

C.D.A.A. Newsletter

GUIDELINES

No: 39 – APRIL 1991



CAVE DIVERS ASSOCIATION OF AUSTRALIA

(Incorporated in South Australia)

Registered by Australia Post – Publication No. VBH 5938



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

Front Cover: Entrance to Iddlebidy
Photo supplied by Lisa Bernasconi

GUIDELINES is the newsletter of the Cave Divers Association of Australia, published four times a year – January, April, July and October. All articles for the following issue are to be sent to the Editor, P.O. Box 290, North Adelaide, SA 5006, prior to 10th June, 1991. 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.

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 our P.O. Box in Adelaide and your enquiry will be passed on.

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EDITORIAL

Shaping the future ...

G'day all! Well, it's now 12 months down the track – four issues of Guidelines, and all on time too – unbelievable! I feel it's now time to start asking you, the membership, what your feelings are concerning your magazine. I've taken a leaf out of our sister organisation's book – the U.S. based NSS Cave Diving Section, and put together our first reader survey. PLEASE take the time to fill it out and return it. The survey will play a very important part in shaping future issues of Guidelines. Without input from the readers, how am I to know what you want to see more of, and possibly more importantly, what you don't want to see published.

This survey also has another purpose – that is to implement the information included in the survey and get more specific articles written, and yes, that means you. To enable Guidelines to grow over the next 12 months, I will need a swag of new articles – and until now I have relied on a very small group of people to keep me supplied with text. Hopefully, with this issue, that will change. I know there are heaps of people out there with ideas for an article but possibly not the literary genius needed to write it. It doesn't matter! If you have any ideas or problems, I am available at home or work for a chat. If you have the idea, we can help put it into words.

With your support, Guidelines and the Association will continue to get better and better. Without it, who knows?

I must also take the time to thank everyone who has helped with production over the last 12 months, especially our publisher, Ruth Mann. I hope the next 4 issues are as much fun to produce!

Safe Cave Diving,
TONY DAVIS, *Editor*

NATIONAL DIRECTOR'S REPORT

The new constitution, regulations and training standards are nearing completion. It has been close to 2 years since work began on the National Restructure Policy Document and you will soon be required to vote on the new system.

Like all new systems, it will continue to be refined for quite some time after voting has taken place (assuming a vote of acceptance). This vote will take place by mail before this year's AGM with the result of the vote being ratified at the AGM.

The AGM also means voting for Directors. People wishing to be nominated for one of these positions should start talking to the current Directors. Part of their responsibility is to prepare people to take over their positions so that a change of Director causes little or no disturbance to the running of the

Association. I personally would love to have a dozen people after my job.

One of the tasks of National Director is to co-ordinate site access. This involves legal aspects of landowner liaison. Michael Gatehouse and Max Beck have agreed to assist David Bird with some of his legal work for the Association. A good team of legal professionals means only a little work for each, and a lot of progress for the Association. We would still like to hear from any more legal beavers out there, so if anybody knows where they are hiding, please let me know.

A lease agreement for Swim Through is being drawn up at the moment, and the SA Government Crown Solicitor is looking into a lease agreement for some of the Government Sites. Leasing of sites allows the Association

Continued overleaf


Continued from previous page
a greater deal of freedom within the site as well as fully protecting landowner.

5L250 is now being dived. The booking for the first 6 months are now full. My thanks to all the people who applied and apologies to those who have missed out. 5L250 has been a good example of a site requiring a fixed line and twin independent air supplies. Comments from those who have dived the site confirm the need for both.

There appears to be some confusion as to the level of equipment required for Cave and Penetration dives. ALL Penetration Dives (old Cat. 4) require twin independent tanks. This was a regulation voted in at the last AGM. People ignoring this regulation may find themselves receiving disciplinary action.

Cave Diving (or old. Cat. 3) does not require twins at this stage, except when training. It is, however, common sense to use twins in anything above a Cavern dive, and only a matter of time before it becomes a regulation. If you do not have a twin tank set-up, you should be looking at upgrading. Any instructor with the Association will be able to assist and advise you in setting up your gear.

Yours in cave diving,


JOHN VANDERLEEST

CDAA NEWS

PICCANINNIE PONDS NOTICE

If your membership runs out this year, make sure that you renew it before June 30th. NPWS uses a list supplied by the Association to confirm your financial status. After June 30th, this list is only updated monthly. Unless you are on this list, your advanced bookings to dive the Ponds may not be accepted.

LOST IN WEEBUBBIE

Lost in Weebubbie Cave in Jan. 1991 – as new – Mares snorkel (flexible hose, blue colour). Lost somewhere between the entrance lake and end of the Railway Tunnel. Has no sentimental value whatsoever, just financial value! Please contact Stefan Eberhard, RMB Baskerville Road, Old Beach, Tasmania 7017. Telephone: (002) 49 2677 (h), (002) 20 2631 (w).

THE CDAA CAVERN DIVER COURSE

By Alan Jolliffe, Standards Director

In the next 4 issues of Guidelines, I intend to outline the details of the new courses. In this issue, I will explain the Cavern Diver course, but first, I would like to explain why we felt it necessary for divers to undertake courses at all CDAA levels.

The old category system served us well, but there were short comings and there were many developments since the system was introduced some 15 years ago.

To summarize the reasons for the change:

- some sites were categorized inappropriately. They were categorized according to access rather than to the strict definitions.
- some divers who presented for testing were poorly trained, especially in theory.
- today, divers expect to be trained rather than train themselves. We wanted to change the role of the CDAA from a testing organisation to a training role.
- in the last few years, cave diving equipment has changed greatly.
- penetration sites are now opening which are potentially much more dangerous than those in the past.
- sites, such as the Nullarbor, are dived much more frequently than in the past.
- we wanted to make the CDAA a truly national organization, rather than a Mt. Gambier based organization.
- we wanted to bring the CDAA standards in line with international standards.

It was decided when we introduce the new system that we would have courses at all levels to ensure the best training is given to members.

THE CAVERN COURSE

The CDAA Cavern Diver replaces the old category one. The depth limit is now 20 metres as opposed to the 37 metre limit for category one. This is one of the reasons Little Blue Lake is now classified as a Sinkhole. The aim of the Cavern Course is to introduce divers to the skills they require for cave diving and to enable them to dive in cavern and freshwater sites safely.

The detailed course outline is on pages 22 & 23. In the next Guidelines, I will outline the sinkhole diver course.

CDAA EXAMINERS

INSTRUCTOR	Cavern	S'hole	Cave	State	Phone (h)
Ron Allum	•	•	•	NSW	(02) 534 6615
Stephen Arnel	•			VIC	(055) 26 5230
Bill Bernhardt	•	•	•	VIC	(03) 725 9716
Chris Brown	•	•	•	SA	(08) 79 1445
Stan Bugg	•	•	•	VIC	(03) 379 8791
Greg Bulling	•			SA	(08) 265 4978
Scott Carpenter	•	•	•	VIC	(056) 25 2508
Paul Cavanagh	•			NSW	(02) 858 5363
Terry Cummins	•	•		NSW	(02) 888 5899 (w)
John Dalla-Zuanna	•	•	•	VIC	(03) 370 1093
Glen Harrison	•	•	•	SA	(08) 386 3237
Barry Heard	•	•	•	VIC	(056) 27 5511
Alan Jolliffe	•	•	•	VIC	(03) 874 7669
Ian Lewis	•	•	•	SA	(087) 35 6100
Phil Mann	•	•	•	VIC	(03) 689 7791
John McCormick	•	•	•	VIC	(03) 579 0570 (w)
Warrick McDonald	•			VIC	(03) 579 2600 (w)
Richard Megaw	•	•	•	SA	(08) 344 1733
Tim Miles	•	•	•	SA	(08) 289 2030
Hugh Morrison	•	•	•	WA	(09) 409 9807
Tony Richardson	•	•	•	VIC	(03) 754 6163
Des Walters	•	•	•	NSW	(060) 25 3506
Bob Wealthy	•	•	•	VIC	(03) 789 6389
Andrew Wight	•	•	•	NSW	(02) 428 2176
Frank Ziegler	•	•	•	VIC	(055) 26 5288

A FINAL MESSAGE FROM THE RETIRING TRAINING MANAGER

Tony Richardson

After three years as Cat. 3 Test Coordinator and then Training Manager, I have decided to resign as Training Manager of the CDAA. Family and work commitments are not allowing me to devote as much time to the position as is required. I have enjoyed my role in the association, and would like to thank all committee members, examiners and office bearers for their assistance and support over the years. I will continue on as an Instructor and member of the Standards Review Group. Finally, I would urge all members of the

Association to support the new system, the Directorate, and the Office Bearers, in the Association. There is a tremendous amount of work being done behind the scenes to implement the new system. This can be a thankless task. The Association and the new system need your backing if we are to succeed. It is easy to criticize. It is just as easy to say "well done".

John Dalla-Zuanna has been appointed as the new Training Manager and can be contacted on (03) 370 4329.

