprimand after being observed, by myself, diving solo in a CDAA sanctioned site.

On a lighter note however it has been my pleasure to be involved with the early planning stages of several exciting new projects.

The Directorate has agreed, on provision of landowners final approval, to support several new projects. These projects will encompass technology that, although commonplace overseas and in other areas of diving, is yet to be fully ratified by the association. They will provide a platform by which the technologies can be assessed in a controlled manner to both determine their suitability and to educate all parties concerned.

As we move into the 21st century with all the excitement and promise that the future holds, I would like to take the time to remind everyone that access is a privilege not a right. We are invited onto peoples land so that we may participate in the sport that we love, a sport that would not exist for us without the selfless support of all the landowners.

Paul Axton
CDAA, Standards Director

YES! OZTeK is BACK... **OZTeK 2000**

The Australian Driving Technologies Conference
is back for another year

WHERE? The Convention Centre, Melbourne

WHEN? Saturday/Sunday 08/09 July 2000

(in association with the Boat Show & Dive Victoria Expo)

"The Adventure Continues..."

With a host of International and Local Speakers including:

Olivier Isler, World Record Cave Diver from Switzerland

Gary Gentile, Wreck Explorer & Author, USA

Jarrod Jablonski, from the renowned WKPP Cave Divers Florida

Nuno Gomez, Deep Diver & Cave Explorer returns from South Africa

Tom Mount, CEO of IANTD USA

Jurgen Tilmann of Draeger Diver Germany

Andrew Wight, Film Producer and Explorer from the Adventures of the Quest

Chris Parett, creator of Abyss Dive Planning Software

Bernie Chowdhury, Publisher of Immersed

Dr Simon Mitchell, of the Wesley Hyperbaric Centre in Brisbane

... Mark Spencer, John Riley, David Doollette and more!

Forums on:

Wreck Diving & Cave Diving Explorations

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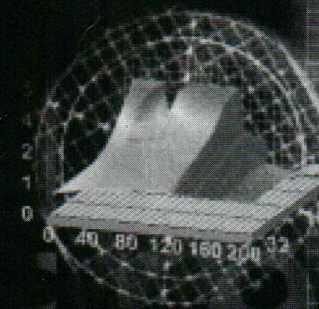
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EMAIL LISTS, WEB SITES AND THE LIKE

As most of you would be aware the CDAA list is no more but there is another list that some have both subscribed and subsequently unsubscribed from. It's at cdaa@topica.com

There are plenty of other information type lists around one of which is: AustTech@ssiaust.com

As is the case with most lists to subscribe is usually easy. For example with the above simply send a blank message to AustTech-subscribe@ssiaust.com

Although both these lists will at times discuss CDAA matters, neither are official CDAA lists and do not necessarily reflect the views of the Directorate.

The Directorate is however currently investigating upgrading the site which was kindly established by Dean Niclasen. We are currently organising an official site with News, contracts, indemnities, on line ordering of products, maps etc.

If any member has specific views about content they would like to see please email Chris Edwards via cedwards@teksupport.net.au

From the Publications and Records Director

GUIDELINES

Well have I been coping some flack of late from the membership re content or lack of it. So I thought I'd search back through some earlier years and guess what I discovered. The membership used to contribute articles and stories. Amazing as it may seem people wrote to the editor about their experiences. Others reviewed products and new locations. These days it seems everyone has become far more insular. Sad really. I look through the publications from other countries and they are publishing extracts from logs, incident reports, research reports *AND* before you think hang on what research, there are members out there doing it for institutions other than the CDAA. Likewise, photos used to be easy to come by. Does no-one take them anymore? Kind exceptions to Neil Vincent and the Quest team. To read what Neil has been up to see his story elsewhere in this issue.



NULLARBOR

There's been several groups out there recently enjoying the diving (including myself) and it was interesting and heartening to read some of the comments in the book at Tommy Grahams. In particular one from the District Manager of CALM being pleased that the site had been left in a clean and tidy state.

BOOKS

Unfortunately Wukulla Springs Project is no longer available. The NSSCDS report that no further editions will be printed so sorry to anyone who had ordered it or were planning to. There have also been some delays with deliveries of some stock ex the United States. I apologise for that, but can do little to speed up the process.

WEBSITE

Progress is now underway and we hope to be have a new official CDAA site open in the very near future. We intend to have available site descriptions and maps, indemnities, course information, products including instructor materials and links to other sites along with lots more. Any strong feelings that any of you have on content, please email me.

NEW RANGE OF CLOTHING

Polar Fleece Jumpers and Vests are now available. Two colours are currently available, Navy and Charcoal Grey. Sizes available at present are medium, large and extra large. Also Beanies (navy only) and Caps (black only). All garments come with the original CDAA logo smartly embroidered. Garments are available either by mail order or from Phil Argy at Blink Bonney Lodge.

Costs for these are:

Jumpers	\$69.95
Vests (<i>great under Dry Suits</i>)	\$49.95
Beanies.....	\$17.95
Caps	\$19.95.

All plus postage.

Having just returned from the Nullabor where it dropped below zero on a number of nights, I can personally attest to the effectiveness of the jumpers.

To make way for this new stock we are selling off the anniversary range at greatly reduced prices.

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Polo Shirts	\$17.50
T-Shirts.....	\$10.00

Chris Edwards

CDAA, Publications & Records Director

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MOOLAN POOLS & ICE CAVES

by Neil Vincent

Ice, broken by the divers entering the water, floats on the surface of the pool. It is not melting. This water is cold!!! So cold in fact, that it should not be water, it should be ice.

The icefields rising vertically 5500 feet above the land locked capital of Alaska, Juneau, seems like an unlikely place to go caving, and an even stranger place to consider cave diving. Inching from the weight of the heavy winter snows of years past, are giant rivers of blue ice, glaciers. The snow that falls on the walls and floors of valleys in high mountain regions tends to accumulate to a great depth. The rate of melting, particularly in wintertime, is far lower than the rate at which the snow falls. As a result, the earlier snows, compressed by later falls, are changed into a compact river of ice.

The lower glacial ice is under such great pressure that any cracks or separations occurring in this layer are quickly healed. The upper layers, however, may suffer tensions and strains from moving over underlying obstructions or from differential movement, in which the center of the glacier moves more rapidly than it's edges. These strains produce crevasses many meters deep, these are ice caves. Special ice caves form when surface melt water streams cannot reach the river which flows at the base of the glacier. This water is trapped and forms what is known as a Moolan Pool.

Just what exists in these rare pools had never been documented, so a film team from Quest Australia Productions set out to do just that, as part of a three month expedition to Alaska. Thoughts of finding remnants or even remains of ancient humans or those of a hairy mammoth frozen deep in the ice filled the team's minds as they headed toward the Juneau ice fields.

Several days spent acclimatising and receiving instruction in traversing on top of, up the side of and under the ice is a lot of fun but an essential part of our survival safety once we moved underground. Our guide's love of the cold conditions of an Arctic winter is difficult for us Australians, trying to come to grips with the cold of an Alaskan ice field in summer, to understand.

A glacier is not a quiet place, even when the winds are still. It creaks and groans, the air is shattered by explosive cracks as differing forces battle over the ice's future direction. The thought, that exploring an ice cave, is travelling inside a glacier which may move at speeds up to one meter each day and change shape constantly, is not mind settling.

When glaciers terminate in dirty gray moraine fields of rocks, boulders, silt and mud, the ice is cracked and broken into towers the size of multistory buildings. These towers are stacked precariously over the river which flows from deep beneath the glacier's ice. It is from this point, access to the inside of the glacier is easiest, it is also the most dangerous in the warmer summer temperatures.

Nevertheless, the terminal point of the Herbert glacier is chosen as the access point for our team into the river carved ice cave. While studying the terrain, to select the best entry route into the cave mouth, a fifty meter section of ice collapsed from above the cave's entrance. Thousands of tons of ice fell to the ground with tremendous roar. This is unsettling the first time it happened; however, a second similar incident forces a decision to try to find a cave leading

from the surface, higher up along the glacier, with less chance of collapse.

Higher caves are rarer as there is less stress fracturing of the ice and the temperature is colder. These higher caves are formed when fractures are increased in size by the sun melting exposed sections then the melt water flowing along stress fractures eroding and enlarging then into caves. Eventually this melt water gravitates to the rock beneath the glacier where it joins the river of cold water flowing beneath the ice.

