



C.D.A.A. Newsletter

GUIDELINES

No: 59 - OCTOBER 1996

CAVE DIVERS ASSOCIATION OF AUSTRALIA
(Incorporated in South Australia)

Print Post No. PP 381691/00020

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EDITORIAL

Welcome to issue 59. These have been interesting times for the CDAA.

Those veterans of AGMs who attended this year would have noticed the same faces showing dissatisfaction in the way the CDAA has been run. There was, however, support and at times praise for the previous Directorate, particularly regarding the financial management of the CDAA. Then came the elections; all positions were retained, or so we thought. However, the change in constitution resulted in the position held by Warrick McDonald no longer existing in its previous form, causing him to resign. This is unfortunate, as Warrick was instrumental in a major turn-around in the CDAA's previously woeful finances. The AGM also revealed that a number of members had not been fully aware of the implications of an altered constitution at the time of voting - a major management change with even more potential for dispute and instability and another increase in CDAA's administration costs. Let us hope that the motivation of these changes is not purely political. It is up to us all to ensure that the interests of the majority of cave divers are catered for.

As you will read, the new Directorate has been decided. In addition to Lisa Bernasconi and Ian Lewis, the new

directorates are Chris Brown - Business Director, Gary Barclay - Site Director and Andrew Cox - Treasurer. I hope that the larger personalities in the Directorate will put their differences behind them and work together for the benefit of the CDAA.

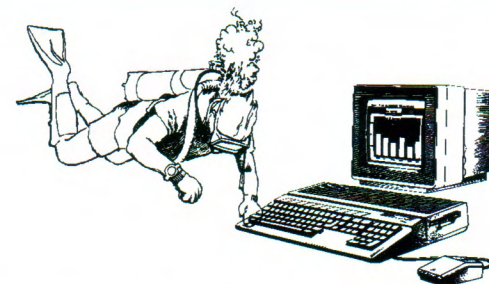
Onto something quite different. Thanks to the efforts and technical expertise of Dean Niclasen and Robert Smith, the CDAA has finally an official web page. This now means that the CDAA can be accessed from anywhere in the world. Those with the technology can view it at:

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

There is also an active mailing list which members can subscribe to at: cdaa@artemis.eng.monash.edu At present 41 people have subscribed to this service, the majority from Australia and a few from overseas. It is an excellent medium for the rapid exchange of information and ideas and represents a better exposure and more professional image for the CDAA. I would like to thank those who contacted me via e-mail with suggestions and support. I welcome your comments. Please note my change of e-mail address: vk3vic@vds.com.au and my new contact number 0419 322 106.

Victor Kostiuk
Editor

CDAA WEB PAGE



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

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Front cover: Cheryl Bass and Phil Prust in Tommy Grahams Cave, Nullabor, Western Australia. Photo by Peter Rogers

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, Victor Kostiuik, 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.

CDAA DIRECTORY

The following is a list of people that can be contacted for CDAA matters. Please contact the most relevant person or, if unsure write to: C.D.A.A.

P.O. Box 290

NORTH ADELAIDE

S.A. 5006

and your enquiry will be passed on.

NATIONAL DIRECTOR

Lisa Bernasconi 0414 330 774 (mobile)

BUSINESS DIRECTOR

Chris Brown 014 957 842

STANDARDS DIRECTOR

Ian Lewis 015 284 051

SITE DIRECTOR

Gary Barclay Contact 055 658 793 (h)
Fax 055 658 118

TREASURER

Andrew Cox 058 265 438 (h)
014 432 725 (mobile)

RECORDS OFFICER

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Nicholas Jones 015 851 313

CDAA SALES

Wayne Wilson (03) 9338 2975 (hm)

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Phil Argy (087) 23 0879 (hm)

WESTERN AUSTRALIA

Andrew Poole (018) 928 038

NEW SOUTH WALES

Andrew Robertson (02) 525 0995 (hm)
(018) 412 563 (mobile)

QLD. SOUTH

Michael Wilson (07) 399 3928 (hm)

QLD. NORTH

Frank West (070) 537 334 (hm)



CDAA WEB PAGE

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

LETTERS TO THE EDITOR

June 20, 1996

July 11, 1996

Dear Lisa

Earlier this year an event was held at Engelbrechts' Cave to raise money for Lifeline and to promote the sport of cave diving. A CDAA member from Adelaide with the assistance of several local divers stayed in Engelbrechts' Cave over the January long weekend and promoted the event as a 50 hour cave dive. This committee is fully supportive of this type of event especially if it is assisting a local charity while promoting the sport of cave diving.

However due to many organisational and liability issues we feel that these type of events should be organised through the National Directorate of the CDAA. This will enable the elected representatives of that organisation to exercise a level of control over these events and ensure that if the event is sanctioned to go ahead the landowner is protected from any potential liability claims as well as ensuring the smooth running of the event to both the divers and landowners satisfaction.

While not wishing to stifle the initiative of members of the cave diving community we would advise all landowners that if a project has been approved they should expect an accompanying letter from the National Directorate supporting the proposal with any request from CDAA members to dive outside of normal sanctioned CDAA diving. This way both the divers and landowners will be protected in case of any incident.

A copy of this letter has been sent to all landowners/managers of CDAA certified diving sites.

If you wish to discuss this further please contact either:

Lisa Bernasconi

CDAA National Director. Ph: 0414 330 774

Phil Argy

CDAA South East Representative.

Ph: 087 23 0879

Yours sincerely,

T Collins, CDAA/Landowner Liaison Committee Chairperson

Dear Lisa, Ian and Warrick;

I am delighted to see the CDAA is making moves to establish a presence on the world wide web.

I have been connected for three months. Over that period I have established links to quite a few cave diving "sites". There is a huge amount of valuable and interesting information out there. I know I have only scratched the surface. I have found good information on cave diving related travel, equipment, training, exploration, news events, seminars, history and much more. I guess you know there is at least one Australian site already up and running with the CDAA's site maps on it. Guess it's one of our members. Good on him.

The CDAA web site would make a good focus to pool everyone's best sites so we can all use the best of what is available. But of course that's not all, there are many other ways this can be used to benefit our members.

I know there are other CDAA members out there surfing. Even in my small circle of diving friends there are six of us with Internet access. Must be plenty more. Does anyone know how many?

I have written my own home page and it's now on the web. That should tell you how easy it is to get started. Even for a beginner like me.

HOME PAGE ADDRESSES

<http://www.ozemail.com.au/~smithrd>

<http://www.alphalink.com.au/~smithrd>

I have e-mailed Victor and offered what ever assistance I am capable of providing.

Robert Smith

NATIONAL DIRECTOR'S REPORT

Lisa Bernasconi, National Director

The AGM this year was the most positive I've attended since holding office for the Association, and I thank all the members who took time to attend. In my AGM report I mentioned a serious illness Peter Stace had survived. Peter had advised the Association he would no longer be diving, but asked if he could continue to pay for and receive "Guidelines". At the meeting it was voted that Peter, for all his past work for the Association be made a member for life. I don't know Peter Stace personally, but couldn't be happier with this outcome; since it's initiation, Peter has been putting time and effort into the Association.

Members have been notified of the changes that have taken place since the votes were taken prior to the AGM. Unfortunately these changes in my opinion have altered the workings of the past Directorate to it's detriment. I no longer manage Access and Landowner Liaison, and Warrick no longer handles the finances for the Association. I cannot praise Warrick enough for the way he's managed the job during the past 12 months and the fact of his putting us back into the black is something that not many could have achieved.

BUSINESS DIRECTORS REPORT

This is the last report that I will be making as the CDAA's Business Director.

By now you should have all received and read the Minutes of our last A.G.M. Enclosed with that mail out was a nomination form for the positions of the two new Directorships, that were established after our Constitution changes, and my position as Business Director. I have resigned as Business Director for the following reasons:

(a) The new 5 person Directorate and the division of job responsibility no longer gives me control over the finances of the Association. I could simply nominate for the job as Treasurer but the last thing I wish to do

Warrick has since resigned and his hard work and commitment will be greatly missed.

With regard to the forthcoming year I will happily handover Access and Landowner Liaison to who ever takes the job, but cannot guarantee they will follow through with areas that were suggested at the AGM. All directors tend to give matters different priorities.

On another level, one name has been given to me several times as a possible nominee for the new Access Director's position; Peter Horne. For the last 12 months Warrick, Ian and in particular myself, have had to reassure landowners that letters they have received from Peter are inaccurate. Letters informing Landowners that the future of the Association is in jeopardy as a result of my efforts, and that Peter no longer volunteers work for the Association mainly because of his perception of our inability to work together. The point I'm making is that in the opinion of the 1995/96 Directorate, if Peter Horne nominates for and is elected to this position, the Association will find itself with a totally unworkable situation.

LISA BERNASCONI.

is become a bookkeeper.

(b) The Business Director now is a minute taker and looks after paperwork and Certifications. The Certification section is capably looked after by Linda and I feel producing forms and filing paper hardly creates a challenge.

(c) The direction that the CDAA is currently heading in concerns me.

(d) A complete overhaul is required to bring the CDAA into line with other training agencies, or we will be swallowed up and lose our standing in the certification community.

(e) Standards desperately need overhauling and modification if we are to survive in this legalistic world. Training procedures, quality control and educationally valid programs need to be developed to protect the Association, its members and the diving community.