STANDARDS DIRECTOR'S REPORT

The new courses are now operating and we are no longer using the category system. Many courses have been conducted over the past few months. The new system is operating very well and has gained student acceptance. This is an exciting time for the Standards Directorate, as there is much activity and work by members of the Standards Review Group.

Here is the news:

Resignation of the National Training Manager: Tony Richardson

Due to increasing work commitments, Tony Richardson has resigned as National Training Manager. It is with regret that I have accepted his resignation.

Tony has been Training Manager for over two years and has worked tirelessly on the new training system. Tony and Ian Lewis were largely responsible for establishing the training side of the new national system from which we are all benefitting.

On behalf of all CDAA instructors and members, I would like to thank Tony for all his hard and dedicated work. Thanks Tony, for a job well done!

John Dalla-Zuanna has been appointed National Training Manager. All training enquiries should be directed to him. Tony will continue to assist John in this change over period. Bob Wealthy has been appointed as course developer for the Standards Directorate Working Group. Bob has been a CDAA member for many years, a cave diving instructor and is an active FAUI instructor. He is a teacher by profession. I look forward to working with Bob in the future.

New Instructors

I am pleased to welcome the following instructors as CDAA instructors:

Terry Cummins	Sinkhole Inst.	NSW
Tim Miles	Cave Instructor and member of the standards review group	SA
Phil Mann	Cave Instructor and member of the standards review group	VIC
Warrick McDonald	Cavern Instructor	VIC
Paul Cavanagh	Cavern Instructor	NSW
Greg Bulling	Sinkhole Instructor	SA
Steve Arnel	Cavern Instructor	VIC

Change of definition of Cave Diving Sites

The 40 metre penetration limit for Cave sites was very restrictive and does not work well for locations such as the Nullarbor. The Standards Directorate Working Group has changed this definition to the one below:

CAVE DIVING SITE DEFINITION:

A cave dive site is an enclosed body of water containing overhangs, silt, darkness zones, restricted passages but are at all times large enough for two divers to buddy alongside and turn around together and exit. Cave dive sites are a maximum depth of 20 meters. A cave diver can penetrate a maximum of 1/3 of their air supply for a single set of twin tanks (no scooters).

The major difference between a penetration and cave site is that is has restrictions which will not allow 2 divers to pass side by side. This definition will apply as of the next AGM.

Cave Diver Courses

A number of very successful Cave level courses have recently been run. These must be run by TWO Cave Diving Instructors. Contact your local Cave Diving Instructor or the Training Manager for details of the next available course.

Classification of the Nullarbor

The popular diving sites in the Nullarbor has been classified under the new system.

The classifications are:

CAVE - Cocklebidly, Tommy Grahams, Weebubbe (small dive site next to main chamber - Sinkhole)
PENETRATION - Murra El Elevyn, Warbla, Pannikin Plains.

If you use more than one set of twins on a single dive in one of the cave sites then you must be a penetration diver. These classifications will apply as of the next AGM.

What's in the Training Packages?

Training packages are now given to students undertaking any of the new courses. These will be supplied by your instructor. Included in the training package are application and course administration forms, medical form, examination paper, temporary card, training materials, NSS cavern diver manual, plus more.

More course materials are being prepared and will be included when available.

Cross-Over Seminars

Cross-Over Seminars were held in Melbourne and Adelaide last month. Both were well attended. I attended the Melbourne seminar. Over 90 members were present and the seminar was well received by the members. Thanks also to John McCormick who gave a very interesting talk on the latest cave diving gear available, and John Dalla-Zuanna for his talk on hand signals.

These were the last free cross-over seminars to be held in Melbourne and Adelaide. Members have had many opportunities to cross-over in the past. In the future, there will be a small charge for cross-overs in Melbourne and Adelaide. Private arrangements for cross-overs can be made by contacting myself, Glen Harrison or John Dalla-Zuanna.

Penetration Diver Education Program

In the last Guidelines, you were advised of three Penetration Diver Education Programs for penetration divers. These will train you in the techniques of fixed line techniques, use of jump reels, lost line searches, etc. I strongly suggest penetration divers complete one of these programs. Tony Richardson, Chris Brown and Glen Harrison have put a lot of work into these programs. These programs are educational, they are not a test. You will need these techniques when we introduce fixed lines in some of the penetration sites in Mt. Gambier.

A very successful penetration diver education program was held in Adelaide. Both instructors and divers were pleased with the program. Congratulations to all instructors involved in this program.

Upgrading to Penetration level

There has been some confusion over how to upgrade to penetration level. Under the new system, upgrading to penetration level you must have completed 20 cave dives and undergone a penetration course. "Old" category 3 divers will still be able to upgrade under the old system (i.e. 20 dives and minimum of one year waiting period after completed their category 2 test) until the next AGM. To obtain full Penetration Level they must attend a Penetration Diver Education Program.

Penetration Diver courses will be run ONLY by the Association through the co-

ordination of the Training Manager. These courses will commence soon. For more details, contact the Training Manager.

NSW Regional Training Co-ordinator Appointed

Terry Cummins has accepted the position as NSW Regional Training Co-ordinator. Terry is Director of Operations for PADI Australia and a CDAA Sinkhole Instructor. He has been a cave diver for over 20 years and has dived cave sites all over the world.

Any NSW instructors wishing to become CDAA instructors should contact Terry. I know the appointment of Terry will firmly establish the CDAA in NSW. I look forward to working with Terry in the future.

Instructors and CDAA Officials Meeting

A meeting of all CDAA instructors and officials will be held on 4th and 5th of May at Horsham, Victoria. Please keep this weekend free. You will be contacted in the near future with details about this meeting. The purpose of this meeting will be to review all current standards, training materials and administrative procedures.

Good diving!

Alan Jolliffe
Standards Director



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OVERVIEW: Penetration Diving Education Program

by Chris Brown, CDAA 708

The CDAA is running this program for members who have held a Category 4 rating, have attended a Cross-Over Seminar to the new system and now hold the Penetration Diver level. The idea of the program is to help these members to update their skills and knowledge in the areas of:

- Mandatory gear requirements at Penetration Level
- Fixed line diving techniques including the use of jump reels and direction arrows.

This program is NOT a test but as the title states, and EDUCATION PROGRAM. In the future, caves that have fixed lines placed in them may have entry restricted to members who have participated in the Program or have successfully completed and passed the Penetration Level course in the new system. There are three caves in the Mount Gambier region that may have permanent fixed lines placed in them. These are Engelbrechts West (5L20), Iddlebidy (5L250) and Tank Cave (5L230).

In the Nullarbor, many of the caves already have fixed lines installed. In the near future, the caves in Western Australia which are under the control of the Conservation and Land Management Department (CALM) may be restricted to CDAA members who are suitably qualified. Therefore, members who have not participated in the program may be denied entry to Penetration Level Caves even if they have previously dived them.

The program will take approximately 3-4 hours to complete and is split up into five sections as follows:

1 Equipment check

This is to see how you set up your gear and gives us a chance to give constructive criticism on how to improve your set-up AND to see if you have any ingenious ideas that we can steal and use ourselves. Remember at Penetration Level your equipment should be set up as solo independent.

2 Hand signals

To get the most out of this section you must try and learn the hand signals prior to the program as this section is meant to show

you how to use the signals in phrases NOT to teach you them.

3 Use of jump reels and direction arrows

This is to show you how to use them correctly prior to the in-water section, including how to use a jump reel to find a lost line in a silt out.

4 In water use of jump reels and direction arrows

This section is to be done solo, so you will not require a buddy. You will be given the chance to use both jump reels and direction arrows for doing a "jump" and a "lost line search". This section will take approximately 25 minutes in-water time.

5 In water equipment removal

In the unlikely chance that you find yourself in the predicament where you have been able to get through a squeeze or restriction but unable to return, then you may have to remove your tanks and push them in front of you. This section is designed for you to learn what steps you will have to take to remove your gear underwater, without getting tangled in torch cables, neck straps or other items of gear. If it is possible to safely put your gear back on by yourself prior to exiting the cave, or is it better to push your gear out of the cave?

If you do hold a Category 4/Penetration card, I urge you to attend a Program no matter how experienced or inexperienced you are. The first Program run in Adelaide was attended by 12 Cat. 4/Penetration divers and all agreed that it was time well spent. All divers admitted that they had learnt more about their own ability and where their weak points were and what modifications they had to look at doing to their gear to bring it up to scratch.

Please note: it is not mandatory to do a Penetration Divers Education Program but if you don't, you may get left behind.

Future programs will be held in Adelaide, Melbourne and Mt. Gambier, and will be advertised in Guidelines.

"BUT WE THOUGHT IT WAS OVER 1,000 FEET DEEP!"

by Peter Horne

Ten-Eighty sinkhole is perhaps one of the "top ten" cave diving sites in the lower South East. Its huge size and (usually) crystal-clear water at depth attracts many groups of divers each year, and because it is currently the only diving sinkhole on Barnoolut Estate with a walk-down ramp, it is especially popular for divers who would rather not use ladders and rope techniques!