A search, aided by a low flying helicopter helped to locate a suitable cave in the stable, clean, blue ice. Climbing ropes were securely anchored using sharp ice screws, screwed and frozen into solid ice. Crampons, ice axes and newly acquired skills make the climb down the smooth ice wall of the crevasse possible. The razor sharp crampons attached to our ice





boots are kicked into the wall enabling grip during the descent. The reverse procedure of climbing out will require the ice axes to extend the reach of our arms as we "walk" up the wall.

Light is filtering through the walls and ceiling of the cave. It's blue translucence removes all other colors from the spectrum. Water drips like rain from the ceiling and high walls and special care is taken to ensure no drops are on the lens during filming.

Water flows along the bottom of the cave. We have clad our feet in thick wetsuit boots, within the shells of our ice climbing boots equipped with crampons. Gradually the stream way snakes downward, often turning back on itself, revealing windows of compressed bubble free ice, so clear others can be seen through the walls. Sounds reverberate, creaking ice, running, falling water and

even our excited voices are trapped by the narrow, twisting passages of the labyrinth. Concerns about being inside this living ice block are discarded, this is not the place to think about such things. Our minds are occupied with safely traversing the terrain with which we are confronted and transferring the images in our mind, onto film, for those who could not be here to witness such wonder.

Air temperatures feel warmer than their range of two and zero degrees Celsius, perhaps the noise, the excitement and our concentration all combine to produce excess adrenaline in our bodies. Wearing seven millimetre thick neoprene drysuits, mitts and thinsulate undergarments prepares the divers for the cold. Well, almost!! Donning all of the warm diving clothing, requires removing all the warm clothing being worn creating a rare sight of semi naked people standing in the middle of an Alaskan glacier.

Entering water that should be ice, is best achieved quickly, without any route of retreat. Feeling the icy water touching the few exposed millimetres of flesh around the lips is like acid being poured on. Blood in veins near the exposed skin, quickly retreats to the warmer core of the body, numbing out the cold. Regulators, prepared to the manufacturer's specifications for cold water diving, should performed as they would in warm tropic waters, despite the 6mm of clear ice encapsulating the first stage.

Diving a Moolan pool dive is basically a cave dive. Overhead environments will be encountered preventing direct access to the surface. Unlike a conventional cave, the crystal clear, bubble free ice, creates a maze of false passages. Divers find that they are bumping into invisible walls. Being able to see the surface in the clear water, does not guarantee a direct passage to safety, so, as is standard cave diving practice, a guideline is used from the diver, back to the surface.

The difference between this cave and the dry cave is an ice "plug" in the bottom that prevents the water from escaping to the river below. Should the plug fall out, a catastrophic loss of water could suck the divers down to the river below. Rock climbing techniques were adopted, instead of 3mm guideline, 10mm climbing rope is used to belay the divers. Three ice screws anchor each belay rope to the ice above the dive site. Each diver has an attendant controlling the belay rope, paying it in or out according to prearranged signals. The line restrict the diver's freedom but will make retrieval much easier in the unlikely event of an incident.

The water is clear, surrounding divers in a thousand shades of blue contrasting the darkness of traditional cave dives. Clear walls of ice disorientate the divers and slow forward movement. The ice that can be seen, is sculptured smooth, carved by water temperature. The cave is vertical, with a large main passage, easing filming by allowing two divers to work together with the third as a safety diver at a higher level. Alcoves, rather than passages lead from the main passage. Moolan pools are not common, each one is unique in shape and so the possibility of finding one, containing horizontal passages, must exist.

The coldness and corrections for the lower pressures of diving at altitude in fresh water limited dives to 20 to 30 minutes to avoid developing a decompression obligation. Over several dives the cave was explored to a depth of 30 meters. It continued on to greater depths and more mysteries beyond the limited support and equipment that was readily available. So finding the early native man or mammoth had to be left to the next explorers to brave the depths of the Moolan pool.

Photos courtesy of Andrew Wight, Quest Productions.



Bundera Sinkhole

a fragile fauna site, unique in the southern hemisphere

W. F. Humphreys

Western Australian Museum, Francis Street, Perth WA 6000



Bundera Sinkhole (C-28) is an anchialine cave – an inland cave fluctuating with marine tides – on the Cape Range peninsula in north-western Australia. It contains a specialised community of a type elsewhere known only from similar habitats on either side of the North Atlantic – the Canary Islands and the Caribbean area. It is the only site known outside these areas for the crustacean class Remipedia, a major division of the crustaceans whose very existence was discovered as recently as 1979 by Jill Yager in the Bahamas.

While the community of animals is quite recognisable between these widely separated regions, the species present in the remipede community of Cape Range are all unique to this cave. The remipede from C-28 belongs to the genus *Lasionectes* – elsewhere known only from the Turks and Caicos Islands in the Caribbean – and the species is *L. exleyi*, named for Sheck Exley who died shortly after the discovery of the remipede on the first deep penetration of C-28 in August 1993 by Andrew Poole and Dave Warren.

C-28 is a small drowned sinkhole on the coastal plain of the Cape Range peninsula and reaches a depth of 32m at a maximum distance from the sinkhole of about 42m and it is considered to be fully explored. The groundwater within this

system, up to several kilometres inland, comprised a freshwater lens overlying a seawater wedge as is typical of karstic islands. The groundwater contains a remarkable assemblage of specialised subterranean fauna (stygo fauna) including the only two species of blind fish known in Australia, the Blind Gudgeon and the Blind Cave Eel (both specially protected). The remaining fauna are predominantly crustaceans of various type including a number of lineages which have Atlantic connections similar to the remipede. Some are found to inhabit only the freshwater part of the system, some – including the remipede community – only the seawater part, while others, including the gudgeon, are found throughout the water profile.

Several members of the remipede community are specially protected under Western Australian legislation, while the remipede is also specially protected under Commonwealth legislation – only the second invertebrate to be so protected in Australia – the entire remipede community is considered threatened in Western Australia, particularly from point source pollution and diving.

Why is the site so vulnerable?

The sinkhole – mostly covered with a deep scum of green algae and the

occasional bloated kangaroo – descends through strong hydrogen sulphide layers. Large veil-like colonies of presumed sulphur bacteria were suspended in the water associated with the hydrogen sulphide layers starting near the thermocline.

The water has a strong density interface with a sharp thermocline at about 8 m with the temperature increasing about 5°C, and the salinity of the water increases from about half to full seawater between 8 and 16m. The physico-chemical profile of C-28 is complex, having a number of oxygen and redox minima that are vulnerable to disruption by SCUBA diving, and possibly even to semi-close circuit diving operations.

Within the profile conditions around the thermocline are consistent with nitrogen fixation and chemoautotrophic energy fixation by sulphur bacteria, a process recently demonstrated in a similar ecosystem in Mexico.

Globally, as all remipedes have been found by cave divers and this type of physico-chemical environment seems to be typical, it must be presumed that the stratification of the water is in some way important to the survival of the ecosystem. Hence, the disruption of the profile through mixing by exhaust gases and finning must be deemed a threatening process, at least till the system is better understood. As such C-28 is an inappropriate location for recreational diving and even research diving should be of minimum duration to achieve tightly specified aims.

This constraint was applied to the four day research trip undertaken by the Western Australian Museum from 21-24

September, 1997, during which nearly 17 diver (Andrew Poole and Stefan Eberhard) hours was used to sample many aspects of the cave and to repeatedly deploy sophisticated depth profilers through the full depth of the cave initially using rebreathers and later SCUBA to examine the differential effect on the profile. This intensive field work examined:

- the physico-chemical profile (temperature, salinity, pH, redox, dissolved oxygen, hydrogen sulphide, nitrogen species)
- video taped the full extent of the profile
- change in profile through time to follow the impact of diving operations – using both SCUBA and rebreathers – on the physico-chemical stratification
- food relations using stable isotope ratio analysis
- depth distribution of the fauna
- tidal cycle

Detailed analyses of these data are in progress but they show clear mixing of the stratification through time. Maintenance of this unique ecosystem will depend on the goodwill of the diving community.

For further information contact:

Bill Humphreys
telephone +61-8 9427 2753
fax +61-8 9427 2882
e-mail humphw@museum.wa.gov.au

Survey of C-28 by Dave Warren and Andrew Poole.

MEMBERSHIP FEES

*To the Members
Cave Divers Association of Australia*

The Directorate feels that an increase in membership fees is necessary for several reasons:

The Association will face higher costs due to the introduction of the GST.