(f) The lack of forward planning has resulted in a disjointed and confused effort by the Directors and their office bearers.

(g) The time wasted, replying to criticism, stirred up mainly by one individual, which has been suffered by this and previous Directorates, has not been addressed through negotiation or stronger means.

(h) Political point scoring "them against us" is counter productive and I will not enter into it. The achievements and results my office obtained, which were outlined at the A.G.M. have now established a base for the start of a new growth era. I would like to think that I still have something to offer the Association, and although I may not be in a Directorate position at this time I believe that I have proved that I am capable of controlling and organising the affairs of the Association. The position of National Director, is the only office which will enable me to continue the work that I have started but until that office is vacant, I will support the elected Directors.

GUIDELINES.

Issue #57 cost...\$3,749.86 including mailing.
advertising...\$1,550.00

Total...\$2199.00 cost to the Association for
1200 copies and 40 pages.

Issue #58 cost...\$3,695.00 including mailing.
advertising...\$2,100.00

Total...\$1,595.00 cost to the Association for
1200 copies and 44 pages.

For the first time "Guidelines" issue 57 and 58 was sent to all Advertisers, Members and most Dive Equipment Suppliers and Retailers throughout Australia, increasing our potential advertising market and exposure nationally.

CERTIFICATION AND MEMBERSHIP.

The Association closed the financial year with 969 members. 33 Cavern and Sinkhole courses were held resulting in 113 new members for the year. These consisted of 99 males and 14

females. Cave courses and Penetration courses also accounted for an increase in income. The CDAA as of the 19-7-96 has 468 members of which 392 are males and 76 are females.

INSTRUCTOR MATERIALS.

231 Student Packages with Temporary cards were sent to Instructors.

ACKNOWLEDGMENTS.

Thanks must go to the following for their work within my Directorate. Wayne Wilson as Treasurer, Linda Claridge as the Certification and Membership Officer and the staff at my business Ocean Divers who have acted as secretaries for me, Jane Bowman and Tony Cooper. Lisa and Ian, the other two Directors, also deserve thanks for guiding me through this difficult first year. Kevin Burrows has again acted as Chairperson and again has kept professional control over our Annual General meeting.

Vic Kostiuik who stepped in at the last minute to be the Editor of "Guidelines" also deserves recognition. Finally thanks should go to Chris Edwards for writing and recording this years minutes. Peter Prentice was either foolhardy or brave by becoming the Returning Officer and Chris Edwards was fast to follow in his footsteps by doing the same job in our latest election.

RESULTS.

(a) The Winner of our "EARLY PAYERS" prize, of a Nite Rider torch which was donated by Australian Scuba Trading (Murray Scott and Graeme Sayce) went to Jeffrey Cottrill.

(b) The prize for "Pick The Dive Sites" organised by Peter Rogers, who put on a great slide show for us during the coffee break at the meeting was won by Tim Payne.

The prize was donated by Australian Scuba Trading and Ocean Divers, a Trident waterproof bag, "Sink the Stink" and a Trident cap.

(c) The raffle held during the meeting for a Nite Rider torch, again donated by Australian Scuba Trading (\$260.00 worth) was won by Tim Collins.

WARRICK MCDONALD.

INDEPENDENT AUDITOR'S REPORT

TO THE MEMBERS OF CAVE DIVERS
ASSOCIATION OF AUSTRALIA
INCORPORATED

SCOPE

I have audited the Financial Statements of the Cave Divers Association of Australia Incorporated consisting of the Profit and the Loss Account and the Balance Sheet for the year ended 30 June 1996 in order to express an opinion on them to the members of the Association. The audit has been conducted to provide reasonable assurance as to whether the accounts are free of material misstatement and the procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the accounts, and evaluation of accounting policies and accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the financial statements are presented fairly so as to present

a view of the Association which is consistent with my understanding of its financial position and the results of its operations.

Stock and Equipment have not been physically verified as it is the usual practice to take these items as correct information provided by the Association.

The audit opinion expressed in this report has been formed on the above basis.

AUDIT OPINION

In my opinion the financial statements of the Association are properly drawn up so as to give a true and fair view of the state of affairs of the Association as at 30 June 1996 and of the results of the Association for the year ended on that date.

K.N. Burrowes

Fellow Certified Practising Accountant
26 July 1996.

TRADING ACCOUNT FOR THE YEAR ENDED 30/6/96

	1995	
	\$	\$
<u>TRADING ACCOUNT</u>		
Sales of Merchandise	6291.65	9402
<u>LESS COST OF SALES</u>		
Opening Stock	7395.65	5670
Purchases for Resale	4295.55	9931
	<u>11691.20</u>	<u>15601</u>
Closing Stock	6189	7396
	<u>5501.70</u>	<u>8205</u>
TOTAL TRADING PROFIT	<u>789.95</u>	<u>1197</u>

BALANCE SHEET AS AT 30TH JUNE 1996

	1995	
	\$	\$
<u>CURRENT ASSETS</u>		
<u>Cash</u>		
Cash in Hand	-	2934
Cash at Bank	<u>13514.54</u>	<u>573</u>
	13514.54	3507
<u>Receivables</u>		
Trade Debtors - Advertising	850.00	1290
Stock on Hand	<u>6189.50</u>	<u>7396</u>
	7039.50	8686
<u>Investments</u>		
Term Deposit - ANZ Bank	8415.52	-
<u>Inventories</u>		
Pre-Paid 1996 A.G.M. Expenses	<u>381.25</u>	<u>-</u>
TOTAL CURRENT ASSETS	<u>29350.81</u>	<u>12193</u>
<u>NON-CURRENT ASSETS</u>		
<u>Property, Plant and Equipment</u>		
Site Improvements - at D.V.	5119.70	3965
Less Prov'n for Depreciation	<u>1752.00</u>	<u>818</u>
	3367.70	3147
Office Equipment - at D.V.	8940.20	8793
Less Prov'n for Depreciation	<u>3966.00</u>	<u>1935</u>
	<u>4974.20</u>	<u>6858</u>
TOTAL NON-CURRENT ASSETS	<u>8341.90</u>	<u>10005</u>
TOTAL ASSETS	<u>37692.71</u>	<u>22198</u>
<u>CURRENT LIABILITIES</u>		
<u>Advance Income</u>		
Creditors Unresolved Claim	569.50	4217
Membership Paid In Advance	14370.00	-
Advertising Advance Payment	<u>100.00</u>	<u>-</u>
TOTAL CURRENT LIABILITIES	<u>15039.50</u>	<u>4217</u>
TOTAL LIABILITIES	<u>15039.50</u>	<u>4217</u>
NET ASSETS	<u>22653.21</u>	<u>17981</u>
<u>SHAREHOLDERS' EQUITY</u>		
Accumulated Profit	<u>22653.21</u>	<u>17980</u>

DEPRECIATION SCHEDULE **FOR THE YEAR ENDED 30TH JUNE 1996**

ITEM	Book Value 30-6-95	Additions	Deprec 30-6-96	Book Value 30-6-96
Computer (1987)	720	20% P.C.240		480
Printer (1987)	240		80	160
4 Drawer Filing Cabinet (1992)	168		56	112
4 Drawer Filing Cabinet (1992)	120		40	80
Computer/Printer/Stand (1992)	2447		816	1631
Desk 8 Drawer (Aug 93)	154		50	104
Safe (Nov 93)	80		24	56
Answering Machine (Dec 93)	87		25	62
Facsimile Machine (Feb 94)	251		70	181
Additions				
Answering Machine (Aug 94)	73		18	65
Computer 2-9-94	1715		420	1295
Canon Printer 2-9-94	410		100	310
Filing Cabinet 12-1-95	318		70	238
Filing Cabinet & Drawers 24-10-94	75		17	58
Cellular Phone (June 96)		61	1	60
Boston Guillotine (April 96)		86	4	82
	<u>6858</u>	<u>147</u>	<u>2031</u>	<u>4974</u>
Diving Frame (1994)	1936		516	1420
Fencing (1994)	1209		302	907
Bakers Cave (1996)		891	(1/2yr) 89	802
Cave Dummy Engelbrechts West (Dec 95)		265	(1/2yr) 27	238
	<u>3145</u>	<u>1156</u>	<u>934</u>	<u>3367</u>

PROFIT & LOSS ACCOUNT **FOR THE YEAR ENDED 30TH June. 1996**

	\$	\$	1995 \$
<u>RECEIPTS</u>			
Gross Profit Trading	789.95		1197
Membership Fees	48784.00		37174
Members Manuals	-		563
Advertising	1900.00		6486
Instruction Fees	6070.00		9144
Kilsbys A/c - Excess Receipts	-		60
Sundry Income	69.85		85
Instructors Renewal	1665.00		315
Interest Received	<u>587.53</u>		<u>127</u>
TOTAL RECEIPTS		59866.33	55151
<u>EXPENSES</u>			
Audit Fees	750.00		975
Advertising & Promotion	-		1520
Bad Debts W/Off - Advertising	790.00		-
Bank Charges	114.62		258
Bank Card Charges	-		29
Depreciation	2965.00		2753
Donations	-		55
Freight & Cartage	-		145
General Expenses	-		356
Gifts	-		250
Guidelines	6681.12		13851
Insurance	9311.12		9420
Interest - Bank	-		1
Legal Costs	787		8192
Meeting Expenses	1114.31		7478
A.G.M. Expenses	1207.75		2464
Postage	2015.54		2268
Printing & Stationary	2293.24		1996
Research & Development	-		92
Site Expenses	483.63		747
Subscriptions	200.00		45
Telephone	2926.26		9050
Training Courses	-		4033
TOTAL EXPENSES		<u>31639.59</u>	<u>65978</u>
EXCESS RECEIPTS OVER EXPENSES		28226.74	(10827)
Balance carried forward previous year		17980.47	28806
<u>1995 ADJUSTMENTS</u>			
Introduce Advance Membership to Financial Reporting		(23554.00)	-
ACCUMULATED EXCESS		<u>22653.21</u>	<u>17979</u>
ACCUMULATED EXCESS		<u>22653.21</u>	<u>17979</u>

STANDARDS DIRECTORS REPORT 1996

(As read to the AGM)

To all members,

I would like to apologise to you all for being unable to present this report in person, due to a car smash this morning on the way across from Melbourne in thick fog. I'm uninjured, but pretty shaken up (the car is much worse off).