Formally registered by the Cave Exploration Group of South Australia as 5L42, *Ten-Eighty* was originally known as "Simpson's Hole" after a manager of the property in the 1960s. As popular rumour has it (although I would dearly like to hear the TRUE story if anyone knows it), the sinkhole is believed to have acquired its present, better-known name in the late 1960s, when some "city folk" read the warning sign "DANGER - 1080" near the sinkhole. Ignorant of the existence of the extremely toxic vertebrate poison which was laid in the area, the visitors apparently thought that "Ten-Eighty" was the name of the sinkhole (or

perhaps that it was 1,080 feet deep)!

The earliest recorded scuba dive in *Ten-Eighty* known to the author took place on 18th November, 1962 when three local cave divers - "Snow" Raggatt, "Mick" Potter and Noel Fennel - descended to a depth of around 45 metres, where they appreciated its fabulously clear water and enormous underwater dimensions (pers. comm. Mick Potter, 1982). Since that time, *Ten-Eighty* has been dived frequently by thousands of people, many of whom have returned a dozen times or more.

Ten-Eighty is a classic "cenote" or undercut natural well, and like the other big sinkholes close by it, it was formed when the ceiling of a large underground cavern collapsed sometime in the distant past. Judging from preliminary measurements, it is not unlike the mighty *Shaft* in overall shape and (probable) pre-collapse size, and for this and other reasons, *Ten-Eighty* has been the subject of a number of environmental, morphological, biological and associated

Continued overleaf

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Continued from previous page
studies over the past ten years or so.

As far as the dive itself is concerned, most people would probably agree that it is usually well worth the effort. In the warmer months, the lake is a sickly warm, murky, yellowish-green (even orange!) "soup", and the mixing of thermally different layers of water during divers' descents sometimes produces some bizarre – even disconcerting – visual effects. However, the deeper levels are rarely murky, and most of the year the water is so clear that you could easily imagine that you are in a large dry cavern!

Members who have visited the sinkhole in recent months will probably have noted some horizontal underwater survey reference line which run from large star droppers on the central mound to various points around the walls. These important base-lines have been temporarily installed to help the South Australian Underwater Speleological Society compile a detailed map of the entire feature with the support of CDAA Research Group personnel, and although only about 40% of the sinkhole has been accurately surveyed to date, these details, plus other rough reference notes recorded by divers over the years, have

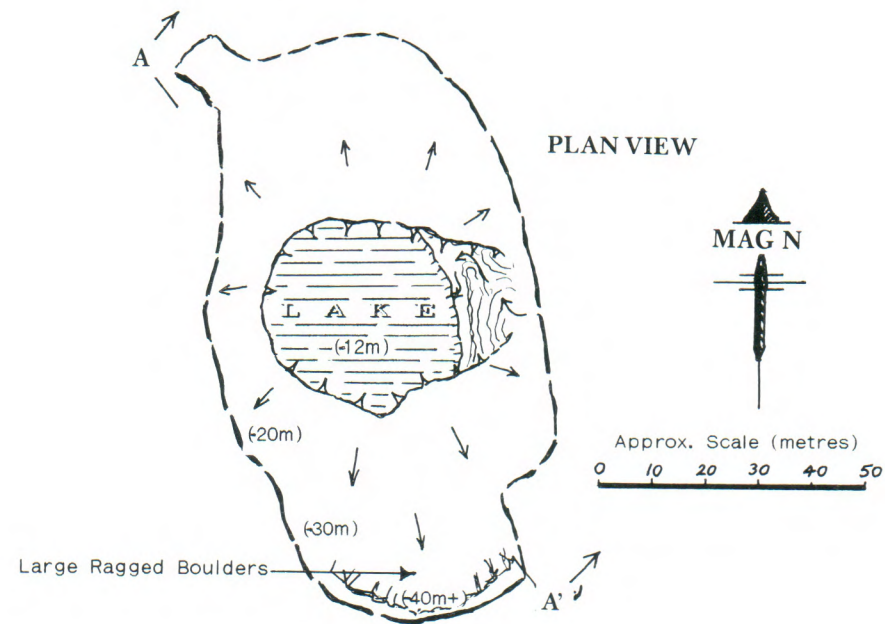
given us a fairly good idea of the sinkhole's true shape and underwater extent. (Copies of the final detailed map will be made available when it is completed.)

Some interesting environmental studies have also been initiated by cave divers over the years and some valuable base-line data have been recorded. For example, variations in water temperature and approximate horizontal visibility at different depths were charted over a 12-month period in the early 1980s, and other preliminary studies (including sampling etc.) have involved aspects such as water chemistry and pollution. Some very basic biological and palaeontological recording work has been done as well, so it is obvious that *Ten-Eighty* is far more than just a very wet hole in the ground!

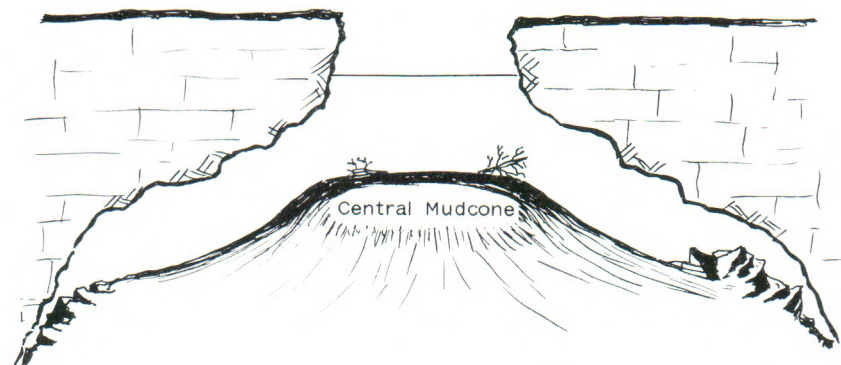
Like all other sinkholes, *Ten-Eighty* requires care and awareness on the part of all cave divers if it is to be explored in relative safety, and properly-trained and equipped divers can cover virtually the entire underwater area without fear of accidentally getting into trouble with excessive depth or silting.

It is a great introduction to Mount Gambier's more interesting diving sites!

TEN-EIGHTY SINKHOLE (5L42)



SECTION A - A'



Sketch based on A.S.F. Grade 1 & 2 Maps by
P. Stace, I. Lewis and P. Horne [1980-81]
and Grade 4.3 Map by SAUSS/CDAARG [1989-90].



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PRODUCT REPORT THE SUUNTO "SOLUTION" DIVE COMPUTER

by John Lippmann

Decompression Model

The "Solution" utilises a Haldanian decompression model which incorporates 9 tissue compartments with half-times ranging from 2.5 to 480 minutes. These half-times are identical to those of the SME-ML, but the model has been altered slightly to enable it to

perform at increased depths. The alterations have reduced the No-Decompression Limits (NDLs) for certain depths, as seen in Table 1, which compares the NDLs of the "Solution" with those of a number of other current computers and with the U.S. Navy and DCIEM Tables.

TABLE 1

NDLs for various dive computers and tables

Depth (m)	U.S. Navy	DCIEM	SME-ML	Solution	Aladin Pro	Datamax Sport	Micro Brain Pro plus	Skinnydipper*
9	-	300	215	222	354	260	220	225
12	200	150	132	127	121	136	106	133
15	100	75	74	72	70	78	64	75
18	60	50	53	52	49	55	44	52
21	50	35	38	37	35	40	31	39
24	40	25	29	29	25	31	20	31
27	30	20	23	23	20	25	15	24
30	25	15	18	18	16	20	12	19
33	20	12	13	13	14	16	10	13
36	15	10	11	11	12	13	8	10
39	10	8	9	9	10	11	7	9

*The times for the Edge and Delphi should be identical

A Haldanian decompression model assumes that the rate of nitrogen uptake is identical to the rate of nitrogen elimination. The majority of dive computers and dive tables make this assumption, although there is strong evidence that it is often not true. Nitrogen elimination may often be far slower than uptake, and this can lead to inaccuracies in the calculation of decompression for repetitive dives and for the interval required before flying, possibly resulting in decompression sickness.

Whereas this potential problem was not addressed in the SME-ML, Suunto have taken steps to address it in the "Solution". The computer has been programmed to assume that "off-gasing" is 25% slower during the first 2 hours of surface interval. This has the effect of reducing repetitive dive times by a few minutes, as can be seen in Table 2. It doesn't, however, alter the times for an initial multi-level dive, as indicated in Table 3, since there is no surface interval between various segments of the dive.

TABLE 2

Dive times allowed by various computers and tables

(The times given are in minutes)

Dive 1. Depth = 36m

Allowable no-deco. time: Solution=11 (A1=9)
SME-ML=11 Skinnydipper=11
Aladin Pro=12 Micro Brain Pro Plus=8
Datamax Sport=13 U.S. Navy Tables=15
DCIEM Tables=10

Bottom time = 10 Ascent time = 3.6

Deco. required: Micro Brain Pro Plus = 1 min @ 10 ft.