Access to several dive sites is likely to move towards a user pays system, in particular those controlled by Primary Industries (SA); Engelbrechts East and West are also distinct possibilities. Piccaninnie Ponds already requires a fee for access, as does Tank Cave.

The ongoing costs of administration of the Association are always rising and at some point will translate into the cost of appointing someone on a paid basis to carry out the day to day functions.

Section 13(2) of the CDAA Constitution states that the level of fees can only be determined by a postal vote.

The proposal that the Directorate is putting forward to be voted on is this:

That the membership fee be set with regard to the degree of access to dive sites in accordance with the diver's CDAA rating.

The proposed membership fees to be effective on ALL membership fees from July 1st 2000 is

Cavern.....	\$60
Sinkhole.....	\$70
Cave	\$80
Penetration	\$95

The appropriate fee would be determined by the member's highest rating held. There would be no option to pay fees at a lower level.

This level of fees would allow for access fees to be absorbed by the members fees.

Under this system the application fee for Tank cave would be scrapped, with those members who have paid application fees to June 30 2001, receiving a credit against membership fees. All other access requirements for Tank cave would remain.

The Directorate asks that you give this matter serious consideration.

Ballot papers and a formal proposal for voting upon will be provided in the next issue of Guidelines or by special mailout.



CAVE DIVERS ASSOCIATION OF AUSTRALIA

NOTICE OF 2000 ANNUAL GENERAL MEETING, ELECTION OF OFFICE BEARERS AND VOTING FOR MEMBER MOTIONS AND CONSTITUTIONAL AMENDMENTS

This notice is issued pursuant to Clause 32 of the Constitution and serves to advise members that the Annual General Meeting of the Cave Divers Association of Australia will be held on 21st October 2000 at the International Motel. The Annual General Meeting will commence at 10.00am and will conclude no later than 12.30pm.

This notice also serves to call for:

- Nominations for Business Director and Standards Director
- Member motions
- Amendments to the Constitution

Nominations for the Directorate positions must be received by the Returning Officer no later than the close of business **Wednesday 30th August 2000.**

Member motions and proposals for amendments to the Constitution must be received by the Business Director no later than close of business **Wednesday 6th September 2000.**

Items received after this date will not be accepted nor will any extensions to this date be granted.

Members intending to nominate for an Office Bearer position must be an eligible member of the Association as defined in the Constitution. Nominations must be accompanied by a precis not exceeding one hundred words detailing skills, experience and achievements relevant to the duties and responsibilities of the nominated position. The responsibilities of Office Bearers are contained in the Constitution of the

Association. Nominations must be in writing and be signed by the nominee, the proposer and the seconder all of whom must be eligible members of the Association. The polling date for the election is 16th October 1999.

The constitutional amendments carried at the 1998 Annual General Meeting and reported in issue #67, (December 1998) of Guidelines, provide for two year terms for National Director, Site Access Director and the Publications and Records Director starting from the 1999 Annual General Meeting. Nominations for Business Director and Standards Director will be for one year terms, (Section 26(2)). Nominations in the year 2000 will be for Business Director and Standards Director only, and will then be effective for two years, (Section 26(3), 26(4)). Those members wishing to nominate for a position should make themselves familiar with these transitional provisions.

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

Polling date is 14th October 2000. If you wish to vote you must be an eligible member of Association, you must use the ballot papers to be provided in the next issue of Guidelines or by special mailout.

You must ensure the ballot papers reach the Returning Officer no later than close of business, Wednesday October 14th 2000. Detailed voting information will be provided with the ballot papers. Questions may be directed to the Returning Officer, PO Box 290, North Adelaide. S.A. 5006.

REVERSE DIVING PROFILES

Some Thoughts...

The following comments were forwarded courtesy of Chris Parrett of Abysmal Diving Inc. Chris will be one of several speakers at this year's OZTeK.

It should be noted that they are published here to promote discussion and not to preempt or otherwise suggest that the CDAA might consider altering Standards or Regulations with regard to this issue.

Summary of the Reverse Dive Profiles Workshop

The Smithsonian Institution, c/o Michael Lang, provided some excellent facilities for the Workshop. On Friday, the session was held in the Dillon Ripley Centre on the National Mall (a fairly new Smithsonian building next to the Smithsonian Museum). On Saturday, the session was held at the Smithsonian Environmental Research Centre on the shores of the Chesapeake Bay in Maryland.

Some rambling observations and comments:

I took notice of the fact that bubble models appeared to be the most prevalent deco modelling approach among the presenters. I was surprised by the diversity of bubble model algorithms, but also noted that they tended to arrive at similar conclusions. Some of the presentations involving bubble models were:

Bruce Wienke –
phase models, RGBM, technical diving applications

David Yount –
VPM applications

Hugh Van Liew –
answers/research about micronuclei still needed

Peter Tikuisis and Ron Nishi –
DCIEM bubble model applications

Valerie Flook –
application of Van Liew equations in deco modelling

Michael Gernhardt –
application of the Tissue Bubble Dynamics Model

Alf Brubakk –
consideration of pulmonary artery bubbles

On a related note, during the dive computer session, Ernst Voellm was asked to describe the bubble model approach used in the ZH-L8 ADT algorithm of the Aladin series dive computers.

Several of the dive computer manufacturers were represented in a panel discussion about dive computer approaches to reverse profile diving:

Oceanic –
John Lewis

Dynatron (Aladin), Scubapro –
Ernst Voellm and Sergio Angelini

Suunto –
Jarmo Luukkanen

Bonica –
Ron Nishi

Orca Industries (now defunct) –
Karl Huggins

ATTACH 2
PHOTOS
HERE

CAVE DIVERS ASSOCIATION OF AUSTRALIA

(INCORPORATED IN SOUTH AUSTRALIA)
P.O. BOX 290, NORTH ADELAIDE, S.A. 5006

C.D.A.A.
NUMBER

Membership Application Form

Applicant's Personal Details

Surname: _____

Given Names: _____

Address: _____

Postcode: _____

Phone: (h) (____) _____ Date of Birth: _____ Sex: _____

(w) (____) _____

In consideration of me being accepted as a members of the Cave Divers Association of Australia Inc., I agree to indemnify the Association and any other officer, employee, instructor, or guide of the Association, or any other person organizing, controlling, or assisting with a function, event, dive, expedition, training, testing, or administrative task or obligation, associated with the Association, from and against all claims, costs, demands and lawsuits that I have or may, have for personal injury or property loss, whenever occurring, against the Association or any of those people, arising out of or in relation to any function, event, dive, expedition, training, testing, or administrative task or obligation, associated with the Association or with the sport of Cave Diving.

I have read and understand the aims and objectives of the CDAA and am in support thereof.
I hereby apply for membership.

Signed: _____

I enclose \$50 being CDAA membership for 2000/2001 and an additional \$50 for each additional membership year.

☐ I enclose my cheque / money order

☐ Please charge to my credit card

BANKCARD

☐

VISA

☐

MASTERCARD

☐

Credit Card No.

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Expiry Date: _____ Signature: _____

MEMBERSHIP RENEWAL

- (1) Please fill out the Membership Application Form on the other side
- (2) Include 2 x Photographs passport quality.
- (3) CDAA number.
- (4) Enclose your cheque for \$50 per year PAID.
- (5) Enclose a stamped self-addressed envelope.

**AFTER AUGUST 31ST ANY UNPAID
RENEWALS WILL INCUR A \$50 LATE FEE**

NITROX ENDORSEMENT

Anyone wishing to add a Nitrox Endorsement will need to include a photocopy of their certification and pay a once only processing fee of \$10.

Mares –
Steve Miller

John Lewis and Glen Egstrom made presentations in which the historical roots of the prohibition against reverse dive profiles was investigated. It turns out that it probably had less to do with safety issues and more to do with “optimising” bottom time over a series of dives. This comes from gas loading considerations, which dictate that more useable bottom time will be achieved by doing a deep dive first, followed by a shallow dive, rather than the other way around.

What is quite remarkable about the issue of reverse profiles is that nobody seems to have a clear answer as to why this prohibition is in place and where it came from. Apparently the rule against reverse profiles started for reasons of bottom time efficiency and then, over time, got distorted into a myth about diving safety.

This is not to say, however, that there have been no incidences of DCS with reverse profiles. I analysed one such profile on this List before the Workshop and Till Mutzbauer analysed two such cases at the Workshop in his presentation. A common feature of these incidents is that while one diver gets hit pretty hard, his/her dive buddies go unaffected when doing the same exact profile.