I will summarise my report in brief for the sake of the person who reads this report out. Any questions that cannot be answered tonight, I will reply in writing in the next Guidelines, or ring the questioner personally over the next week if requested to do so.

1. Election result

I would like to thank all these who voted me back into the position of Standards Director again. I appreciate your support, and also wish to say that those who voted for John will not be ignored. To those people, please take advantage of Guidelines offer to "pick my brains" about issues that concern you, which I can answer publicly as part of ongoing debate. I believe all members were happy not to have a 3-ring circus for an election, but be allowed to quietly make their decisions. That is why I chose not to run a campaign this year, and to accept whatever decision was made.

2. Finances and Instructor meetings

I appreciate the recent reference in Guidelines by the Business Director that my directorate had been "extremely frugal" with expenditure. That has been my aim for the last 2 years, although I will be putting my hand out this year to finalise some outstanding projects. I held meetings in Melbourne and Adelaide with Instructors there during the year, and met up with most of the WA and NSW Instructors in person at times when they visited Mt Gambier to dive. I will continue this pattern for the next 6 months or so as an efficient means of contact which is still very economical for the CDAA. We will be looking for expenditure on re-worked exam papers and materials this year.

3. Instructor Records

As announced by me at last years AGM, I have set up an Instructor Records team who maintains status files, applications and insurance records on all instructors. These are separate from the CDAA Records Officer, and also held independent of me. I would like to publicly thank Sue and Geoff Riddle for taking on this task as maintaining up to date details on instructors is necessary for insurance and liability reasons. As different insurances fall throughout the year, Sue and Geoff remind instructors to get current status or be listed inactive. They then liaise with CDAA records and the Business Director so no-one slips through the net and runs courses when out of active status. This system will continue independent of the Standards Director. Over the last year there have been several Sinkhole Instructor appointments (Peter Grills, Andrew Robinson, Andrew Poole) one suspension (Ian Gothard) and one retirement (Chris Brown).

4. Directorate Meetings

The Standards Director's job is not just Instruction and Training matters. I work very closely with the National and Business Directors on a wide range of matters, and am consulted on issues beyond the standards area, as a role of a director is management oriented. I want to say that the last 12 months has been solid work, and particularly so for Lisa and Warrick. I have been glad to give input on the many responsibilities they have shouldered. When the CDAA re-designed itself in the late 1980's, I was in a similar official position where we replaced the old 9 person committee structure with the 3 person Directorate. While we knew this meant a big work load, we also knew that it would enable the CDAA management to make decisions and implement main issues and tasks. It took a few years to settle in, but was a thousand percent better than a far-flung committee who could never meet more than once or twice, let alone agree! I am particularly impressed with the way it has run in recent years (and regret the decision to

expand it), as the full CDAA membership with only 2 dissenters voted for 3 directors, to finally solve the chronic problem of time wasting, expense and indecision. As 3 directors, we have been able to develop strong working relationships with each other as we meet about once a month, and with the landowner committee, who have come to know us well and understand the CDAA's angle on cave diving through extensive personal contact. This is a priceless asset for our organisation. Thank you Lisa and Warrick for a very productive year.

5. Technical issues

(a) Nitrox

Last week the final in principle approval for Nitrox use was granted by the landowner committee. The agreement currently limits us to 32 and 36% Nitrox only with fixed depth (secured) deco cylinders and no pure oxygen allowed at all. The agreement is being mailed to the landowners this weekend and **will not** be commenced until they have been notified. One condition is that CDAA cards be endorsed with a Nitrox rating - however we may be able to negotiate the presentation of your Nitrox and CDAA cards together, however, that may not be allowed as several landowners requested that they don't want to interpret other cards from other systems.....only CDAA cards. The Nitrox agreement will be in the next CDAA mail out/Guidelines.

(b) Manifolds

It's great to see the current lively debate about manifolds going on, in particular the articles in Guidelines by Des Walters and Greg Bulling. The fundamental principle from the CDAA's point of view is that air supplies must be operated SEPARATELY and all our training is oriented towards that. Isolation manifolds will probably be accepted but they are not so yet. One problem is that the user is going to have to demonstrate they can use them in isolation mode and leave them that way for the dive. Otherwise, other divers in the team on the dive may be at a safety risk, or diving under a misapprehension about their buddy's setup. A decision on this will be made soon.

(c) Penetration Courses

The Internet over the last year, and also feedback from all Penetration students from Perth to Sydney have been strongly complimentary about our Penetration Diver Training. This is particularly pleasing for the CDAA and has given us world wide recognition in the field. After a wobbly start to Penetration Training 5 to 6 years ago, this is a major CDAA achievement. I fully support the programme in its current administration and format and congratulate Glen Harrison and Greg Bulling in particular for operating such high quality courses. The CDAA is now judged by our performance at this level, and as Standards director, I am committed to supporting it. This particularly applies as other organisations are interested in introducing alternative training, eg TDI and IANTD cave diving/overhead diving qualifications. Of particular interest is the recognition given by the Americans to components of "stress testing" which we include, unknown in any other programs.

FINALLY

By a quirk of the election process and the new constitutions voting, I find I am the only Director at present who is occupying a clearly defined role for the next 12 months (actually 15 months, to September, 1997) I will use this time or formalise the outstanding projects of:

- (1) Updating course material
- (2) Refining and updating course formats
- (3) Finalising new Instructor Appointment procedures (draft is now complete, based around modifications to the old procedures and in similar format), and
- (4) Delegating all these tasks to the Instructors who have already indicated interest.

I would like to apologise again for my absence and invite questions to be passed on.

IAN LEWIS

STANDARDS' DIRECTOR

FROM THE RETURNING OFFICER

In the matter of the recent call for nominations for Directorate positions, the following nominations were received.

For Treasurer - Andrew Cox

For Site Director - Peter Horne, Phil Argy & Gary Barclay

For Business Director - Chris Brown & Craig Ashwin

Peter, Phil & Gary had lengthy discussions prior to the close of nominations on Monday 9th as did Chris & Craig. This co-operation resulted in Phil and Peter withdrawing their nominations in favour of Gary, and Craig likewise withdrawing in favour of Chris. It is worth noting that this action not only expedites the installation of the new Directors but also saves the Association some \$700.00 in postage.

I therefore have pleasure in declaring Andrew Cox, Gary Barclay & Chris Brown elected to the positions of Treasurer, Site Director & Business Director respectively and on behalf of the membership wish them all well.

Chris Edwards - Returning Officer

Andrew Cox H 058 26 5438

014 432 725

Gary Barclay 055 658 793

Chris Brown 014 957 842

Editor's Request

In order to streamline production of Guidelines, members are requested when forwarding material for inclusion, to forward disk with material saved as "text only" including a hard copy.

NOTICE RE MEMBERSHIP

The following is a list by membership number regarding membership which is not current due to either no indemnity signed or no levy paid.

No Indemnity Signed

941	1480	2345	2936
1211	1783	2649	2937
1235	1876	2812	

No Levy Paid

106	1286	1824	2478
140	1287	1958	2488
142	1330	1968	2491
243	1347	2025	2495
260	1382	2065	2499
431	1430	2077	2507
456	1434	2123	2519
568	1460	2128	2535
592	1466	2139	2537
670	1495	2201	2542
682	1501	2220	2558
687	1544	2224	2559
717	1560	2226	2561
718	1602	2243	2566
722	1604	2272	2573
752	1612	2294	2584
758	1628	2314	2614
819	1630	2378	2627
923	1640	2381	2650
942	1663	2382	2733
946	1683	2412	2745
1038	1684	2415	2764
1047	1702	2418	2791
1078	1717	2422	2793
1131	1759	2443	2795
1179	1762	2449	2796
1185	1785	2461	2799
1196	1789	2464	2805
1228	1795	2465	2845
1247	1812	2467	
1268	1823	2470	

Please contact the Directorate to arrange payment or to sign the indemnity.

CAVE DIVING TRIP REPORT WELLINGTON CAVE (McCavity) May 1996 by Nick Jones

Introduction

On the weekend of 11/12 May 1996, six divers from NSW and the ACT made a diving trip to Wellington Caves, which is about 240 km NW of Sydney. The dive site was *McCavity*, a water-filled extension of a dry cave known as *Limekiln*.