Surface interval = 60

Dive 2. Depth = 30m

Allowable no-deco. time: Solution=17 (A1=14)
SME-ML=19 Skinnydipper=19
Aladin Pro=15 Micro Brain Pro Plus=12
Datamax Sport=15 U.S. Navy Tables=11
DCIEM Tables=10

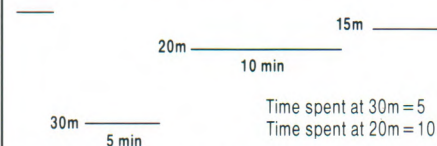
Bottom time = 18 Ascent time = 2.3

Deco. required: Solution=1 min @ 3m (A1=13 min @ 3m)
SME-ML=none Skinnydipper=none
Aladin Pro=2 min @ 3m Datamax Sport=1 min @ 3m
Micro Brain Pro Plus=3 min @ 3m
U.S. Navy Tables=15 min @ 3m
Buehlmann (1986) Tables=5 min @ 6m & 10 min @ 3m

TABLE 3

Comparison dive time allowed at 15m by various computers and tables for a single, multi-level dive of 30m for 5 minutes, followed by 20m for 10 minutes, followed by ascent to 15m.

(The times given are in minutes)



No-Decompression Stop Time allowed at 15m:

Computers
Solution = 45 (A1 = 30)
Suunto SME-ML = 46
Aladin Pro = 41
Micro Brain Pro Plus = 38
Datamax Sport = 52
Skinnydipper = 48

Multi-level Tables
DCIEM Tables = 35
PADI Wheel = 42

Standard Tables
(i.e. using maximum depth and total bottom time)
U.S. Navy = 10
Bassett = 5

Activation

Although the "Solution" will activate automatically if submerged, it is recommended to activate it prior to diving by touching the contacts with moistened fingers. The computer will turn itself off after 3 minutes if it doesn't go diving.

Pre-Dive Planning

Before an initial dive (and between repetitive dives) the "Solution" clearly displays the NDLs for dives to depths between 9m and 45m, in 3m increments. Although the unit only displays NDLs to 45m in the planning scroll, it provides full depth, time and decompression functions for dives to depths up to 99m.

Simulation Mode

The "Solution" can simulate dives. This enables a diver to run through a particular dive in advance to see what decompression will be required. This can be a handy function when planning certain multi-level dives and/or a decompression stop dive, if necessary. In this way a diver can find out in advance whether or not a particular dive will require mandatory decompression stops and, if so, what stops would be necessary. This can help to ensure an adequate air supply. In simulation mode, time goes four times faster

than normal time, so enabling the dive to be run through relatively quickly.

Dive Mode

During a dive the "Solution" provides a variety of information.

The current depth is displayed in very clear and legible digits (and, by my tests, quite accurately), as is the dive time, remaining no-decompression stop time and temperature. During the dive the maximum depth is indicated on a bar graph, which is adequate if relying on the computer to calculate decompression (but which isn't ideal if you are using the unit as a depth gauge and want to look up dive tables to determine your decompression status).

The "Solution" provides full multi-level facilities, reading the current depth and recalculating decompression profile every few seconds, so giving the diver credit for time spent shallower than the maximum depth of the dive.

Suunto cautions divers to avoid dives requiring mandatory decompression stops. This is a responsible caution since there is now substantial evidence indicating that decompression stop dives carry a higher risk of bends than do no-stop dives. There is also evidence indicating that this may be a high-risk area for dive computers.

However, for divers who find themselves in a situation where they need to perform decompression stops, the "Solution" provides support.

If the NDL expires, the computer clearly displays the minimum time required to reach the surface - which includes both the ascent time (at 10 m/minute) and time at the decompression stop(s). The depth of the first stop/ceiling (i.e. the shallowest depth to which you can safely ascend) is displayed on the bar graph, reasonably clearly.

The "Solution" allows you to decompress deeper than the ceiling as it clearly displays the maximum depth the diver may decompress at (the "floor"). This is a handy function as it is difficult to do relatively shallow stops in certain conditions (e.g. swell). Therefore, it allows a depth range (usually between 3-9m) in which to decompress.

Continued overleaf

Continued from previous page

The "Solution" generally indicates a ceiling of 3m. There is some evidence to indicate that it may often be better to decompress at depths greater than 3m. However, it must be realised that decompressing deeper will increase decompression time, due to the slower "off-gassing" rate, and, because of the increased depth and time, more air will be required to complete decompression. If little air is available, a diver is advised to decompress close to the "ceiling".

The unit tells you if you are too shallow for your stop and gives you 3 minutes to rectify the situation before going into Error Mode. Once in Error Mode the unit alternatively flashes "Err" until desaturated. (Interestingly, it will still provide all decompression information and allow you to dive while in Error Mode.)

Suunto are to be congratulated for the ascent rate indicator incorporated in the "Solution". It is the only dive computer that gives you a really meaningful idea of your ascent rate, clearly warning as you approach the desired ascent rate and if you exceed it. It does it by displaying a series of dark rectangles.

If your ascent rate is between 2.5-5 m/minute the ascent meter displays a single rectangle. If the rate increases to 5-7.5 m/minute two rectangles are displayed. All three rectangles are displayed at rates from 7.5-10 m/minute. If you exceed 10 m/minute, which is maximum recommended ascent rate, a "SLOW" warning is displayed and an audible alarm is emitted.

Post-Dive Mode

After a dive the "Solution" clearly displays the maximum depth (both on bar graph and large digits) and dive time. It also displays the dive number, the surface interval, the desaturation time and the temperature.

The desaturation time is the time, according to the computer, required before the diver's nitrogen levels have returned to normal. After this time (which may be up to 48 hours after very extensive repetitive diving) has expired the unit will switch itself off. Any dive conducted after 10 minutes of a previous dive and before the desaturation time has expired is calculated as a repetitive dive and the NDLs for possible repetitive

dives are continuously scrolled. If the surface interval between surfacing and resubmerging (to deeper than 1.5 m) is shorter than 10 minutes, the dives are treated as one single dive and decompression is calculated accordingly.

The "Solution" also suggests the time that needs to be spent as surface-level before flying. This time equates to the desaturation time, and is relatively short after short dive times, becoming progressively longer as dive time increases. Although the time given is often reasonably conservative (sensibly more so than other current dive computers), it may not always be conservative enough. Divers are strongly advised to wait at least 24 hours before flying after a dive, where possible.

Continued in the next issue - Altitude Adjustment, Dive Profile Memory, Log Book Memory, Dive History Memory, PC Interface, Battery Life and John Lippmann's conclusion to his product release on the Suunto Solution dive computer.

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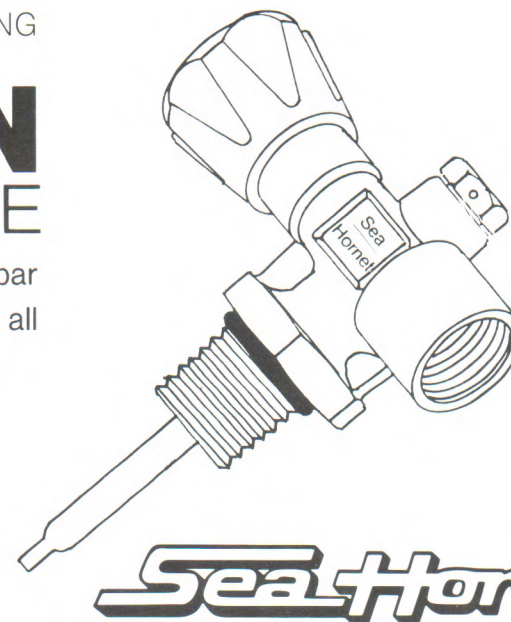