In his presentation, Bill Hamilton provided an overview of the reverse dive profiles situation and pointed out that repetitive diving, especially deep repetitive diving, is a core issue. Reverse profiles are commonly undertaken in recreational, commercial, and scientific diving without incident.

A large portion of the Workshop was devoted to review of actual dive data in

search of a “smoking gun” that would support the premise that reverse dive profiles are inherently dangerous.

Presenters in this effort were:

Paul Weathersby and Wayne Gerth –
review of Navy/NMRI diving data

Richard Vann and Petar Denoble –
review of DAN diving data

Karl Huggins –
review of Catalina Hyperbaric Chamber diving data

Jon Hardy –
review of sport diving practices and outcomes

Peter Mueller –
review of European diving data

Terry Overland –
review of commercial diving data

Drew Richardson and Karl Shreeves –
review of PADI approach/data

Bruce Wienke –
review of NAUI approach/data

Duke Scott –
review of YMCA approach/data

Edward Maney –
review of AAUS approaches/data

(Note: the data from AAUS member University of Hawaii was included in Edward Maney’s presentation. I understand that our own Rich Pyle was instrumental in preparing the data for UH. In any case, Rich, they had a good powerpoint slide for that one!).

After all the presentations were complete, Richard Moon and Tom Neuman provided “individual perspective” summaries of the information that had been presented at this Workshop. The discussion was then turned to the floor for purposes of arriving at a list

of Findings and a Conclusion for the Workshop.

It was fairly obvious to all there that the diving data presented DID NOT point to any particular problems with reverse dive profiles in recreational, commercial, military, or scientific diving. It was also apparent that divers are doing reverse profiles all the time without incident. When occasional incidences of DCS did occur with reverse profiles, it was at a statistically lower rate than for forward profiles. It appears that decompression algorithms and dive computers are adequately handling the issue of reverse dive profiles in the field.

There is no basis in diving experience to draw the conclusion that reverse profiles are inherently more dangerous than forward profiles. Accordingly, this statement (in different wording of course) is included in the Findings of the Workshop. There was essentially unanimous agreement about this point among the participants.

The discussion got a little heated when it came time to come up with a Conclusion or Recommendations. Several of the folks present who work with bubble models had serious reservations about a "complete retraction" of warnings against doing reverse dive profiles. I made comments to this effect as did Bruce Wienke, David Yount, Valerie Flook, Michael Gernhardt, and a few others. In other words, the bubble models show that you can really get into trouble on an improperly planned/executed reverse dive profile. Many were concerned that divers, especially inexperienced sport divers, would get the wrong message about reverse profiles and think that it was okay to do them without any special

consideration. An argument can be made that the present lack of data that reverse profiles are dangerous could be, in part, due to the arbitrary prohibition against them that has been in place for many years.

A couple of key concessions were obtained by the bubble modelers. First, David Yount pointed out that practical diving experience showed that there had not been many problems with reverse profiles, but bubble models showed that there could be. So, some wording was changed to make it clear that it was only in the diving experience that there were few problems, not that there's a lack of evidence of any kind that reverse profiles are/can be dangerous.

Bruce Wienke prevailed in his argument that the pressure differential, or "delta-P," of most of the safely executed reverse profiles was 40 fsw or less between the repetitive dives. Accordingly, it was agreed by the body of participants that reverse dive profiles are most likely okay (i.e. "reasonably safe") as long as the depth difference between repetitive dives is 40 fsw or less.

A point of final agreement was that the sport diving limit of 40 msw/130 fsw should apply to any relaxation of current prohibitions on reverse profile diving.

So, the bottom line from the Workshop is that the diving data shows that reverse profiles have not been inherently dangerous and that current prohibitions against it can be relaxed within the scope of no-decompression diving to the sport diving limit of 40 msw/130 fsw and "delta-P's" of 40 fsw or less between repetitive dives.

Erik

TANK CAVE DIVING SCHEDULE 2000

JANUARY 2000		DATE	FEBRUARY 2000		DATE
Saturday		15th	Saturday		12th
Sunday		16th	Sunday		13th
Saturday		29th	Saturday		26th
Sunday		30th	Sunday		27th
MARCH 2000		DATE	APRIL 2000		DATE
Saturday		11th	Saturday		8th
Sunday		12th	Sunday		9th
Monday (Labour Day VIC)		13th			
			Friday (Good Friday)		21st
Saturday		25th	Saturday		22nd
Sunday		26th	Sunday		23rd
			Monday (Easter Monday)		24th
			Tuesday (ANZAC Day)		25th
MAY 2000		DATE	JUNE 2000		DATE
Saturday		13th	Saturday		10th
Sunday		14th	Sunday		11th
Monday (Adelaide Cup)		15th	Monday (Queen's Birthday)		12th
Saturday		27th	Saturday		24th
Sunday		28th	Sunday		25th
JULY 2000		DATE	AUGUST 2000		DATE
Saturday		8th	Saturday		5th
Sunday		9th	Sunday		6th
Saturday		22nd	Saturday		19th
Sunday		23rd	Sunday		20th
SEPTEMBER 2000		DATE	OCTOBER 2000		DATE
Saturday		2nd	Sunday		1st
Sunday		3rd	Monday (Labour Day SA) (Queen's Birthday WA)		2nd
Saturday		16th	Saturday		14th
Sunday		17th	Sunday		15th
Saturday		30th	Saturday		28th
			Sunday		29th
NOVEMBER 2000		DATE	DECEMBER 2000		DATE
Saturday		11th	Saturday		9th
Sunday		12th	Sunday		10th
Saturday		25th	Saturday		23rd
Sunday		26th	Sunday		24th

The following is presented here for discussion. All members are invited to consider and offer their views. Closing date for submissions is July 31st 2000.

MIXED GAS REGULATION

INTRODUCTION

The CDAA has compiled this regulation as a guide to the use of mixed gas diving in CDAA sites. The regulation is not a complete document and all users of mixes other than "Air" shall be trained and certified by a recognised training agency approved by the CDAA Directorate. The use of "mix" like "air" in CDAA controlled sites requires some modification for safe use. The danger of breathing mixes and descending inadvertently whilst de-compressing cannot be stressed highly enough. It is recommended that the use of fixed lines or physical contact with a solid object preventing depth change should be a priority.

CERTIFICATION REQUIREMENTS

1. Be certified as a Mixed Gas diver by a recognised training agency.
2. Divers may only use Mixed Gas in CDAA sites if they hold the certification from the CDAA for that site.
3. Be approved by the CDAA for the use of Mixed Gas by meeting the following:
 - (a) Provide proof of certification as a Mixed Gas diver.
 - (b) Provide proof of current membership in the CDAA.
 - (c) Provide a photograph and the fee as established by the CDAA for a card to be endorsed and re-issued.

DIVING REQUIREMENTS

1. The CDAA recommended maximum recommended dive depth shall not exceed the depth where:
 - (a) The oxygen in the mixture currently being breathed exceeds a partial

pressure of 1.40 bar while diving and 1.60 bar during decompression.

- (b) Nitrogen in the mixture currently being breathed exceeds a partial pressure of 4.50 bar while diving.

NOTE: Maximum depth has been based on the partial pressure of the gases involved. This is because varying the percentage of gases in a mixture increases the relevance of the gas percentage as the limiting factor and decreases the relevance of setting a fixed depth limit.

2. A depth marked decompression shot line should be used on all dives requiring decompression stops where possible. The shot line is to be weighted on the bottom end and fixed on the surface so that the line cannot be pulled deeper by the weight of divers resting on the line.
3. Where a decompression shot line cannot practically be used to attach stage tanks, divers should be using stage tanks that are left at required depths or carried with them for the complete dive.
4. The maximum P02 shall not exceed 1.6 bar when doing decompression or safety stops.
5. Divers should be at rest whilst breathing over 1.4 bar at decompression or safety stops.
6. The minimum depth shall not exceed the depth where oxygen in the mixture currently being breathed is less than a partial pressure of 0.16 bar.
7. For any dive where a gas mixture change requiring another gas breathing system is planned, a redundant gas system shall be available for each planned gas change. The gas used in the redundant gas system shall be of a partial pressure of oxygen that does not exceed 1.6 bar and not less

than 0.16 bar throughout the range of depths where it may be used.