McCavity was originally a dry cave which was subsequently flooded, and as a result it has lots of stalactites and stalagmites and other decorations.

Because of the narrow restriction at the entry to *McCavity* and the length of the underwater passages, the dive is classified by the CDAA as penetration level.

The dive trip was led by Greg Ryan from the Sydney University Speleological Society (SUSS), and Neil and Lyn Vincent (CDAA). The first-time divers, all from Canberra were Tony Dromgool, Tim Foster and Nick Jones, and the divers stayed at the Wellington Caves Caravan Park.

Carrying out the Dive

All the equipment was initially carried from the caravan park to the cave entrance.

Access to the water was through the dry cave section which was dark, tight and tricky in a couple of places, and with two locations where equipment had to be lowered vertically. Once inside, in a chamber known as *Central Station*, the equipment could be stored and then ferried down a narrow passage (called the *Z constriction*) into the final small chamber known as the *Telephone Booth*. In the *Telephone Booth*, one diver could assemble a scuba unit and store it in an alcove.

Once three divers had stored their equipment, the divers entered the water, feet first, through a very narrow opening, wearing wetsuit, weightbelt, fins, mask and helmet. Their equipment was then passed down to them.

Because the water level was low, there was a lake with plenty of headroom and enough room for several divers to congregate and talk and (more importantly) talk to the attendant in the *Telephone Booth* who passed gear (scuba units, cameras, reels, torches) down through the narrow opening to the divers. Once the divers were fully kitted, they carried out the dive and then returned to the lake to have their equipment hauled up back into the *Telephone Booth*. Then came the really hard

part - worming their way up and out of the narrow tunnel with the assistance of the attendant.

In this way Tony, Tim and Greg did one dive on Saturday afternoon (the morning was taken up with getting all the gear in place), and then on Sunday Lyn, Neil and Nick did a dive, and Tony, Tim and Greg did a second dive. Once the diving was over, all the equipment was hauled out of the cave. Because of the size of the entry hole leading to the water, side-mounted cylinders are ideal. If using back-mounted twins small cylinders **must** be used; twin 88 cu ft cylinders are too big, but twin 63 cu ft aluminium cylinders will just fit through.

In the Water

In the Water, the main passages are well-marked with a permanent thin, orange guideline, with line arrows at intervals. The water temperature at 18-19 degrees C was warm compared to Mt Gambier, but the water was cloudy, with only 10-15m of visibility. There is an emergency exit via a lake and rubble slope (known as *Bondi Beach*) which would allow a diver to exit the cave (leaving their scuba equipment behind) if necessary.

McCavity contains many fragile decorations. A prominent decoration is the *Dragons Teeth* - a matched set of stalactites and stalagmites with a small alcove behind them which resembles a mouth with long, pointed teeth. All the decorations are fragile, requiring good buoyancy control and a sharp eye, but the main passageways are very roomy, with depths of eight meters or so, and a maximum depth of about ten metres.

Arranging for Dives in McCavity

There is a document called *Procedures for Diving in McCavity* by Ron Allum, Greg Ryan, Keir Vaughan-Taylor, Neil Vincent, and it should be read and well and truly digested by anyone planning a trip to *McCavity*.

Access to the dive site may be arranged by contacting Greg Ryan or Neil Vincent, unless or until other procedures are put in place.

Acknowledgments

Thanks go to Greg Ryan and Neil and Lyn Vincent for arranging access, providing equipment and guiding us on the dives. Thanks also to Tony and Tim for arranging accommodation and transport.

NA Jones CDAA 1436

Cave Diving in NSW

Submitted by Greg Ryan

During the early 1950s, as adventurous sport divers were beginning to explore the sinkholes of Mount Gambier in South Australia, speleologists from the Sydney University Speleological Society (SUSS) were underground, setting their sights underwater.

Between 1952 and 1958, cavers from SUSS, and later Sydney Speleological Society (SSS), made pioneering dives at Jenolan, Wombeyan and Wellington Caves, using a combination of home made and military surplus gear. The earliest dives were completed using hand pumped air, but the cavers soon progressed to SCUBA. Members of the Underwater Research Group of Sydney were enlisted on some of these expeditions. Cave diving in NSW during the 1960s and 1970s was sporadic and not very well documented, with the exception of work by SSS at Bungonia and Wombeyan Caves.

In 1979 a group of divers from the Cave Divers Association of Australia (CDA), based in Mount Gambier, visited Jenolan, retracing and expanding on the exploratory work of twenty years earlier. Throughout the early 1980s occasional exploratory dives were conducted by a few individuals at Bendethra, Bungonia, Jenolan, Wee Jasper, Wyanbene and Yarrangobilly. In 1986 a small group began regular diving of Jenolan's Imperial Streamway as part of a project to connect the Imperial and Spider cave systems. This project and its ensuing success led to a resurgence of interest in diving among some NSW cavers, and the following year the group spread its attention to include Spider Cave and the Baralong at Jenolan, and Wellington Caves. By the end of the 1980s, this group, with a few cavers from SSS, whose main area of exploration was Wombeyan, once again formed a small core of active NSW cave divers.

Cave diving in NSW, since its inception, has been characterised by its speleological heritage. The diving has always been either exploratory, as in the early work at Jenolan, or as part of a project, such as the Imperial/Spider connection, where diving provided the only access to the Imperial side of the rockpile that eventually yielded to exploration. This tradition continues today, as diving is seen as part of the general speleological effort in the state, and is conducted primarily through clubs affiliated with the NSW Speleological Council (NSWSC). Access to most sites is on the basis of a permit issued to a club. The recent two year project SUSS divers conducted at Wellington Caves (photography, mapping, hydrology, fauna study) typifies the way NSW cave diving is organised in this manner.

Just as the organisation of the diving through caving clubs distinguishes cave diving in NSW from that of Mount, so too does the nature of the karst. Cave diving in NSW is best described as sump diving, diving through submerged cave passages in otherwise flooded caves. As such, it usually combines both wet and dry caving techniques. All dives begin with the transportation of gear through cave passage to the sumps, and only in a few tourist caves do the cavers have the luxury of stairs, lighting and concrete paths leading to the water. In the case of a multiple sump trip, like the Imperial Streamway at Jenolan, there may also be a considerable amount of dry passage to negotiate between the sumps. Access to some of the more remote sumps, in Mammoth and Spider Caves at Jenolan for example, is weather dependent, as some of the more challenging dry routes can become impassable when flooded. Passage size varies from site to site, as does visibility and flow. Water temperatures are

typically around 12 to 14°C, although Wellington offers a more pleasant 19°C all year round.

Wellington offers an additional diving incentive over most of the sites in NSW in other ways. Whereas sumps are usually dived as a means of exploration or to gain access to otherwise inaccessible areas of cave, McCavity at Wellington (a water filled extension of Limekiln Cave) offers a vista of spectacular, submerged speleothems. Some surveying work remains to be completed at Wellington, in McCavity, Cathedral and Anticline Caves. Negotiations with the management of Wellington Caves to trial a twelve month period of guided visitation by other cave divers to complete the remaining project work is currently underway, and should be in place in 1996. With the main project work nearing completion at Wellington, SUSS cave divers are looking to other areas once again. Jenolan will probably become the main focus of this group in 1996.

Extensive work has been done over the last few years in the search for a connection between Spider and Mammoth Caves. A remote sump in Spider, surveyed to be near the area in which a connection is expected to exist, now awaits clearing of some flooded squeezes and an enthusiastic party of divers and sherpas.

Another sump, known as River Lethe, which is accessible from the tourist caves in the Southern limestone, is also earmarked for a survey and exploration project, following on from some promising dives conducted there in the late 1980s.

In addition to these, dives conducted in the downstream section of the Imperial Streamway in 1995 showed the potential of this river passage to be finally

connected to the resurgence in Blue Lake. Further north up McEwans Valley, Mammoth Cave still holds the potential for further downstream exploration.

Away from Jenolan, Tuglow and Yarrangobilly Caves are thought to be worthy of further investigation, and divers are revisiting the flooded caves in Burrinjuck Dam.

The last few years have seen a consolidation of cave diving in NSW. The number of active cave divers has doubled, but still remains small. Reciprocal access arrangements for cave divers affiliated with the NSWSC and members of the CDA have paved the way for interstate divers to become involved in NSW projects, and has worked well at Wellington. Relationships with the various landowners and managers have also been developing well. There are many karst areas in NSW with cave diving potential. The difficulty has always been finding out what work, if any, has been done in the past, and finding the time to gamble on a trip which may or may not result in a dive. As the number of active NSW cave divers grows, it is likely that a critical mass will soon be reached which will again result in people branching out to new regions and revisiting areas which have only been cursorily examined. Following the CDA dives at Jenolan in 1979, Lewis and Stace concluded their chapter on New South Wales cave diving, in "Cave Diving in Australia"*¹, with the statement "future prospects certainly look difficult". In 1996, the prospects certainly look promising.

*Ian Lewis and Peter Stace, Cave Diving in Australia, 2nd edition, 1982, published by Lewis and Stace, Adelaide, South Australia.