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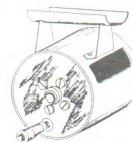
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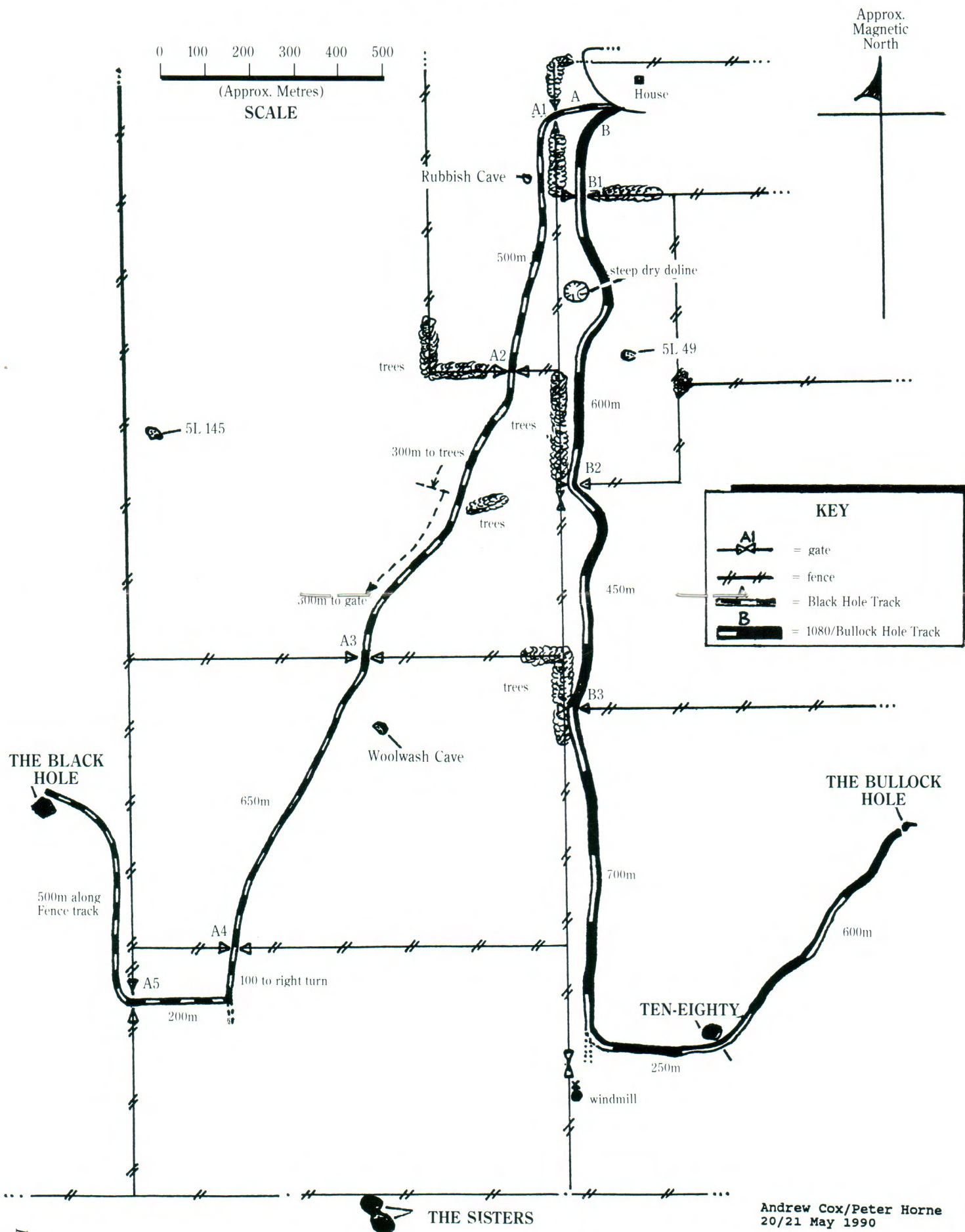
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Andrew Cox/Peter Horne
20/21 May 1990

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CROSS-OVER SEMINAR

Sinkhole/Cave/Penetration - Adelaide, 10 February, 1991

Firstly, many thanks to the organisers of this seminar, Richard Megaw, Chris Brown and Greg Bulling. This three hour session sounded fairly serious, but in fact it not only turned out to be a great get together of many old (some VERY old) faces in the cave diving fraternity. An added bonus were the interesting presentations of new directions in cave diving techniques and equipment.

Greg showed his video on Warbla Cave on the Nullarbor. It was very well put together, with good coverage of the dry and wet aspects of this incredibly large and beautiful cave. His voice over was interesting, and those around me all voted it higher in quality and interest than Mike 'n' Mal!

Chris covered two major topics - hand signals and equipment. His hand signals are based (in other words - pinched) on existing American signals. I have been under the impression for many years that Chris was being his usual revolting self by giving me a long string of very suggestive messages.

However, all has been explained. His gestures are in fact a very succinct form of cave diving language. Now I can respond to Chris with more than the usual two fingers forming a "V".

After a chat over coffee, we were shown the latest changes and modifications in equipment. It is obvious when observing Chris's home made equipment that he is a plumber - so many uses of PVC pipe cannot be thought of by a layperson. We now also know why he is broke - so many back ups for every possible equipment failure (i.e. 6 torches)! The list is seemingly endless. We all had to admit that his gear was well thought out, and very streamlined for maximum efficiency and safety.

We all finished the seminar as interested cave divers with new ideas on how to improve and update our equipment, not only for efficiency but for safety. Many thanks for the seminar - it was informative AND enjoyable. Thank you!

Judi Minervini

MYSTERIES OF THE MOUNT GAMBIER SINKHOLES

by Mia Thurgate

PART TWO: Exploring the Plant Life

For many people, plants are boring in that they display no remarkable "behaviour", they do not appear to move, and their sex life is neither showy or outrageous. You might also be inclined to ask; when it comes to Mt. Gambier's sinkholes, just how important and interesting can all that green slimy stuff be?

Perhaps the most important thing about plants is their ability to photosynthesise. The simplest way to explain photosynthesis is that light energy from the sun is harnessed by a special green pigment (chlorophyll) and converted to chemical energy. This chemical energy is then used to break down water and carbon dioxide, to produce carbohydrates (sugars). Oxygen is an important by-product.

Why is photosynthesis important? Because animals cannot produce carbohydrates themselves, which are required for nourishment and growth. Animals must therefore eat plants or plant-eating animals (herbivores) to survive. Also, animals require oxygen for respiration, and the chief source of oxygen is photosynthesis. Without plants, animals cannot survive.

Plants are an important and integral part of the aquatic environment. They can enhance an otherwise barren landscape – imagine how uninspiring a dive in Ewens or Pies. would be without that backdrop or vegetation? Fringing plants on lake shores are important stabilisers of bottom sediments, minimising silt-outs from runoff after heavy rain. Waterbirds use aquatic plants for nest building material. Insect larvae, such as those of the caddis fly, build protective shells by cementing pieces of reed together. Many insects and fish lay their eggs on leaf surfaces. These animals also use plants to hide behind in times of danger.

So now you know why plants are important, but are they really all that interesting? To find out, we need to appreciate the characteristics of the plants and their communities in our sinkholes and springs.

Plant Communities of the Sinkholes

Plant communities in the sinkholes are dominated by algae and cyanobacteria. Algae can be defined as photosynthetic plants that

do not possess a central vascular (water-conducting) system, and that do not have distinct roots, stem or leaves. They can exist as single cells (Figure G), colonies (Figure J), or filaments (Figure C), and are either attached to other plants (epiphytes), the lake bed (benthos), or may be free-floating.

The smallest of the free-floating aquatic algae are called phytoplankton. These tiny organisms form the base of the food chain and are usually eaten by microscopic animals called zooplankton. In spring and summer, given suitable conditions, the number of planktonic species can increase to the extent that the waters of our sinkholes appear green, and visibility is dramatically reduced. It's rather like swimming through a floating lawn!

Phytoplankton move around that water column in two ways. Some are moved passively by wind or water currents (Figure L). Other are capable of self-locomotion (Figures I & K). Movement is possible by means of one or more hair-like structures called flagella. The flagella is able to move the algal cell through the water by beating from side to side. So much for the argument that plants are boring because they cannot move!

Colonial and filamentous algae are comprised of many cells, and although some motile examples occur, these forms are usually found attached or draped on walls, rock piles or bottom sediments. Colonial algae consist of groups of cells that are sometimes bound within a sticky adhesive or mucilage. It is this material that gives these forms their characteristic sliminess. Filamentous algae are typically composed of a long strand of numerous cells joined end to end, which may survive alone or as part of a colonial aggregate. Some filaments have developed a branching form (eg *Chara*, Figure B), and so may be mistaken for the more complex vascular plants that possess specialised roots, stems and leaves.

Of the six algal divisions that are currently recognised, at least four are represented in the springs and sinkholes. Green algae are dominant. The blue-green algae, or cyanobacteria often associated with blooms,

are not considered to be true algae because the internal cell structure is organised in a manner similar to that found in bacteria. Within the sinkholes, the cyanobacteria are quite prolific, and are most notably associated with the development of stromatolites.

Stromatolites

This term refers to structures that consist of a mixture of inorganic and organic material that are bound and deposited by living organisms. Stromatolites are typically laminated. Living stromatolites were recently recognised in the sinkholes, and microscopic examination of the surface of these features has shown that a complex community is responsible for their construction. The communities are comprised of mostly green algae and cyanobacteria, both of which are capable of precipitating calcium carbonate deposits. Layers of this material are built up over thousands of years to form structures that range from 5mm to 5m tall!