TRAVEL MIX REQUIREMENTS

8. At least two divers shall always be together on any decompression or safety stop where the P02 exceeds 1.4 bar.
9. When using Travel mixes the maximum recommended P02 to be breathed at depth is 1.2 bar and shall not exceed 1.4 bar.
10. The maximum EAD of a travel mix should not exceed 40 metres and shall not exceed 4.5 bar.
11. Travel mix cylinders shall be staged at a depth where the P02 does not exceed 1.4 bar. If it is not possible to leave the travel mix and it is carried, clear depth restrictions for its use shall be affixed to the cylinder and a device to prevent accidental breathing from the second stage shall be fitted.

BOTTOM MIX REQUIREMENTS

12. The maximum recommended P02 to be breathed at the planned maximum depth is 1.2 bar and shall not exceed 1.4 bar.
13. The maximum P02 for the Maximum Achievable Depth (MAD) of the dive shall not exceed 1.6 Bar O2 partial pressure limit or 4.50 bar N2 partial pressure limit.
14. The maximum EAD should not exceed 40 metres and shall not exceed 4.5 bar.

CYLINDER CLASSIFICATION

15. All cylinders to be used or that are in the area and may be used shall be marked with their Maximum Operational Depth (MOD).
16. Travel mixes shall be marked with the MOD and this shall be no more than 1.4 bar ppo2.
17. Bottom mixes shall be marked with the MOD and this shall be no more than 1.4 bar ppo2.

18. Decompression mixes shall be marked with the MOD and this shall be no more than 1.6 bar ppo2.

NOTE

All cylinders that are to be used on the dive should be analysed to confirm the oxygen fraction immediately prior to the dive where possible. Great care shall be shown in remote locations to verify the correct mix has been done, by checking markings and pressures. If the cylinder has not been in the immediate possession of the diver between filling and when it was about to be used it should be analysed again.

Qualified gas blenders shall only fill cylinders used for mixes..

DRY SUIT INFLATION

1. If separate cylinder inflation is used for dry-suits, eg. Argon, the regulators first stage shall not be fitted with a second stage.
2. All argon or other than breathing gas cylinders must be clearly marked to prevent their use as a breathing mix.

OXYGEN EXPOSURE

The oxygen exposure tables as recommended by the Mixed Gas training agencies shall be followed.

DECOMPRESSION TABLES

The decompression table as recommended by the Mixed Gas training agencies shall be followed.

EQUIPMENT

1. All divers must use twin cylinders and all recommended equipment as per CDAA Regulations. Side mounted cylinders are acceptable.
2. Because of the depth that divers are able to reach safely all CDAA divers must

wear two (2) buoyancy compensator systems. Either two (2) BCD's or a BCD and drysuit with separate inflator hoses and different first stages. It is recommended that the inflator hoses should be able to be used on either item of

buoyancy for inflation. (Note: the use of dedicated inflation cylinders and their requirements)

3. Two separate systems to monitor the dive plan attached in different locations such as two slates.

GLOSSARY OF TERMS

PO₂	<i>Partial pressure of oxygen in a breathing mix.</i>
PN₂	<i>Partial pressure of nitrogen in a breathing mix.</i>
FO₂	<i>Fraction of oxygen in a breathing mix.</i>
O₂	<i>Oxygen</i>
N₂	<i>Nitrogen</i>
1 bar	<i>1 atmosphere of pressure.</i>
Planned maximum depth	<i>The maximum planned depth of a dive.</i>
Maximum achievable depth	<i>The greatest depth of the cave floor that the diver will swim above.</i>
Staged cylinder	<i>A cylinder and regulator that is left attached to a line or clipped to a wall or laid at a place so that a diver may use it on the way in or out of a cave.</i>
Gas mixture	<i>A mix of gases that are breathable therefore containing some percentage of oxygen (O₂).</i>
Nitrox	<i>A breathable gas mixture containing nitrogen and a percentage of O₂ higher than air.</i>
Bottom mixture	<i>A gas mix containing a blend that is able to be breathed at the planned maximum depth, reducing the effects of Nitrogen (N₂) Narcosis.</i>
Travel mix	<i>A gas mix used on ascent or descent before changing to a bottom mix or decompression mix.</i>
Decompression mix	<i>A gas mix used at decompression stops whilst at rest normally containing a Nitrox mix or O₂.</i>
Equivalent Air Depth (EAD)	<i>For gas mixes containing a fraction of a relatively non-narcotic gas, such as helium, of which the partial pressure of O₂ and N₂ is used to calculate an equivalent narcotic depth of air.</i>
Nitrogen Narcosis	<i>A condition brought about by breathing N₂ at depth, which has an anaesthetic effect causing impaired mental capacity, manifesting in a number of abnormal actions.</i>
Oxygen Toxicity	<i>Oxygen is recognised as inducing a Narcotic effect plus when breathed at high partial pressures, may cause seizures and other effects.</i>

References for this Regulation:

Author –	Warrick McDonald
Christopher Brown –	Paper on Tri-mix Diving approx 1998.
Standards Australia –	Subcommittee SF/17/1 Draft – “Recreational Mixed Gas Diving” 11-2-00.
Input –	Stephen Watson, Richard Price, Stuart Darke, John Vanderleest

FORESTRYSA / CDAA SITE ACCESS INFORMATION

Hells Hole	Contact ForestrySA by phone, fax or e-mail to arrange permit. (e-mail preferred option)
Pines	Collect Permit from Carter Holt Harvey Mill Gatehouse, Jubilee Highway Mount Gambier, adjacent to Forestry Office.
Mud Hole	No diving on days of Total Fire Ban. Forest Work bans may be imposed by ForestrySA on extreme fire danger days, which exclude the public from entering the forest. If in doubt, check with Ranger Trevor Wynniat, although signs are generally erected at diving sites on such days to indicate bans. Permits will only be issued between 8:00am and 4:30pm Monday - Friday. Phone: (08) 8724 2876 Fax: (08) 8724 2885 or e-mail: wynniat.trevor@saugov.sa.gov.au Hells Hole gate key available from Lady Nelson Visitor Centre.
Iddlebiddy (5L250)	Iddlebiddy open 1st and 3rd weekends of every month. Nettle Bed open every weekend. Maximum of 4 divers per dive per day, one dive per day for each site.
Nettlebed (5L290)	Only Penetration Divers. No diving on days of Total Fire Ban. Forest Work Bans may be imposed by ForestrySA on extreme fire danger days, which exclude the public from entering the forest. If in doubt, check with the Ranger Trevor Wynniat, although signs are generally erected at diving sites on such days to indicate such bans. Permits will only be issued between 8:00am and 4:30pm Monday - Friday. Phone: (08) 8724 2876 or Fax: (08) 8724 2885 or e-mail: wynniat.trevor@saugov.sa.gov.au Site keys from Lady Nelson Visitor Centre.

It is proposed to change the current Manifold Regulation to that outlined below. All members are invited to consider and offer their views. Closing date for submissions is July 31 2000. Please send all submissions to the Standards Director.

EQUIPMENT REGULATION

Isolation Manifolds

This Regulation is to state the position of the CDAA as to the use of Isolation manifolds in CDAA controlled sites.

Isolation manifolds have two high pressure outlets allowing the breathing mix from both cylinders to be accessed simultaneously from either outlet, or each can be isolated by a central handwheel. If a regulator failure occurs then the faulty regulator may be turned off by the valve handwheel. The Isolation handwheel controls the flow from the cylinders allowing access to the air in either cylinders or one at a time.

All previous regulations on the use of Isolation manifolds in CDAA controlled sites have now been replaced by this one.

DIVING

Members using Isolation manifolds shall be experienced in their use through either formal training or practice. It is a member's responsibility to be able to use their Isolation manifold in normal and emergency situations, before entering CDAA sites. Care shall be used when negotiating restrictions to prevent accidental handwheel turn-offs.

REQUIRED KNOWLEDGE and SKILLS

(Divers shall be able to demonstrate the following.)

1. Buddy procedures associated with the use of Isolation manifolds (both normal and emergency situations).

2. Rapid location and change to secondary regulator.
3. Emergency deployment of a regulator, and the use of, in an out-of-air situation.
4. The operation of cylinder handwheels – isolation, left and right, if shut-offs become necessary.
5. The use of an Isolation system as an Independent system.

EQUIPMENT

The following equipment configuration is approved for use in CDAA sites.