CDA A NOTICES

SOUTH AUSTRALIAN REPS POSITION

After this years AGM I was approached by a S.A. member and asked to call for volunteers for this position. It seems that the S.E. Rep is seen as separate from Adelaide members in his job.

So could any S.A. member interested in the job, please contact me in writing.

Lisa Bernasconi
PO Box 1254
Geelong 3213

INCIDENT REPORT

Hearing held 27th July - re membership suspension.

Member was suspended for 6 months. Site access irresponsibility & poor demeanour to Lady Nelson Staff.

Members who have not renewed are booking dives and the directorate have had to make numerous phone calls and send fax's to organise their trips for them. Could members please renew 30th June to avoid all this extra work.

CDA A INSTRUCTORS

Any Instructor wishing material contact - Nicholas Jones - 015 851 313

STANDARDS & TRAINING DIRECTOR: Ian Lewis
PO Box 359 Queanbeyan, NSW 2620
Mobile & Messages 015 284 051
(w) 06 203 2829 (h) 06 299 7064

INSTRUCTOR	CN	S	C	STATE	PHONE	INSTRUCTOR	CN	S	C	STATE	PHONE
NSW & ACT						VICTORIA					
Nick Jones	.	.	.	ACT	015 851 313 m	Stephen Arnel	.	.	.	VIC	(055) 26 5230 h
Ron Allum	.	.	.	NSW	(02) 9552 6348 h	Bill Bernhardt	.	.	.	VIC	(03) 9725 9716 h
Terry Cummins	.	.	.	NSW	(02) 9417 2800 w	Jane Bowman	.	.	.	VIC	(03) 9579 2600 w
Peter Grills	.	.	.	NSW	(049) 48 7848 h	Stan Bugg	.	.	.	VIC	(03) 9379 8791 h
Ian Lewis	.	.	.	ACT	See top of page	Brian Cornell	.	.	.	VIC	(059) 85 2514 h
Gary Norgard	.	.	.	NSW	(049) 68 4588 h	John Dalla - Zuanna	.	.	.	VIC	015 887 060 m
David Ogilvie	.	.	.	NSW	(02) 9977 4355 w	Chris Edwards	.	.	.	VIC	(03) 9579 4352 h
Andrew Robertson	.	.	.	NSW	018 412 563 m	Barry Heard	.	.	.	VIC	(056) 27 6474 h 019 401 469 m
Des Walters	.	.	.	NSW	(060) 411 405 w	John Mc Cormick Specialist Non-Teaching	.	.	.	VIC	(03) 9555 5777 w
Andrew Wight	.	.	.	NSW	(02) 9428 2176	Warrick McDonald	.	.	.	VIC	(03) 9579 2600 w
Liz Wight	.	.	.	NSW	(02) 9428 2176	Tony Richardson	.	.	.	VIC	
SOUTH AUSTRALIA						Bob Wealthy	.	.	.	VIC	(056) 858 338 h
Greg Bulling	.	.	.	SA	014 477 430 m (08) 8265 4978 h	Frank Ziegler	.	.	.	VIC	(055)23 6392 w
Glen Harrison	.	.	.	SA	(08) 8386 3237 h	WEST AUSTRALIA					
Max Marriot	.	.	.	SA	(08) 47 3360 h	Marilyn Boydell	.	.	.	WA	(09) 349 5646 h
Richard Megaw	.	.	.	SA	(08) 8344 1733 h	Simon Jones	.	.	.	WA	(09) 344 4343 h (09) 344 1562 w
Richard McDonald	.	.	.	SA	(08) 8295 4140 h/w	Hugh Morrison	.	.	.	WA	(09) 409 99807 h
QUEENSLAND						Andrew Poole	.	.	.	WA	018 928 028 m
Frank West	.	.	.	QLD	(070) 53 3575	Steve Sturgeon	.	.	.	WA	(09) 527 9211 w
Alan Jolliffe	.	.	.	S E Asia Rep	61 773 3544 h	John Vanderleest	.	.	.	WA	(09) 426 8623 w (0411) 184 211 m
Gary Bush	.	.	.	NZ Rep	(018) 318 837 m						

SHAFT INFORMATION

The last issue of Guidelines, there was an information section on the Shaft. I explained the booking process at that time. I should have also mentioned the great amount of help the association had received from the Shaft guides in bringing about the new access arrangements the association now has. Their help has been invaluable for all members.

As of this issue the booking arrangements have once again altered. I apologise for all the changes, but we are only trying to come up with the most workable system for everyone involved.

Information will be printed in the access pages, all members are now to send a stamped self addressed envelope to Linda Claridge, PO Box 290, North Adelaide. Listing divers, and the weekend requested. Linda will contact the successful groups. All divers who have written to me and not yet dived the Shaft, I have forwarded your names to Linda.

TIMETABLE FOR "THE SHAFT" GUIDES

Saturday	Aug.31st.	Chris Brown
Sunday	Sept. 1st.	Phil Prust
Saturday	Sept. 14th.	John McCormick
Sunday	Sept. 15th.	John McCormick
Saturday	Nov.23rd.	Peter Rodgers
Sunday	Nov. 24th.	Peter Rodgers
Saturday	Dec. 7th.	Chris Brown
Sunday	Dec. 8th.	Chris Brown
Saturday	Jan. 25th.	Paul Arbon
Sunday	Jan. 26th.	Paul Arbon
Sunday	Feb. 4th.	Phil Prust
Saturday	Feb. 22nd.	Peter Rodgers
		John McCormick
Sunday	Feb.23rd.	Peter Rodgers
		John McCormick
Saturday	March 8th.	Peter Horne
Sunday	March 9th.	Peter Horne

For access write to P.O. Box 290 North Adelaide 5006 Attn: L. Claridge

CDAA SITE ACCESS

Mixed gas Diving BANNED from all sites (Nitrox approval to be finalised but not yet completed May 1996).

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 (087) 35 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: (087) 38 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	CN	DENR	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: Cavern and Sinkhole. The Instructor is to notify DENR of the date the sites are needed and to forward signed indemnities from each student and their temporary card number. Cave and Penetration: The Instructor is to notify DENR of the date the sites are needed and is required to forward signed indemnities from each student and their membership number.																																																												
2 Sisters	CN	P.O. Box 1046																																																													
Fossil	C	Mt Gambier 5290 Ph: (087) 35 1177																																																													
Ela Elap One Tree	S S	Mr. Peter Norman Private Bag 67, Mt Gambier 5290	By phone or drop in before diving. Accommodation also available. Ph: (087) 38 5287																																																												
Swim Through	C	Valerie Earl PO Allendale 5291	Currently CLOSED pending new access arrangements.																																																												
Piccaninnie Ponds	S	DENR P.O. Box 1046, Mt Gambier 5290	Permit holders by phone. Be aware of delicate vegetation. Indemnity form to be completed. Ph: (087) 35 1177 Faxed copies of cards no longer accepted when booking.																																																												
Hells Hole	S	Primary Industries	Contact Primary Industries S.A. (Forestry) by mail or phone to arrange permit. Collect permit from Regional Office, Jubilee Hwy., Mount Gambier. No diving on total fire ban days. Permits will ONLY be issued Mon-Fri between 8.30am-4.30p.m. Ph: (087) 24 2887.																																																												
Pines	C	S.A. (Forestry)																																																													
Mud Hole	C	PO Box 162 Mt Gambier 5290																																																													
Kilsby's	S	Landowner leased to S.A. Police	Restricted access conditions apply - refer Guidelines Issue 54. Twin tanks, maximum of 40 metres depth. Write to: P.O. Box 77, Mount Gambier, 5290, six weeks prior. 1996 weekends - 8 & 9 June, 27 & 28 July, 5 & 6 October, 7 & 8 December, 1997 - 25 & 26 January, 29 & 30 March, 26 & 27 April, 7 & 8 June. No animals permitted.																																																												
Shaft	S	Will be opening two weekends a month L. Claridge P.O. Box 290 North Adelaide 5006	TIMETABLE FOR "THE SHAFT" GUIDES <table><tr><td>Saturday</td><td>Aug.31st.</td><td>Chris Brown</td><td></td></tr><tr><td>Sunday</td><td>Sept. 1st.</td><td>Phil Prust</td><td></td></tr><tr><td>Saturday</td><td>Sept. 14th.</td><td>John McCormick</td><td></td></tr><tr><td>Sunday</td><td>Sept. 15th.</td><td>John McCormick</td><td></td></tr><tr><td>Saturday</td><td>Nov.23rd.</td><td>Peter Rodgers</td><td></td></tr><tr><td>Sunday</td><td>Nov. 24th.</td><td>Peter Rodgers</td><td></td></tr><tr><td>Saturday</td><td>Dec. 7th.</td><td>Chris Brown</td><td></td></tr><tr><td>Sunday</td><td>Dec. 8th.</td><td>Chris Brown</td><td></td></tr><tr><td>Saturday</td><td>Jan. 25th.</td><td>Paul Arbon</td><td></td></tr><tr><td>Sunday</td><td>Jan. 26th.</td><td>Paul Arbon</td><td></td></tr><tr><td>Sunday</td><td>Feb. 4th.</td><td>Phil Prust</td><td></td></tr><tr><td>Saturday</td><td>Feb. 22nd.</td><td>Peter Rodgers</td><td>John McCormick</td></tr><tr><td>Sunday</td><td>Feb.23rd.</td><td>Peter Rodgers</td><td>John McCormick</td></tr><tr><td>Saturday</td><td>March 8th.</td><td>Peter Horne</td><td></td></tr><tr><td>Sunday</td><td>March 9th.</td><td>Peter Horne</td><td></td></tr></table>	Saturday	Aug.31st.	Chris Brown		Sunday	Sept. 1st.	Phil Prust		Saturday	Sept. 14th.	John McCormick		Sunday	Sept. 15th.	John McCormick		Saturday	Nov.23rd.	Peter Rodgers		Sunday	Nov. 24th.	Peter Rodgers		Saturday	Dec. 7th.	Chris Brown		Sunday	Dec. 8th.	Chris Brown		Saturday	Jan. 25th.	Paul Arbon		Sunday	Jan. 26th.	Paul Arbon		Sunday	Feb. 4th.	Phil Prust		Saturday	Feb. 22nd.	Peter Rodgers	John McCormick	Sunday	Feb.23rd.	Peter Rodgers	John McCormick	Saturday	March 8th.	Peter Horne		Sunday	March 9th.	Peter Horne	
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Ten Eighty	S	Mr. Colin Traeger	Contact CDAA Records Officer for diving deed THEN mail Booking Form to Colin Traeger 2-6 weeks prior, stating names/qual. of all divers, and time slot Please include stamped self addressed envelope. Closed October to November for shearing.																																																												
Bullock Hole	S	PO Box 12,																																																													
Black Hole	S	Mt Gambier 5290 (087) 26 6215																																																													