Due to long-term environmental changes,

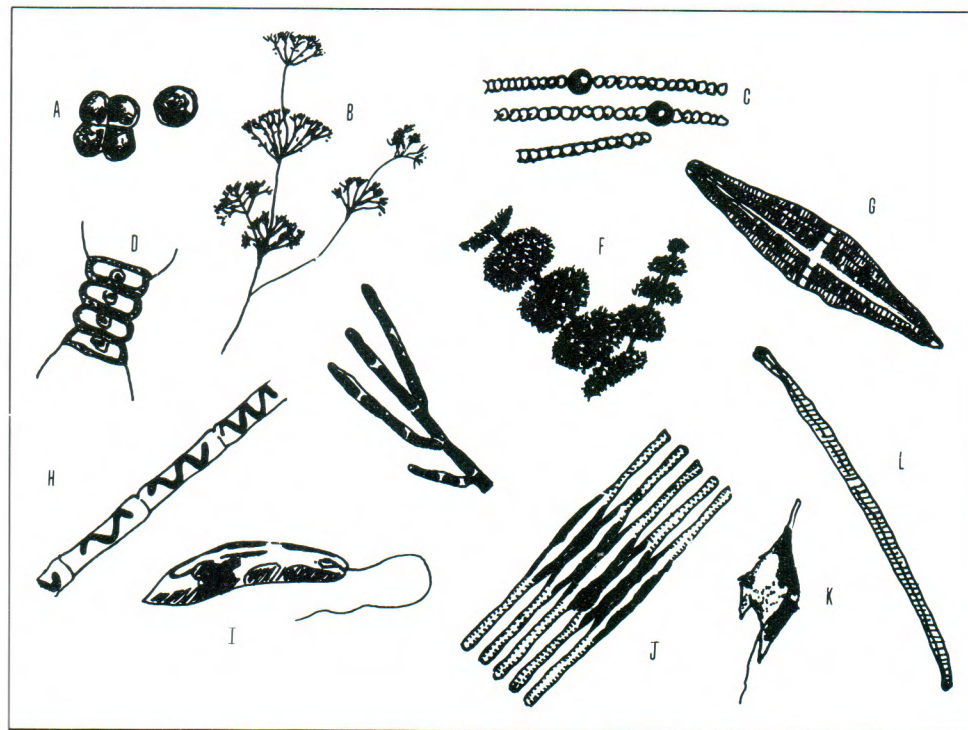
living stromatolites, particularly in freshwater, are now quite rare. The stromatolites of the Mt. Gambier sinkholes are of world significance, not only because they are living, but also because of their vast numbers, highly varied shapes, large sizes and depth ranges, and because of their unusual habitat.

The best places to see these amazing structures are Gouldens Hole and Blacks Hole, where they occur from the surface down to depths of 20m. Like corals, stromatolites provide shelter and food for a number of animals such as sponges, bryozoans, hydra and water beetles. They are also extremely soft along actively growing surfaces, so take care to avoid hanging onto them on deco stops!

The Plant Communities of the Spring Systems

The plant communities of Ewens and Piccaninnie Ponds are dominated by complex plants with specialised structures. Most have

Continued overleaf



A range of freshwater algae common in Mt. Gambier's sinkholes and spring lakes.

Continued from previous page
a continuous network of tissues that conduct water, carbohydrate and nutrients, and are called vascular plants. Leaves, stems and roots are also clearly defined. Ancestors of these plants were land-dwelling species, so a number of adaptations have evolved to overcome similar problems as those faced by a diver. Namely, coping with problems of gas uptake, buoyancy and pressure.

Land plants do not grow underwater because carbon dioxide cannot diffuse through liquid fast enough to support photosynthesis. For aquatic vascular plants this probably is offset by the plants not needing to guard against water loss, so adaptations are geared towards promoting photosynthesis. Leaf thickness will decrease, while the overall shape becomes much broader. This provides a maximum surface area available for gas uptake.

Most aquatic vascular plants have developed a system of continuous air spaces, that can occupy as much as 60% of the plant bulk. This system allows for the transfer of gases to all parts of the plant, but it can also serve another purpose. Aquatic vascular

plants can use water as a means of support, so the air spaces can act as floats, maintaining perfect buoyancy.

The effects of pressure on aquatic vascular plants are not well understood, but it is generally accepted that they cannot grow well in excess of 2 atmospheres, or approximately 10m (at which point light intensity is also reduced). Most plants are able to grow normally at 0.5-1 atm, and as pressure increases, leaves become narrower and more elongated, root systems are reduced, and eventually growth is completely inhibited. There is even evidence that excess pressure at depth may render a plant sexually sterile. Could this be yet another worrying side effect of deep diving?

Obviously, aquatic plants have to adapt to a great many adverse conditions in order to survive. So, with some appreciation of their general biology, make the effort to protect the aquatic plants from disturbance. They may not always look or feel pleasant, but without them, diving in Mt. Gambier just wouldn't be the same.

The final article in this series will examine the less well-known animals of our sinkholes.

BOOK REVIEW

by **DES GORMAN**, BSc, MB ChB, FACOM, PhD.

Royal New Zealand Navy. Royal Adelaide Hospital, and
The University of Adelaide.

DEEPER INTO DIVING by **J. Lippmann**
JL Publications, Victoria, Australia, 1990.

John Lippmann is an enthusiastic diver and writer, and consequently his 2 previous books on diving have been successful. This book will have a similar fate as it is well researched and written and will satisfy the needs of many involved in diving activities.

The book is divided into sections of physics and physiology, decompression tables, altitude diving, multi-level diving, decompression diving, administration of oxygen and a miscellaneous final section. There are also several appendices. The strength of this book is the simple translation and practical examples given to explain extremely difficult and confusing phenomena. Such explanations are necessary to an increasingly better informed recreational diving community and essential given the active marketing of new decompression tables and decompression computers. A

healthy cynicism is needed in reviewing these products and this is apparent in John Lippmann's writing.

Purists may object to the frequency of personal communications and unpublished observations cited in this book, but this is the cost of trying to describe what medical practitioners and scientists active in diving currently think and believe rather than what they have written. The nature of these citations then is a reflection on both diving and those involved and on the recent changes in understanding of the diving illnesses.

"Deeper into Diving" is a logical progression from John Lippmann's earlier books and, although it is written primarily for dive masters and diving instructors, it would be a useful addition to the diving library of serious recreational divers, navy divers, commercial divers and general medical practitioners interested in learning more about decompression and diving medicine.

Editors Note: "Deeper into Diving" is available direct from the Author, by sending a cheque or money order for \$50 (includes postage within Australia) to J.L. Publications, P.O. Box 381, Carnegie, Vic. 3163.

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- ◆ **A report on Mt. Gambier's Blue Lake**
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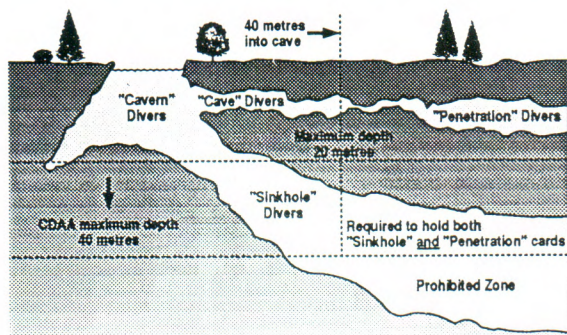
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CDAA Cavern Diver Course Outline

1. Cavern Dive Site Definition

A cavern dive site is a body of water which has a maximum depth of 20 meters, slight undercuts/overhangs, near vertical ascents and daylight is always visible. E.g. sea caverns, flooded quarries, lakes, dams and limestone caverns. Maximum distance from the surface 40m.

Diagrammatic Representation of all CDAA Diver Classifications



2. Course Aim

The aim of this course is to introduce you to the skills and theory required for cave and sinkhole diving. Also to train you fully in the techniques of cavern diving, make you aware of the role of the CDAA and to introduce the concept of environment care.

3. Course Duration

Approximately three days.

4. Prerequisites

- Open water diver certification or equivalent, must be held for at least 12 months. Or an advanced diver certification, no minimum time for the qualification to be held.
- Minimum age 16 years.
- Current diving medical (within 12 months)
- Dive log to include 15 dives in the past 12 months of which two are night dives and five are to be to at least 18 meters.

5. Student Equipment

- Mask
- Fins (straps taped, if necessary)
- Tank (50 cf minimum, J valve plugged or taped down)
- Single hose regulator with SPG, octopus (1m hose, minimum), BC inflator.
- Wetsuit or drysuit with hood.
- BC (CO2 plugged)
- Submersible dive tables.
- Slate and pencil (recommended)
- Compass (recommended)
- Weights if required
- Two good quality battery powered lights, one primary and one backup, burn time of each sufficient to last for the duration of dive.
- Knife (recommended arm/chest mounted).
- Tether clip (to be included by instructor as part of course cost).
- Watch or timing device.
- Depth gauge (MDI recommended).
- Reel with a minimum of 50 m of line (one per pair of divers, to be supplied by instructor if necessary).

Date of issue 28th February 1991

6. Theory

Approximately six hours covering these topics:

- CDAA system
- CDAA cave classification
- Cavern and freshwater environment
 - Formation and types of caverns and caves
 - Silt
 - Temperature
 - Algal zone
 - Buoyancy
 - Hazards
- Equipment
- Buoyancy control and anti-silting propulsion techniques
- Use of tethers, lines, reels and shotlines
- Underwater communications
- Dive planning and site access protocol
- Psychological aspects, stress management
- Decompression sickness and tables
- Accident analysis
- Emergencies procedure
 - Loss of air, octopus use
 - Entanglement
 - Light failure
 - Silting
 - Lost diver
 - Lost line

7. Practical Sessions

7.1 Land Drills

- Guideline use- reel in and out, knots, tying off
- Guideline following - use of tether, negotiate tie off, maintaining direction, buddy contact
- Emergency procedures - blackout line following, use of octopus

7.2 Water Training Sessions

A minimum of two training sessions to be conducted in a freshwater environment E.g. Pools, lakes or 'safe' caverns.