1. Only manifolds with two high pressure outlets and a central control handwheel shall be used (known as Isolation Manifolds).
2. Each outlet shall have a regulator attached (first and second stage).
3. All valves shall be accessible to the diver and their buddy. (See point 4 in Required Knowledge and Skills)
4. If two buoyancy feeds are required, they are to be fed from different first stages to provide redundancy.
5. If only one inflator hose is required it should come from the primary regulators first stage.
6. The primary regulator shall be fitted with a hose of sufficient length to allow exit from the cave while supplying air to another diver (penetration sites would require a hose long enough for two divers to exit toe to head, one behind the other).

7. The long hose shall be managed in such a way that it does not create a snagging problem and can be easily deployed if needed.
8. The secondary regulator shall be stored so that it can be accessed immediately if a share-air situation arises (neck lanyards or chest clips are recommended).
9. The hose length on the secondary regulator shall be suitable for the gear configuration and site. (See "Hose Length Regulation")
10. The secondary regulator shall be checked periodically throughout the dive to ensure its continued operation.

PROCEDURES

Normal diving procedures should be followed when using an Isolation manifold, except for special procedures that need to be carried out before and during the dive. Some of the special procedures, although not restricted to, are listed below.

1. Buddies shall be briefed on the operating procedures of your Isolation manifold

system even if using one themselves.

2. Equipment configuration shall be carefully examined noting if regulators are assembled with crossed over hoses or gauges.
3. The source of inflator hoses shall be observed in case of failure of a system.
4. A failure in any component of the tank, regulators, Isolation manifold or other equipment should terminate the dive.
5. Isolation manifolds, may be used as an Independent system with the centre handwheel turned off. It is recommended that if the Isolation system is turned off and made into an Independent system it should remain that way for the dive.
6. When the Isolation system is used as an Independent system each regulator shall have a contents gauge.

REFERENCES:

- | | |
|---------------------|---|
| Author – | Warrick McDonald |
| Christopher Brown – | Paper presented to the CDAA approx. 1998. |
| Input – | Stephen Watson, Richard Price, Stuart Darke |

NOTICE • NOTICE • NOTICE • NOTICE

MEMBERSHIP FEE DEADLINE

Section 13(3) 13(4) of the Constitution (as amended) September 1997, requires that membership fees are due 1st July of any membership year. Any member who has not paid by 1st September is deemed to be unfinancial. A \$50 late fee as specified in Schedule 2 of the regulations is payable in addition to membership fee in order to regain membership.

Remember that in order to nominate a Director, second a nomination or vote in the postal ballot, you must be a financial member of the Association (Section 9(2), 9(6), S13 (1) Constitution).

ANY MEMBERSHIP RENEWALS THAT ARE RECEIVED BY THE TREASURER AFTER CLOSE OF BUSINESS **WEDNESDAY 1ST SEPTEMBER 2000** WILL ATTRACT A LATE FEE. **THERE WILL BE NO EXCEPTIONS.**

If you have not already renewed. DO IT NOW!

MOUNT GAMBIER

The Barn Motel

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Set on 12 acres – Quiet Location

- Central to Piccaninnie & Ewen Ponds
- Light breakfast included in moderate tariff
- Special rates for small group bookings
- Next door to Barn Steak House
- Undercover BBQ area, kitchen facilities
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NELSON ROAD, MOUNT GAMBIER

***Election of
Office Bearers***

As you would all be aware only two positions fall vacant at this years AGM. Standards Director and Business Director. Both of these positions will be filled for a two year period as per the constitutional amendment.

Andrew Seifried has announced his intention to stand down at the next AGM and will not be nominating for re-election. Anyone interested in becoming the Business Director should nominate in writing to the Returning Officer, CDAA, PO Box 290 North Adelaide, SA. 5006.

The official notice announcing the AGM and calling for nominations appears in this issue and will also appear in the next.

Andrew also holds the position of Treasurer which will likewise become vacant. I would like to take this opportunity to thank Andrew for all his work over the last few years. It has not been an easy time (is it ever) and Andrew has shown himself to be a true professional.

Paul Axton was installed as Standards Director following Glen Harrison's Resignation and has already indicated his desire to nominate. Please see his Report elsewhere in this issue.

TRADING POST

FOR SALE

Cave/tech diving light,
all marine anodised aluminium,
12v 15amp hour battery, 100w,
50w or 30 watt bulb, compact head,
switch on battery pack, charger, as new \$600.

Neil Vincent (02) 971 798

email neilv@ozemail.com.au

CDAA SITE ACCESS

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

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

SITE	LEVEL	OWNER	ACCESS DETAILS
MOUNT GAMBIER - SOUTH AUSTRALIA			
Ewens Ponds	Nil	DENR P.O. Box 1046 Mt Gambier 5290 (08) 8735 1177	Groups of 6 or more, phone/mail to Dept. of Environment & Natural Resources (DENR). Smaller groups, no need. Indemnity form to be completed.
Horse & Cart Tea Tree	CN CN	Peter Cunningham PO Box 643, Mt Gambier 5290	By phone or mail, 1 week prior. Ph: (08) 8738 4003.
Little 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 Ph: (08) 8735 1177	General Diving: Divers to contact DENR and notify of date and site to be dived. Divers must have the correct CDAA diving endorsement for the site. The onus of proof of CDAA status is on the diver and is provided by presentation of CDAA membership card or DENR checking the membership list supplied by CDAA. If there are problems with the diver not being a current financial member DENR will not be chasing the records officer to sort out the problem. This will be the responsibility of the diver. The diver must have signed an indemnity with DENR before access is permitted. Training: The Instructor is to notify DENR of the date the sites are needed and to forward signed indemnities from each student and their temporary card number. membership number.
Ela Elap One Tree	S S	Mr. Peter Norman Private Bag 67, Mt Gambier 5290	By phone or drop in before diving. Ph: (08) 8738 5287
Swim Through	C	Valerie Earl 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: (08) 8735 1177 Faxed copies of cards no longer accepted when booking.
Hells Hole Pines Mud Hole	S P/C C	ForestrySA PO Box 162 Mt Gambier 5290	Contact ForestrySA by mail, phone or fax to arrange permit. Collect permit from Regional Office, Jubilee Hwy., Mount Gambier. No diving on total fire ban days. Forest Work Bans may be applied by PISA Forestry if forest fire danger is expected to reach extreme. Such bans also exclude the public from entering the forest. If in doubt, please check with Trevor Wynniat, although signs are generally erected at diving sites on such days to indicate such bans. Permits will ONLY be issued Mon-Fri between 8.30am-4.30pm. Ph: (08) 8724 2876 Please use this number for all bookings and enquiries etc. Fax: (08) 8724 2885 Email: wynniat.trevor@saugov.sa.gov.au. Written confirmation required.
Kilsby's	S	Landowner leased to S.A. Police No Visitors	Restricted access conditions apply - refer Guidelines Issue 54. Twin tanks, maximum of 40 metres depth. Write to: 40 School Road, St. Andrews 3761, Email: mpain@hipex.com.au, 4 to 6 weeks prior to wanting to dive. Please enclose stamped self-addressed envelope (Do not contact landowner). Dec 4/5, Jan 1/2, Feb 5/6, Mar 4/5, Apr 1/2, May 6/7, Jun 3/4. 9am - 12pm & 1pm - 4pm. No animals permitted. No mid-week diving.
Shaft	S	Generally open one weekend a month L. Claridge P.O. Box 290 North Adelaide 5006	For access dates contact Linda Claridge. Also, see Special Access Bulletin in Guidelines issue 69. Nitrox as a diving mix is not allowed in the shaft. Deco mixes ATTACHED to a shot line are permissible. Divers applying to dive in the Shaft must have documented experience of a least 5 twin-tank dives.
Ten Eighty Bullock Hole Black Hole	S S S	Mr. Colin Traeger PO Box 12, Mt Gambier 5290 (087) 26 6215	Sundays only Mail Booking Form to Colin Traeger 2-6 weeks prior, stating names/qual. of all divers, and time slot. Please include stamped self addressed envelope. Closed October to November for shearing.