CDAA SITE ACCESS

SITE	LEVEL	OWNER	ACCESS DETAILS
MOUNT GAMBIER - SOUTH AUSTRALIA (continued)			
Max's Hole	C	Mr T. Edwards P.O. Box 1319 Mt Gambier 5290	Phone or mail 1 week prior to dive. Ph: (087) 26 8277
Hann's cave	P	P & A Lasslett	Groups of four divers only apply in writing to Lisa Bernasconi. 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		Mt Gambier	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.
- East	C	Council	
- West	P		
Three Sisters	P	Millicent Council	Contact Linda Claridge (Records' Officer). Access available for experienced Penetration divers only. Low profile or side mounted independent air systems required. Access agreement must be signed prior to diving. Please allow 4 weeks for indemnities to be processed.
Idlebiddy (5L250)	P	Primary Industries S.A. (Forestry)	5L250 open 1st & 3rd weekend of month. 5L290 open any weekend.
Nettle-Bed (5L290)	P	PO Box 162 Mt Gambier 5290	Max. 4 divers per dive per day, 1 dive per day for each site. Only Penetration divers completed practical in-water cross-over. Bookings via Forests Clerk - key from Lady Nelson. Must show permit & card. (087) 24 2759. No diving on Total Fire Ban days.
McKay's Shaft	S		Contact Phil Argy at Mt. Gambier as access can be arranged.
Tank Cave	P	Mr. & Mrs. DY CER	Apply in writing at least 3 weeks in advance to; CDAA Tank Cave Access, 19 Broadmeadow Drive, Flagstaff Hill 5159. Open every weekend of the year including the Friday & Monday of long weekends. (This access may be cancelled at anytime, at the discretion of the landowner) NB: New divers must first apply for an application form to; Paul ARBON, PO Box 290 North Adelaide. (See Tank Cave Access Information - Issue No. 57).
Baker's Cave	C	Mrs. J. BAKER	Site will be open the last weekend of every month, October through to April inclusive. After indemnities have been obtained and completed via our records officer, divers may apply for access. Write one month in advance to Linda CLARIDGE, PO Box 290, North Adelaide 5006. There will be two groups of six being given access each day. SAT 9.30am - 12.30pm, 1.00pm - 4.00pm. The same times will apply for Sunday. Successful groups will be contacted in writing with further access details. NO COMPRESSORS ARE TO BE RUN ON SITE. NO SMOKING! THERE MUST BE ONE DIVER ON LAND AT ALL TIMES. FULL CLIMBING EQUIPMENT IS REQUIRED. NOTE: Two divers must pick up the key.
NULLARBOR - WESTERN AUSTRALIA			
Cocklebiddy	C	Regional Manager	Must apply for permission to dive at least 4 weeks in advance of trip. Ph: (098) 41 7133.
Murra El Elevyn	P	C.A.L.M.	
Tommy Grahams	C	44 Serpentine Rd,	Small dive site next to main chamber: Sinkhole.
Weebubbie	C	Albany 6330	
NULLARBOR - SOUTH AUSTRALIA			
Warbia	P	NPWS Ceduna	Currently CLOSED to all diving subject to draft management policy.
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) 9351 4809 w, (02) 9743 4157 h, gregr@cs.su.oz.au.	

CDAА and Nitrox

Preliminary note to the CDAА Nitrox agreement

*This agreement breaks new ground in CDAА negotiations, as it addresses non-air breathing. Members should try to understand how big a step has been taken by the landowners to accept this change after a whole generation of air-only use (25 years). I am very grateful for their willingness to examine the new concept and agree with it. There are some limitations (eg fixed Nitrox tanks at shallow depths for deco purposes, and no pure oxygen use), and these issues will be considered over the next 12 months. NO-ONE CAN USE NITROX UNTIL ALL LANDOWNERS HAVE BEEN FORMALLY ADVISED (in progress), AND CDAА CARDS ARE ENDORSED (this process being negotiated with Records in September), WITH NITROX RATING. ONLY IN THE FUTURE WILL CONSIDERATION BE GIVEN TO THE SHOWING OF NITROX QUALIFICATIONS TO LANDOWNERS - THIS IS **NOT** ACCEPTABLE AT THE CURRENT TIME. The introduction of this new technology is expected to enhance the safety of our diving, for members and instructors alike. To all CDAА members, thank you for your patience. Rushed policy would certainly have been rejected.*

Ian Lewis

Standards Director

Operating Procedures and Guidelines for the use of EANx (nitrox) Mixtures in dive sites classified by the Cave Divers Association of Australia (CDAА) July 1996

Introduction

This set of procedures is written specifically for scuba diving within the environment of Cavern, Sinkhole, Cave and Penetration sites defined by the Rules and Regulations of the Cave Divers Association of Australia (CDAА).

EANx (nitrox) programs have already been designed by major training organisations to provide recreational divers with the knowledge to use a potentially safer breathing gas for enjoying dives in the 12m to 39m range.

The following instruction agencies have (or will have) standards and procedures in place for the instruction and use of EANx (nitrox) mixtures:

- ANDI
American Nitrox Divers International
- IANTD
International Association of Nitrox and Technical Divers
- NASDS
National Association of Scuba Diving Schools
- TDI
Technical Divers International
- PADI
Professional Association of Diving Instructors
- NAUI
National Association of Underwater Instructors (specifications in preparation 1996)
- SSI
Scuba Schools International (anticipated for 1996)

WHEN DIVING IN CDAА CLASSIFIED DIVING SITES USING EANx (NITROX) THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:-

- All EANx (nitrox) divers must have their CDAА membership card endorsed with EANx (nitrox) rating by the CDAА Records Officer before using EANx (nitrox) on site. Endorsed cards must be available on site for verification by landowner or appropriate officers.
- Landowners to be informed prior to diving when a diver is to dive using EANx (nitrox).
- No EANx (nitrox) dives are to be made where the diver exceeds the Rules and Regulations of the CDAА and the specific requirements of individual landowners.

- Only divers with training EANx (nitrox) certification by a recognised training agency, as previously listed, shall use EANx (nitrox) mixtures within diving sites with CDAА access arrangements.
- A diver shall only use an EANx (nitrox) breathing mix of 32% or 36% oxygen in the diving or swimming phase.
- All nitrox divers must carry either Air or Nitrox Tables on the dive (the CDAА recommends Air Tables).
- The maximum Partial Pressure of Oxygen in any breathing mixture shall not exceed the following limits:-
 - (i) where the diver is swimming he/she shall not use a mixture where the partial pressure of oxygen could exceed 1.4 bar.
 - (ii) where the diver is undertaking Decompression or Safety Stops he/she shall not use a mixture where the partial pressure of oxygen could exceed 1.4 bar.

- Where a safety stop or decompression cylinder is used it shall not be carried by the diver during the dive. It must instead be *securely* placed at a depth where its contents, when used, cannot exceed an oxygen partial pressure of 1.4 bar.
- All cylinders which are used for EANx (nitrox) mixtures must be clearly labelled and marked as per accepted Australian or International conventions.
- All breathing equipment used for EANx (nitrox) breathing mixtures shall be appropriately cleaned and prepared by an authorised Service Technician for EANx (nitrox) equipment. (All equipment should be used in accordance with any specific recommendations by individual manufacturers.)
- These procedures are to be reviewed by the CDAА on an annual basis.

BOOK REPORT

"The Art of Safe Cave Diving"

Published by the National Association for Cave Diving (NACD)

Book review by Greg Bulling

The NACD is one of the two main diving training agencies in the USA and Mexico. Their recent publication "The Art of Safe Cave Diving", is the long awaited update of their original text "Safe Cave Diving", which was produced in 1973 (coincidentally the year the CDAА formed).