- Guideline use - as for land drills.
- Following line with zero visibility (blackout).
- Sharing air - octopus, mask off for extra stress.
- Buoyancy and body positioning - horizontal.
- Propulsion techniques - three techniques.
- Reel work, air emergency tasks

7.3 Freshwater/Cavern Dives

The skills learnt in the water training sessions must now be applied in an actual cavern. A minimum of four cavern dives in at least two different locations.

8. Assessment

- Continuous assessment during the course
- Theory test

9. Texts

- Student text - NSS Cavern Diving Manual
- Additional References - Cave Diving in Australia (Lewis and Stace), NSS Cave Diving Manual, Diving Emergency Handbook (Bugg and Lippman)

HAND SIGNALS IN CAVE DIVING

In 1985 I was lucky enough to be able to go to America and the Bahamas to dive in their caves. Whilst there, I dived with many very experienced cave divers and learnt more about cave diving in eight weeks than I had learnt in the previous six years.

I remember well one of the first dives that I did in Florida. It was in Devil's Eye at Ginni Springs. I dived with an American by the name of Joe Prosser. Joe was a cave diving instructor and on the first dive I did with him, we cruised through some magnificent sections of cave. Shortly into the dive, Joe's hand seemed to have a severe gibberish attack and made all sorts of strange signals at me. I was able to decipher that one of the signals meant "OK", but for the rest of the signals, I was dumbfounded. After surfacing from the dive, Joe went through a series of hand signals that American cave divers were using and over the next eight weeks I managed to learn a large number of these hand signals and put them to good use.

I was very impressed with the extent of the conversation you could have with your buddies and the knowledge that they understood what you were trying to

communicate without getting out your wetnotes and having to rewrite "War and Peace" or "Gone With The Wind" just to get your message across.

Recently, a book titled "Cave Diving Communication" has been published by the National Speleological Society, Cave Diving Section. It was written by Joe Prosser and H.V. Grey. This book is very informative and hopefully in the near future it will be available through the CDAA. I would urge all members of the Association to get a copy and read it. Apart from hand signals it also covers other sections of cave diving such as line arrows and use of jump reels.

Since I started cave diving in 1978, I have noticed that hand signals used by Australian cave divers have generally been limited to signals taught in open water courses. Communications between buddies has been somewhat limited and confused due to the lack of knowledge of appropriate cave diving hand signals.

Over the next four issues of Guidelines, hand signals appropriate for use at the four different levels of cave diving will be introduced and their meanings explained.

There are three command signals. A response must be given by buddy or buddies before dive can continue.

"OKAY" OR "YES"

Asks buddy if he/she is OK or that he/she understands. Requires a response.



"HOLD"

Command dive to be halted temporarily. Requires acknowledgement and compliance.



"SURFACE" OR "CALLING A DIVE"

Commands dive to be terminated. Requires acknowledgement and compliance.



CAVE DIVING LAW: Any diver can call a dive at any time for any reason

by Christopher Brown

Members going through the new course system will be taught hand signals as part of the course and will be required to demonstrate their use underwater.

When using hand signals it is important to acknowledge your buddy's communication so that they know you understand. A simple OK is all that is required or if there is a misunderstanding, start with the "Question" signal and repeat back to your buddy what you think they meant. Do not proceed on the dive until the communication is understood. If you are still having trouble, then use your wet notes or slate and write the message. If you cannot get a response from your buddy, then you should "call" the dive and escort them out of the cave. No response is usually caused by excessive stress, exhaustion, narcosis or your buddy has expired (died).

After you have learnt the signals, then you have to learn how to say phrases with them. Some signs can mean slightly different things depending on what context they are used in.

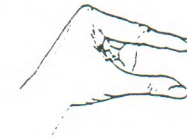
The hand signals shown in this issue of Guidelines are reasonably self explanatory, so try and learn them and use them the next time you go diving.

It is always better to acknowledge a buddy's signal with a "Yes" or "No" so that they have an acknowledgement of their signals, but it is not mandatory unless it is a command signal.

"BIG"



"SMALL"



"LIGHT"



"NO"



"QUESTION"



"BUBBLES"

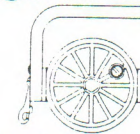


"PROBLEM" OR "BAD"

Used to indicate that a problem exists



SPELEONAUT



CAVE DIVING EQUIPMENT

- ▶ Safety/jump reels
- ▶ Primary reels
- ▶ BC wings, backplates & harnesses
- ▶ S/steel twin tank bands
- ▶ Primary lighting systems
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CDAA SITE ACCESS

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

SITE	LEVEL	OWNER	ACCESS DETAILS
MOUNT GAMBIER – SOUTH AUSTRALIA			
Ewens Ponds	Nil	Dept. of Lands PMB 124, Mt. Gambier (087) 35 1111	Groups of 6 or more, phone/mail to Dept. of Lands. Smaller groups, no need. Ponds are closed 1 September – 30 November each year.
Horse & Cart Tea Tree	CN	Mr. Don Telford CN PO Box 2629, Mt Gambier (087) 38 4003	By phone or mail, 1 week prior.
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 C	Dept. of Lands CN PMB 124 Mt Gambier (087) 35 1111	Contact Dept. of Lands by phone/mail prior to diving. Stay out of Gouldens when pump is operating.
Ela Elap One Tree	S S	Mr. Peter Norman Private Bag 67, Mt Gambier (087) 38 5287	By phone or drop in before diving. Accommodation also available.
Swim Through	C	Valerie Earl C/- PO Allendale 5291	Currently CLOSED pending new access arrangements.
Piccaninnie Ponds	S	NPWS 11 Helen Street, Mt Gambier (087) 35 1171	Permit holders by phone. Be aware of delicate vegetation.
Hells Hole Pines Mud Hole	S C C	Woods & Forests PO Box 162 Mt Gambier (087) 24 2711	Contact Woods & Forests (Forests Clerk – Barry Phelan) by mail or phone and arrange permit. No diving on total fire ban days.

SITE	LEVEL	OWNER	ACCESS DETAILS
Black Hole	S	Mr. Colin Traeger,	Contact CDAA Records Officer for diving deed THEN mail Booking Form to Colin Traeger 2 weeks prior, stating names/qual. of all divers, and time slot – 1pm Saturday, 9am or 1pm Sunday, or 8am (weekdays).
Ten Eighty	S	Manager,	
Bullock Hole	S	Barnoolut Estate PO Box 12, Mt Gambier 5290 (087) 26 6215	
Max's Hole	C	Mr. Trevor Edwards PO Box 1319 Mt Gambier (087) 26 8277	Phone or mail 1 week prior to dive.
Shaft	S	Mr & Mrs Ashby	ONLY by contacting designated "guides" who will arrange access. Refer "Guidelines" Issues 36 – July 1990.
Engelbrechts – East – West	C P	Mt Gambier Council	Obtain key from Mt Gambier Tourist Information Centre.
Three Sisters	P	Millicent Council	Currently closed until new access arrangements completed.
Idlebiddy (5L250)	P	Woods & Forests P.O. Box 162, Mt. Gambier, 5290 (087) 24 2711	Access ONLY via CDAA Site Access Committee – refer National Director's Report issue 38.

NULLABOR – WESTERN AUSTRALIA

Cocklebiddy	C	Regional Manager C.A.L.M.	Must apply for permission to dive at least 4 weeks in advance of trip.
Murra El Elevyn	P	44 Serpentine Rd, Albany 6330	
Tommy Grahams	C	Ph: (098) 41 7133	Small dive site next to main chamber – Sinkhole
Weebubbie	C		

NULLABOR – SOUTH AUSTRALIA

Warbla	P	N.P.W.S. Ceduna	Currently CLOSED to all diving subject to draft management policy.
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CN = CAVERN

S = SINKHOLE

C = CAVE

P = PENETRATION



CDAA PRODUCTS

Please send orders with cheque or money order ONLY to
CDAA, P.O. Box 290, North Adelaide, S.A. 5006

BOOKS

Cave Diving in Australia – by Lewis & Stace. The classic in Australian Cave Diving circles with descriptions of most of the sites available in Mount Gambier, and useful technical information as well.

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

South Australian Diving Fatalities 1950 – 1985 – by Peter Horne. A good manual of case studies indicating what NOT to do in both sea and cave diving.

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 a part of every cave divers' kit.

NSS Cavern Divers Manual – The standard reference manual in Cavern Diving covering just about every conceivable topic. Also covers most principals behind safe sinkhole and cave diving.

Guidelines – Back issues Nos. 8-14, 16-20, 22-28, 35-38

CLOTHING

Windcheaters Navy/white logo and Red/black logo. Sizes 16, 18, 20, 22, 24.

Polo Shirts Navy/white logo and Red/black logo. Quality poly/cotton with collar and buttons. Sizes 16, 18, 20, 22 only.

T-shirts Navy/white logo and Red/black logo. Sizes 16, 18, 20, 22, 24.