CDAA SITE ACCESS

SITE	LEVEL	OWNER	ACCESS DETAILS
MOUNT GAMBIER - SOUTH AUSTRALIA (continued)			
Max's Hole	C		Phone or mail 1 week prior to dive. Ph: (08) 8726 8277 Currently closed pending access arrangements with new owner.
Hann's cave	P	P & A Lasslett	Groups of four divers only apply in writing to Site Director. Limited groups will be allowed access over the summer months. The site is very delicate and therefore only limited access is available. Divers applying will be notified as to further access details. Please include a stamped self addressed envelope.
Engelbrechts - East - West	C P	Mt Gambier Council	Obtain key from Mt Gambier Tourist Information Centre. Access agreement must be signed prior to diving. Key must be returned by 5pm Sunday, 2 divers must sign out keys, all divers must sign in advising which groups they are diving with.
Three Sisters	P	Millicent Council	Contact Linda Claridge. Access available for experienced Penetration divers only. Low profile or side mounted independent air systems required. Access agreement must be signed prior to diving. Please allow 4 weeks for indemnities to be processed.
Iddlebidy (5L250) Nettle-Bed (5L290)	P P	ForestrySA PO Box 162 Mt Gambier 5290	5L250 open 1st & 3rd weekend of every month. 5L290 open every weekend. Max. 4 divers per dive per day. 1 dive per day for each site. Only Penetration divers completed practical in-water cross-over. Bookings from Forestry Office - key from Lady Nelson. Contact ForestrySA by mail, phone or fax to arrange permit. Collect permit from Regional Office, Jubilee Hwy., Mt. Gambier. No diving on total fire ban days. Forest Work Bans may be applied by PISA Forestry if forest fire danger is expected to reach extreme. Such bans also exclude the public from entering the forest. If in doubt, please check with Trevor Wynniat or Forestry Office, although signs are generally erected at diving sites on such days to indicate such bans. Permits will ONLY be issued Mon-Fri between 8.30am-4.30pm. Ph: (08) 8724 2887. Please use this number for all bookings and enquiries etc. Fax: (08) 8724 2885 Email: wynniat.trevor@saugov.sa.gov.au. Written confirmation required.
McKay's Shaft	S		Contact Phil Argy at Mt. Gambier as access can be arranged.
Tank Cave	P	Mr. DYCKER	Tank Cave Access Manager: Jim Ferry Ph: (08) 8381 1911 (7.00pm - 9.00pm SA time, week nights only). For access details see Special Bulletin No. 7 in Guidelines issue 69.
Baker's Cave	C		Please write to the Site Access Director to dive in Baker's Cave. Include stamped self-addressed envelope. Climbing equipment required.
NULLARBOR - WESTERN AUSTRALIA			
Cocklebidy Murra El Elevyn Tommy Grahams Weebubbie	C P/C C C		Apply in writing for permission to dive at least 4 weeks in advance of trip to: District Manager, C.A.L.M., PO Box 234, Esperance, W.A. 6450. Phone: (08) 9071 3733 Fax: (08) 9071 3657 Apply in writing with at least 4 weeks notice to: Graham Higgins, Dept. of Land Administration, PO Box 2222, Midland, W.A. 6056. Include in the application: • The dates of the intended visit(s) • Photocopies of CDAA certification cards for all of the party • A signed Indemnity Form for Weebubbie Cave (photocopy from original in Issue 61 of Guidelines). Please note that this arrangement is for Weebubbie only and access to other caves on the Nullarbor must follow existing access protocol. Also note that divers must supply their own ladders as the old ladder has been removed.
WELLINGTON CAVES - N.S.W.			
Limekiln (McCavity)	P/C		Both Penetration and Cave Level are being accepted for this cave depending on it's water level at the time. The cave has a restriction at the entrance which is underwater making it a Penetration Dive. During drought, the water level drops to form a small lake below the restriction allowing experienced Cave Divers access to this delicate cave.
Water (Anticline)	C		Affected by high CO ₂ levels during Summer/Autumn. Access arrangements are co-ordinated with an already commissioned research group. Contact Greg Ryan (02) 9743 4157 h. greg@cs.usyd.edu.au
Rum Jungle Lake Berry Springs	S		No specific access arrangements.

UP-COMING COURSES

PENETRATION

Weekends of 23rd – 25th September and 30th Sept – 1st October.

Cost: \$650 per candidate

PLEASE NOTE: PRE-REQUISITES ARE:

- Hold a current CDAA Cave Diver Certification
- Have logged a minimum of 15 unsupervised Cave Divers (Post Course) using twin independent systems, toalling a minimum of 10 hours.

NB: No more than 2 dives per day with a maximum of 3 dives for any given site and a minimum of 20 minutes underwater time will be accepted.

For further information please contact Barrie Heard on 0419 401 469
No more Penetration Courses are planned until Easter 2001.

CAVERN/SINKHOLE

October Mid Week

Tues 10th, Wed 11th, Thur 12th and Fri 13th October.

For more information, call Linda Claridge (03) 5565 8793 or
email: garinda@tpgi.com.au

CAVE

September 25th – 1st October

For further information please call Warrick McDonald on 0408 374 112
or email Warrick via info@abocean.com.au

SHAFT DATES

July 1st & 2nd • August 12th & 14th • September 2nd & 3rd • October 21st & 22nd

Access arrangements remain unchanged.

Please contact Linda Claridge on (03) 5565 8793 or fax (03) 5565 8118
PO Box 15, Koroit, Victoria 3282 Email: garinda@tpgi.com.au

CDAA NOTICES

GUIDELINES DEADLINES

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

Deadline	for publication
20th August	September
20th November	December

NOTICE FOR INSTRUCTORS

Procedure for ordering student packs:

1. Check you are insured & financial.
2. Send order & cheque or by phone/credit card.
3. Allow 14 days from when the order is received - so allow plenty of time.
4. Student kits cannot be returned.
5. Instructors must be active.
6. Please do not pass my number on to dive shops - you should deal with them not me.

• INSTRUCTOR RENEWALS •

Several instructors have not yet renewed their CDAA ratings. Instructors must lodge their current insurance details and renewal fee or packages will not be issued and certifications rejected.

Instructor Renewals
PO Box 8283, CARRUM DOWNS, VIC. 3201

Deb Williams
Instructor Materials Officer

ACTIVE CDAA INSTRUCTORS

Any Instructor wishing material contact - (03) 9562 9264 or email: debwilliams@one.net.au

STANDARDS DIRECTOR:

Paul Axton
Telephone: 0419 346 442
(email) 61419346442@mobilenet.telstra.net

INSTRUCTOR	CN	S	C	STATE	PHONE	INSTRUCTOR	CN	S	C	STATE	PHONE
NSW & ACT						WESTERN AUSTRALIA					
Nick Jones	•	•		ACT	015 851 313 m	Gary Bush	•	•	•	WA	0417 957 620 m
Peter Grills	•	•	•	NSW	(02) 4950 6262 (8am - 12 midday)	Marilyn Boydell	•	•		WA	(08) 9349 5646 h
Gary Norgard	•	•		NSW	(049) 68 4588 h	Steve Sturgeon	•	•	•	WA	(08) 9527 7667 h/w 0418 940 143 m
Andrew Robertson	•	•		NSW	(02) 9525 0995 h 0414 412 563 m	VICTORIA					
Des Walters	•	•	•	NSW	(060) 411 405 w	Stephen Arnel	•	•	•	VIC	(055) 26 5230 h
Liz Butler		•	•	NSW	0409 463 176	Gary Barclay	•	•	•	VIC	(03) 5565 8793 h
SOUTH AUSTRALIA						Jane Bowman	•	•		VIC	(03) 9579 2600 w
Greg Bulling	•	•	•	SA	014 477 430 m (08) 8265 4978 h	Stan Bugg	•	•	•	VIC	(03) 9379 8791 h
John Hanson	•	•		SA	(08) 8269 1083	Linda Claridge	•	•	•	VIC	(03) 5565 8793 H
Max Marriot	•	•	•	SA	(08) 8447 3360 h	Brian Cornell	•	•	•	VIC	(059) 85 2514 h
Richard Megaw	•	•	•	SA	(08) 8344 1733 h	John Dalla - Zuanna	•	•	•	VIC	015 887 060 m
Richard McDonald	•	•	•	SA	(08) 8295 4140 h/w	Chris Edwards	•	•		VIC	0417 116 372 m
						Barry Heard	•	•	•	VIC	(056) 27 6474 h 019 401 469 m
						Warrick McDonald	•	•	•	VIC	(03) 9579 2600 w
						Bob Wealthy	•	•	•	VIC	(056) 858 338 h
						Frank Zeigler	•	•	•	VIC	(055) 236 392

Guess What?

New Zealand

Pearse Resurgence

Jan 8th–15th: A team of three divers Dave Apperly, Tim Cashman and Mike Collins dived to 125m and found that the cave goes deeper and longer. Did a number of dives setting up a habitat for deco and then Dave left the end of the line at 125m and plus 50m horizontal from the line that Chris Brown, Graeme Elliot and David Doolette did during the previous year.