The book is of a soft cover, large format size (approximately A4), with twenty five chapters and four appendices, covering 221 pages. Like many similar publications, "The Art of Safe Cave Diving" has been produced by a number of different authors who tackle one, or occasionally two, chapters. Although this leads to thorough coverage of contemporary cave diving topics, it also has effect of leaving the book a little disjointed and at times contradictory.

The first few chapters deal with the need for specialised training and give a brief review of

the history of cave diving, with an emphasis on North America.

It is adequately covered but for those who have an interest in cave diving history one could not pass "The Darkness Beckons" by Martin Farr.

Cave diving equipment is covered very well, with an excellent insight into streamlined equipment configuration given by one of the top US cave divers, Bill Gavin.

There are many good chapters, including an excellent discussion of cave referencing and orientation (a vital but often overlooked skill), a good coverage of guideline procedures and several short chapters on specialised activities like exploration and sump diving.

The overall content of the chapters is excellent but occasionally they get bogged down with the enthusiasm of the writer for their topic outweighing what is of interest to the general cave diver.

Overall, it is well presented, with lots of black and white photographs, diagrams and illustrations and is a worthy addition to any cave diving library.

Twin Independent Crossover Manifolds:

A more detailed analysis

Submitted by Tim Payne

It was good to see an analysis, in the last edition of guidelines, of the advantages and disadvantages of a crossover independent manifold based on mathematics; however the results quoted from Bill Stone are misleading and generate dangerous conclusions. The determination of failure probabilities for the lineal system and the twin independent system are correct and without question, although the assigned probabilities are dubious (more on that later). I intend to develop, using the same reasoning, the probabilities of system failure for the twin independent crossover manifold, and to show through this analysis what the real advantages and disadvantages are. In certain situations the manifold can lead to an increased chance of air loss which is approximately 30 times more likely than in an independent system, while in other situations there is no loss of safety and a benefit of reduced gear and taskloading. Because of the already excessive length of this article, I have avoided including information contained in Des article, and so the interested reader may wish to refresh their memories before continuing.

The article by Des states that mission failure is 10 times less likely with a twin independent crossover manifold than with twin independent regulators. This is not true! To loose your entire supply of air using either an independent or a manifolded system requires 2 failures to occur (ignoring failure of a manifold itself for the moment) and this is the reason for the high level of safety in these systems, but probabilities are independent and after the first failure has occurred you are left with what is essentially a lineal system. The conditional probability of a second failure

given that one has already occurred is large. It is also important to note that the probability of a failure occurring is time dependant, if you spend twice as long in a cave then you are twice as likely to have a failure. When a failure occurs, which requires the use of the isolation manifold, then your chance of survival is 1/16 (using Des figures) of the probability that you entered the cave with. You have more air than with an independent system but the notion that you continue the dive is absurd. Get out, and get out quick. Once a failure has occurred the probability that a successive failure will occur is approximately the same, whether you have an isolation manifold, or are using twin independent systems. You are just as likely to die or survive with either system, providing that air rules are adhered to, and the same air turn around rules apply irrespective of the system employed. Detailed analysis of the isolation manifold is relatively complicated and a few more details of failure analysis need to be discussed. A tank valve, first or second stage are far more likely to fail at the initial pressurisation. Once turned on, the tank valve has almost no probability of failure, and since failure at the surface produces almost zero probability of death, it is irrelevant. We need only consider failures after this pressurisation, and for simplicity can assume that the failure probabilities are constant (In reality the chance of a component failing varies over the duration of the dive, ie. a high pressure hose, or first stage, are less likely to go half way through a dive, when tank pressure is down, than when the tanks are full). Given these constraints, the relative failure probabilities of the components put forward by Des are

incorrect. The probability of a 1st or 2nd stage failure is at least 10 to 100 times greater than that of a valve which is not in use. Having just pointed out that the probabilities are wrong I will use them anyway so that comparison between my analysis and Des can be made easily. I will also assume that the crossover valve has a total failure rate equal to that of the tank valve. Later I'll show what realistic figures do to the calculations. There are several failure modes for each of the components in the system. This detail is not necessary for the analysis of the lineal or independent systems; however it is important when including the crossover valve. This valve can fail such that it is open after failing (called failed open), closed after failing (called failed closed), or a complete failure, where air is released to the environment (called complete failure). Each one of these failure modes has an associated mechanical failure probability which I'll make equal to half of the total valve failure just for simplicity ($0.015/2 = 0.0075$) (Note that this preserves the validity of Des calculations since the lineal and independent cases only consider complete failure and failed closed modes, ie. total failure probability of $0.0075 + 0.0075 = 0.015$. Failed open does not affect system performance). The valves also have an operational failure probability, which is associated with the manner in which the crossover valve is used, and the nature of the cave. If the crossover valve is left open during the dive, (method one in Des article) then the probability of fail open in a tight restriction is equal to 1, which means that in that type of cave it is guaranteed to fail. This is not the usual type of failure because once out of that restriction (assuming its short) the probability of failure drops back to normal (although you may have lost a large amount of air). I should also point out that this failure will

not kill you by itself and another failure needs to occur for that to happen.

Lets calculate the failure modes diving with the manifold open. For notational convenience I'll label the cylinders C1 and C2, the valves V1 and V2, first stages F1 and F2, second stages S1 and S2 and the crossover valve X. The tank valves also have 3 modes of failure analogous with that of the crossover valve. The mode of failure is indicated after the label, ie. V1 open indicates that Valve 1 has failed in an open position. Complete system failure will occur when:

((C1 or V1complete or V1closed or F1 or S1) and (C2 or V2complete or V2closed or F2 or S2))

or ((C1 or V1complete) and Xopen) or ((C2 or V2complete) and Xopen)

or ((F1 or S1) and V1open and Xopen) or ((F2 or S2) and V2open and Xopen) or Xcomplete or (V1closed and V2closed)

where each line represents a slightly different type of failure, and the braces are used to group the logical expressions. The first line is equivalent to the failure probability of the independent system which requires a single failure in each of the systems, and so the other lines represent the increase in probability of system failure using a manifold. The second line of the equation represents the situation where either a cylinder or a tank valve fails and releases air to the environment, and the crossover valve cannot be closed. The third line of the equation represents the probability associated with a first or second stage failure as well as a failure to be able to close the tank valve and the crossover valve. The fourth line represents the probability of the manifold failing completely and releasing air, while the fourth line represents the probability of

both tank valves failing in the closed position. Using Des values with the modification discussed previously ($C1 = C2 = 0.01$, $V1_{open} = V1_{closed} = V1_{complete} = V2_{open} = V2_{closed} = V2_{complete} = X_{open} = X_{closed} = X_{complete} = 0.0075$, $F1 = F2 = S1 = S2 = 0.02$) the overall probability is given by:

$$((0.01 + 0.0075 + 0.0075 + 0.02 + 0.02) \times (0.01 + 0.0075 + 0.0075 + 0.02 + 0.02))$$

$$+ ((0.01 + 0.0075) \times 0.0075) + ((0.01 + 0.0075) \times 0.0075)$$

$$+ ((0.02 + 0.02) \times 0.0075 \times 0.0075) + ((0.02 + 0.02) \times 0.0075 \times 0.0075)$$

$$+ 0.0075$$

$$+ (0.0075 \times 0.0075) = 0.0120$$

Which is about 3 times more likely than a twin independent system but is still a bit more than 5 times safer than a simple Lineal system. If operational problems, as may occur in a restrictive cave where you cannot reach your valves, are encountered, then the probabilities of $V1_{open}$, $V2_{open}$ and X_{open} equal 1. The probability of failure given by substituting these values into the equation above is 0.127, which is nearly twice as likely as diving with a lineal system and 30 times as likely as diving with independents. Note that in this environment $V1_{closed}$ and $V2_{closed}$ are also likely to increase by turning tanks off on the roof and that $X_{complete}$ is also likely to increase since it will probably take a greater number of hits. The operational problems described above need not occur in tight restrictive caves, other factors, such as narcosis, or a simple lack of flexibility which prevents the valves from being closed will have the same effect. Examining this probability, it is easy to see why the manifold system is dependent on a good buddy system.

The isolation manifold will allow recovery from a single failure with a greater quantity of air than a twin independent system, but in ideal conditions you are 3 times (probably still acceptable) more likely to lose all your air with a manifold, while in restrictive passages you are 30 times (unacceptable) more likely to lose all your air than with an independent system.

The second method of using the isolation manifold (periodic decanting) results in the same expression as above; however the probabilities substituted into the expression are different. When there are no operational constraints on the use of the valves, then the probability of system failure is identical to that of the manifold using method 1; however, since the manifold is normally closed, the operational failures are significantly reduced, as X_{open} is now equal to the mechanical failure probability of 0.0075 while $V1_{open}$ and $V2_{open}$ are still 1. The resultant probability of failure is approximately 0.012 which is almost identical to the value obtained in the ideal situation.