MISCELLANEOUS

CDAA Yellow Stickers You must include a stamped, self addressed envelope.

Stubbie Holders Red with black logo. Foam/plastic shell.

TRADING POST

FOR SALE – TWIN TANK BANDS: 321 grade s/steel. Fit 63 or 92 cu.ft. tanks and will fit any back-pack. Complete with stainless all thread nuts & washers. \$100 pair. Wayne Wilson (03) 338 1432 (ah).

FOR SALE – COMPRESSOR: Bauer 15 cubic foot air compressor. KA15 Block, three phase motor, auto dump block. \$7,500. John McCormick (03) 579 0570 (w).

FOR SALE: 2 x 88c.f. tanks, new paint, mesh and boot, in test, \$220 each. Y-valve \$75. 2 x Moray 7mm pro-suits, size 4 slim, \$200 for both. Dacor 950XL reg. with gauge and ocy, recently serviced, \$300. Contact Tony Richardson (03) 754 6163 (ah).

FOR SALE – DIVE COMPUTER: Suunto SME-ML dive computer, wrist module type, full multi level facilities, excellent condition, new price \$800, sell for \$550. Tony Davis CDAA 1187 Telephone: (03) 579 0570 b.h., (03) 781 3820 a.h.

PRICE

\$16.00

\$10.00

\$15.00

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The light designed by divers for divers. The **Faro Light** is the ultimate dive torch for the diver who needs brightness with a long 10 hour burn time. The **Faro** is powered by 8 "D" cells which run an efficient 8 watt krypton globe. This torch is double "o" ring sealed to ensure its water proofness to 120 metres. It is neutrally buoyant and extremely comfortable to hold. This torch has to be used to appreciate all its features.



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CASSIN PRODUCTS INCLUDE:

- Harnesses • Carabiners • Jumars
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At last a dive computer that performs like a computer.

Easy to use, simple to understand. User friendly!

THE SOLUTION — the most powerful diving computer ever to be offered to recreational divers. Featuring the most sophisticated software available, this powerful 8-bit CMOS microprocessor utilizes a custom LCD screen that offers —

- **Pull down menu** for selection of surface functions:
- **Dive log**
- **Computer history**
- **Exclusive detailed dive profile recorder**
- **Built in 4 × speed simulator**
- **PC compatible** easy to use interface with desktop log
- **Computer-generated** dive profile graphs via PC interface.
- **Intelligent display programming:**
- **Digital display of maximum depth** upon surfacing.
- **No DEC Time** available.
- **AScent Time** total time required to surface from your present depth calculating ascent and stop times combined.
- **Decompression range** when appropriate, describes both the decompression ceiling and the decompression floor.
- **Total desaturation time** representing total time required for the computer to completely "off gas."
- **Current temperature.**
- **Digital dive counter.**
- **Low battery warning.**
- **Versatile dive planning mode.**

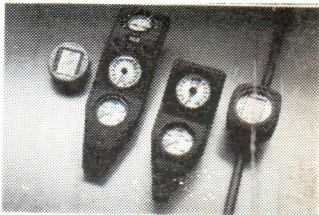
Features for the most demanding divers in the world.

Offering:

- **Automatic activation**
- **Expanded depth range** to 99 meters/325 ft.
- **Altitude adjustable** to 2500 meters/8200 ft.
- **Expanded decompression capabilities** to include the needs of the professional diver
- **Variable ascent rate display**
- **Ascent rate alarm** 10 meters/33 feet per minute.
- **Audible alarms for:** Excessive Ascent Rate, Omitted Decompression, Excessive Depth, Excessive Decompression
- **Flashing alarms for:** Excessive Ascent Rate, Decompression Ceiling, Decompression Floor, Approaching Depth Limit (99 meters)
- **The most sophisticated memory available**

Based on proven concepts of true multi-level diving performance.

THE SOLUTION's microprocessor instantly calculates the precise amount of time spent at every depth of your dive.

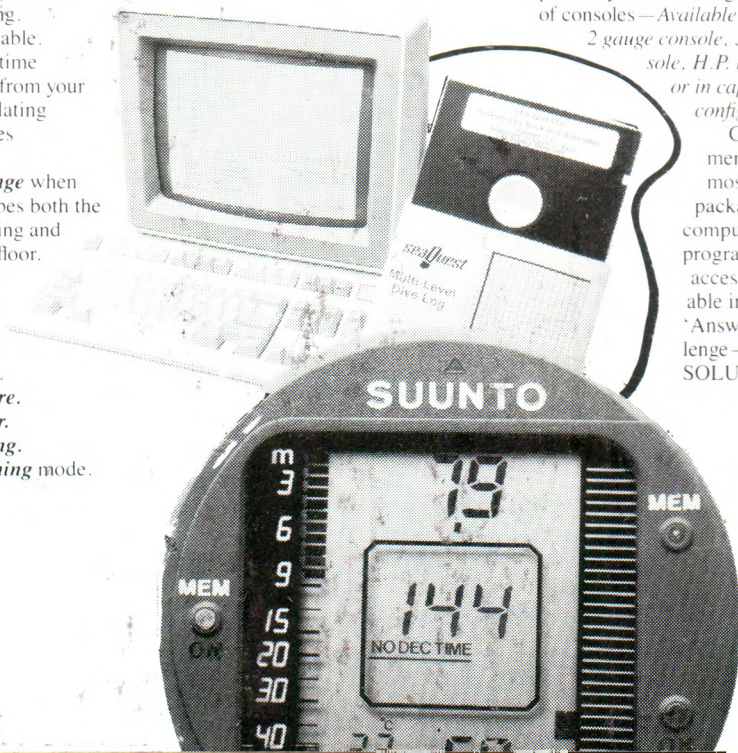


9 compartments with half-times from 2.5 minutes to 480 minutes continuously model the absorption and release of nitrogen during all phases of diving including ascents, surface intervals and repetitive dives.

Interchangeable with existing Sea Quest & Suunto Instrument modules and designed for compatibility with future generations of consoles — Available in wrist,

2 gauge console, 3 gauge console, H.P. hose mount, or in capsule only configurations.

Complimented by the most complete package of dive computer support programs & accessories available in the world. 'Answer the challenge — Find THE SOLUTION.'



VOTING

Open letter to members

Since the 1989 AGM, the National Directorate have been operating on a very flexible arrangement. The Constitution being wavered to allow the new system to be developed. That flexible arrangement has now come to an end and it is time to vote for the adoption of the new system.

There has been a lot of discussion on how voting for the new constitution, regulations and training standards should take place. The amount of time it would take to discuss and vote on each point would be prohibitive. Your elected representatives and their appointed co-workers have spent many thousands of man hours during the past two years discussing each point in detail and we have developed, what we believe to be, a reasonably sound set of documents.

With these thoughts in mind, it has been decided that each document will be voted on as a whole. i.e. ACCEPTED or REJECTED. If you find that you agree with the document as a whole but you want one or two points changed, then I suggest that you vote in favour of the document but submit a motion for the AGM. (Do not put the motion in with your ballot paper if you want us to read it) Voting in this way will allow us to accept or reject the proposed changes, but still give each member their constitutional right to request amendments.

If you find that you do want to propose a motion, then it must be in writing, addressed to the Business Director at our Adelaide postal address, and received before September 13, 1991. All members will be duly notified of any motions before the AGM. NO motions for alterations to the Constitution, Regulations or Training Standards will be accepted from the floor on the night of the AGM.

You will notice that the Constitution and Regulations are in loose leaf A5 format. All material will now be produced in this format to allow you to produce a folder of important CDAA documents, maps, training notes, etc. CDAA Members Manuals are being printed and these should be available by the AGM, so make sure you don't lose this material as you will need to add it to your manuals.

You will also notice that you have not been sent the full training standards. A lot of the information in these standards refers to items such as land drills, theory topics etc to be run in courses. Rather than sending each person numerous pages of this material, we are sending a condensed version which contains the course prerequisites, and course limits. All members have the right to view the full standards if they wish. These can be obtained from Alan Jolliff or your nearest CDAA instructor.

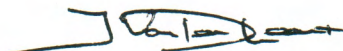
Now moving onto a few different issues. Nominations for the Directors positions have now closed. Only two nominations were received by the due date, so both will automatically be appointed to office. Tony Davis (Guidelines Editor) will become Business Director and Glen Harrison (SA Training Co-ordinator) will become Standards Director. Unfortunately, many people believed that I was re-nominating for National Director, but a new job and some major home renovations will keep me pre-occupied for a while. As nobody nominated for this position, nominations and voting will be held at the

AGM.

During the day before the AGM, Chris Brown (07)379-1445 and John Dalla-Zuanna (03)370-1093 will be conducting a Penetration Education Program (Phase II) Cave and Penetration Divers. The program will cost \$30 and will take most of the day. Please make sure you book.

Thankyou for your patience and input over the past two years.

Yours in safe and enjoyable cave diving

A handwritten signature in black ink, appearing to read 'John Vanderleest', with a horizontal line extending to the left.

John Vanderleest
(National Director)