Water temp was around 6 deg C and run times around 134mins.

Inspiration Rebreathers were used by DA and TC. MC used open circuit reaching a depth of 101m. Now before you think to yourself, "*Oh that might be fun*", according to Chris everything goes in and out by helicopter at only the small fee of \$16.00 /minute once the rotors are turning. They needed two trips each way, each trip lasting about two hours. We haven't even started paying for the breathing gasses yet!

Mexico

Yucatan Divers have found 3 passages connecting Sistema Esmeralda to the Carribean and thus named the combined system Ox Bel Ha, Mayan for three paths of water. The 31,395m system was then extended another 14,020metres to the Xax Kai cenote to create the worlds third largest system.

Sistema Dos Ojas is currently 60,960 and Nohooch Nah Chich 74,675m.

OZTek

The CDAA will be having a stand at OZTeK 2000, being held at the Melbourne Exhibition Centre over the weekend of 8th & 9th July. Any Instructors wishing to promote upcoming courses are welcome to provide details to either Warrick McDonald, Paul Axton or Chris Edwards (details inside front cover). Or come along and help manage the stand for a while.

WANTED



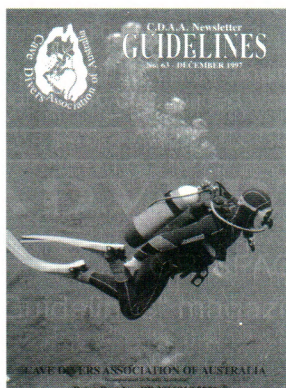
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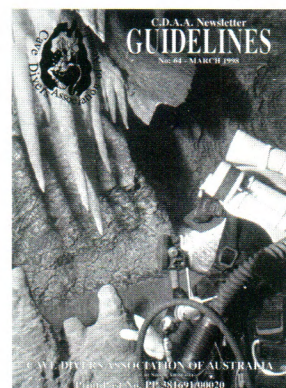
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		Cave Diving - A Blueprint for Survival. A book by the world-renowned cave diver, the late <i>Sheek Exley</i> , this is a case study of a number of accidents that have occurred in the USA and how to avoid them.	\$15.00	
		Basic Underwater Cave Surveying. The standard publication for anyone remotely interested in research and survey techniques used in water filled caves.	\$15.00	
		CDAА Occasional Paper No. 2, From National Conference 1981. Includes topics such as Fossil Cave, Belay Techniques and Cocklebidy 1979.	\$2.00	
		S.R.T. Single Rope Techniques. Published by the Sydney Speleological Society. This is the definite work on all aspects of vertical travel in caves. Should answer most questions on rope work for cavers and cave divers alike.	\$27.00	
		DAN Emergency Handbook. Revised 1995 edition by Lippmann and Bugg. Printed on waterproof paper this essential first aid manual should be part of every cave divers' kit.	\$17.00	
		NSS Cave Diving Manual. The standard reference manual in cave diving covering just about every conceivable topic. New Edition.	\$50.00	
		The Darkness Beckons. By <i>Martyn Farr</i> . The history and development of cave diving.	\$55.00	
		Deep Diving. By <i>Bret Gilliam, Robert Von Maier</i> . An advanced guide to physiology procedures and systems.	\$30.00	
		Deep Into Blue Holes. By <i>Rob Palmer</i> . This is the project manual written about his trips to the Bahamas, diving some of the most advanced and spectacular caves in the world.	\$40.00	
		NSS Cavern Divers' Manual. The standard reference manual in cavern diving covering almost every conceivable topic. Also most principles behind safe sinkhole and cave diving.	\$18.00	
		Caverns Measureless to Man. <i>Sheek Exley</i> .	\$46.00	
VIDEOS		Cave Practice & Equipment. Edited by David Judson British Cave Research Association. Updated 295 Page book fully illustrated with over 200 line drawings & 33 pages of dramatic photographs. Full chapter on cave diving by Martyn Farr.	\$40.00	
		New Edition of Peter Horne's Lower South East Cave Reference. An illustrated catalogue of the Lower South East Region of South Australia.	\$130.00	
		Australian Caving Diving - A Contrast. By <i>Tony Carlisle</i> . Four short documentary type videos on Warbla Cave, Three Sisters Cave, The Road to Toad Hall and Tank Cave. Reviewed in Guidelines 54.	\$25.00	
		Australia "Nullarbor Dreaming". A world record exploration into a desert cave. During November 1988, a team of Australian cave divers set out on an amazing adventure to explore the mysterious subterranean waters of the Pannikin Plains cave. This epic underwater exploration nearly ended in tragedy when a freak cyclone storm hit the area and the cave collapsed trapping the expedition below. The program is a graphic account of the expedition and their escape from the cave. Executive Producer - Andrew Wight.	\$29.95	
		Florida "Window to a Hidden World". The ultimate cave diving adventure. Andrew and Liz with fellow cave diver-explorer Wes Skiles, take us on a journey to discover the beauty and danger of the Florida aquifer. Beneath the surface of Florida lies one of the planet's largest freshwater reserves. The intricate system of water filled caves is now under increasing environmental threat from the population above. Producers: Andrew & Liz Wight.	\$29.95	
		Mexico "Water of the Gods". An exploration of ancient Maya ruins and underwater caves. Under the dense jungle of Mexico's Yucatan Peninsula lies a vast freshwater source relied upon by the ancient Mayas - a mysterious and complex people who built and occupied complex limestone cities in this region for over two thousand years. The Wights explore their hidden caves, uncovering their beauty and mystery, and providing a link to the past. Producers: Andrew & Liz Wight. Director: Liz Wight.	\$29.95	
		Cuba "Beneath the Surface". The underworld of Cuba. This documentary explores the role water has played throughout time in the history of Cuba. It reveals some of the many beautiful aspects of this magical Caribbean island, explores the bizarre subterranean caverns and provides unexpected contrasts with Cuba's turbulent history. This is an expose of a Cuba we believe we know. Producers: Andrew & Liz Wight. Director: Liz Wight.	\$29.95	
		Anniversary Edition T-Shirts. Colour: White, Blue. Sizes: Medium, Large, Extra Large.	\$10.00	
		Anniversary Edition Windcheaters. Colours: Blue, Black. Sizes: Small, Medium, Large, Extra Large.	\$20.00	
		Anniversary Edition Polo Shirts. Colours: White, Blue, Black.	\$17.50	
		Polar Fleece Jumpers. Original Logo. Colours: Navy or Grey.	\$69.95	
		Polar Fleece Vests. Original Logo. Colours: Navy or Grey.	\$49.95	
CLOTHING		Beanies. Navy only.	\$17.95	
		Caps. Black only.	\$19.95	
		CDAА Key Rings. Blue with gold motif. CDAА P.O. Box on back.	\$5.00	
MISC.		CDAА Stickers. Yellow. (Include stamped, self-addressed envelope for delivery.)	\$0.80	
		Tank Cave Poster. Full Colour 14"/" x 25" poster of Tank Cave by <i>Peter Rogers</i> . Price includes p&h.	\$8.00	
		CDAА 25th Year Anniversary Stickers. Special deal - 3 for \$5	\$5.00	

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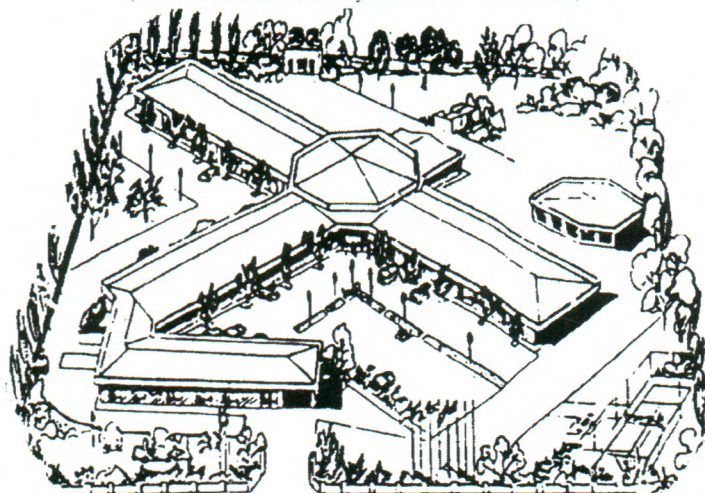
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