As noted earlier, if the original pressurisation stage is ignored, then realistic probabilities of an unused valve or cylinder failing should be at least ten times lower than the value used by Des, or in the calculations to date. With this lower figure, the probability of a complete loss of air using an isolation manifold, in an ideal environment, is essentially the same as that of a twin independent system, since all but the first line (which represents the failure of an independent system) of the equation become approximately zero. The non-ideal, restricted situations where operational failures can occur change little and still result in a loss of air with a probability up to 30 times greater than in a twin independent system. It is interesting

to note that if a simple non-isolating manifold is used ($X_{open}=1$, $X_{closed}=0$, $V1$, $C1$, $V2$ and $C2$ use realistic values approximately equal to 0.001) then the probability of a complete loss of air is approximately the same as that of the isolation manifold, (as used in method 1) in both ideal and non-ideal situations, and so the crossover valve has little or no safety benefit.

Finally to make some notes on the suggested methods of use. Ignoring the safety benefits of a manifold, since their aren't any, the main reason for using the manifold is to reduce task loading during the dive. Using the manifold with the valve open does in fact do this, since you do not have to change regulators and only need to monitor a single pressure gauge, but it also means that your other regulator system could fail or the valve become turned off (particularly likely for the lefthand tank unless you use a line catching device to protect the valve) with out your knowledge. As I mentioned previously, after the first failure you are diving with a high chance of system failure, and you should get out of the cave, except that because you are ignorant of the failure you proceed further and further towards your death. Even though you don't need to use the other regulator you should check its operation periodically to ensure that it is still operational. This is done routinely with an independent system. Using the above mentioned method a high pressure hose and gauge can be eliminated from the system; however this is not possible with the second method of use where gas is periodically decanted from one cylinder to the other. The notion of only periodically knowing (immediately after decanting) how much air you have, or having to remember continuously how much air was in the other cylinder, or even the

gymnastics involved in periodically decanting are counter to the idea that the manifold reduces task loading. Indeed you should be decanting more often than you would normally change regulators using an independent system if you are to maintain adequate reserves in each cylinder to allow for the possibility of a loss of one system and its air.

Just a final note about the numbers. I have already stated that the probabilities listed here are wrong, and there are no quick and simple methods of determining precise numbers. What is important is the relative relationship between the numbers. The relative performance of the different techniques will not change with different probabilities although the numbers will.

In summary

- ? The isolation manifold system provides no safety advantage over an independent system.
- ? In ideal operating environments (shallow, unrestricted) the manifold system is as safe as an independent system.
- ? In non-ideal environments (deep, restricted) the manifold system is 30 times more likely to result in a complete loss of air.
- ? If using the manifold in the open position, there is no advantage of an isolation manifold over a non-isolating manifold.
- ? Using the manifold to periodically decant has no task loading or safety benefits over an independent system.
- ? Because of the high probability of complete air loss, manifold diving relies heavily on backup from a buddy.
- ? Use of a manifold does not reduce the likelihood of mission failure.

1995 Cocklebidy Expedition

by David Doolette

Cocklebidy cave is one of the many limestone caves in the vast, isolated area generally known as the Nullarbor plain. Only a few of these caves reach down 90 metres to the aquifer, and a small handful of these form fabulous cave diving sites. Cocklebidy cave is in Western Australia, approximately 350 kilometres west of the South Australian border and about 35 kilometres inland from the Great Australian Bight, not far north of the highway on which the mainly Adelaide based team travelled 1650 kilometres to the cave site. Cocklebidy cave trends northward from its large doline, a large entrance leading down a rocky slope to the vaulted lake chamber, 90 metres below the plain. This chamber is some 50 metres wide and high and the last two thirds is filled by the 200 metre long entrance lake. As the roof lowers to meet the water at the far end of this lake, diving begins. The first sump is 750 metres long, the visibility for the first 500 metres is typically poor, about 1 metre during our expedition, but thereafter visibility improves, and in the subsequent sumps may exceed 250 metres. This first sump is followed by a 50 metre long lake and then a 200 metre long lake separated by a duck under of about 20 metres. At the end of the final lake is a rock fall known as the Rockpile which is a barrier to further diving. The Rockpile is about 80 metres long and 20 metres high and the ceiling is about another 20 metres above. On the far side of the Rockpile is a large lake, about 30 metres long which submerges into the second sump. The second sump is 2500 metres long, ending in a small lake at Toad Hall, an impressive chamber formed by rock fall. The Toad Hall rock fall is again about 20 metres high but some 300 metres long, and the roof height varies from 1 metre to 20 metres. The third sump begins in a small lake on the far side of Toad Hall and travels some 200 metres, continually narrowing until apparently impassable for even the most streamlined diver. Although the far reaches of the cave narrow down into multiple, small phreatic passage, the majority of the single main passage averages 15-20 metres across and 5-10 metres high with many much larger rooms. The average depths on the roof are 10 metres in the first sump, 14 metres in the second and third sump.

In September 1995, a nine member team made what is only the third ever dive beyond Toad Hall, extending the existing line by only 20 metres before finding the apparent end of the cave. The team consisted of: Chris Brown (third sump diver and team leader), David Doolette, Tim Payne, Stefan Eberhard, Wolf Seidel (Toad Hall support team), Richard McDonald, Dennis Thamm, Brenton Woolcock (Rockpile support team) and Peter Girdler (surface manager). The team was accompanied by a larger contingent of television crew who filmed above ground and as far as the Rockpile for a television documentary and for news coverage.

The dive team arrived at the cave on the evening of Saturday 16 September 1995, and Sunday and Monday were consumed by preparations for the first setup dives. This involved lowering the diving gear approximately 35 metres down the doline where a 200 metre long flying fox was set up to whisk gear from the cave mouth to near the waters edge. 200 metres of copper tubing was put in place to provide compressed air at the water edge from a 15cfm compressor on the surface. Electrical cable was run from generators on the surface to provide electric light and battery charging at the waters edge. Gear moved into the cave included 60 cylinders, 1 aquazep scooter, 2 homemade aquazep style scooters (aquamacs), 4 Tekna scooters and 3 equipment sleds. These latter are peculiar to Australian cave diving and are tubular aluminium sleds capable of carrying 14 cylinders and/or caving and camping equipment. Dry equipment is kept in o-ring sealed dry tubes approximately the size of a scuba cylinder and wet equipment is strapped on externally in caving packs. The sleds have front and back bouyancy chambers that are supplied with air from independent bc inflators operated by a diver swimming behind.

On Tuesday and Wednesday setup dives were made by all eight divers to the Rockpile. On each day, the three sleds, laden with kit, were towed by either Aquamac scooters or Teknas into the Rockpile, a trip lasting about 40 minutes one way, and six to eight hours spent carrying equipment across the Rockpile. These were long days, the divers leaving for the entrance lake mid-morning

and not returning until 3:00am the next morning. On the Wednesday, the aquazep and two aquamac scooters and two of the sleds were also carried across the Rockpile and made ready to dive the second sump. Used scooter batteries were removed and returned to the entrance lake for recharging during the rest day on Thursday.

Friday was the beginning of the major push dive. Chris Brown and Richard McDonald, accompanied by the TV u/w crew dived to the Rockpile at 6:30am for a live interview conducted via the 1100 metre fibre optic cable installed by the dive team during the setup dives. The remainder of the dive team ate a leisurely breakfast and dived to the Rockpile at approximately 8:30am. These dives were by Tekna, towing a second diver. At the Rockpile recharged scooter batteries were carried across and the scooters and sleds rigged for diving. Each Aquamac scooter was attached to a small aluminium frame used to carry two cylinders to be breathed during the dive to Toad Hall, as well as to protect the scooters during transport, etc. The aquamacs were used to tow the large equipment sleds. Each sled contained two cylinders to be breathed by the sled operator during the dive to Toad Hall, one cylinder used for the bouyancy tanks on the way in and another for the way out. The additional space in the sleds was occupied by equipment for the third sump including six additional cylinders and fresh aquazep batteries, as well as camping gear and filming gear for the two day stay in Toad Hall. The aquazep was attached to a modified sled that carried 4 tanks, two used while under-way and two that were removed for use in the narrowest sections of the final push, this scooter did not tow a large sled and could be used as a backup. Each diver wore triple independent cylinders, two wings, 7mm wetsuits, one primary and three backup lights etc. etc. With a few exceptions cylinders were 11.5 litre wc, filled to 250 bar. Additional primary lights, including 400 watt filming lights were carried on the sleds. David Doolette and Tim Payne operated one aquamac/equipment sled combination, Stefan Eberhard and Wolf Seidel the other, Chris Brown rode the aquazep. The Dive to Toad Hall departed at the Rockpile at approximately 5:30pm Friday and travelled north through 2500 metres of the most extraordinary cave passage imaginable, a trip taking 133 minutes.

At Toad Hall, dive gear to be used on the return trip was parked on whatever dry rocks that could be found, as access to the main rock fall is up a two metre step. The sleds were unloaded and kit for the third sump and camping gear was hauled up this step. The cave radio was unpacked too late for our scheduled 8:00pm radio link to the surface and waited until the next hourly schedule to inform the backup team of our arrival. The kitchen was setup on top of the step on a convenient flat area, dinner prepared and eaten, and we carried our sleeping gear up the bedroom and radio area, the next flat area some 20 metres up the rockfall and sufficiently near the roof that standing was impossible. After dinner we carried all the gear to the bedroom and carried the first load of gear to the other side of Toad Hall to investigate the lake and our new home. The 300 metre trip across takes about 25 minutes carrying gear and is quite unstable in places as visits here have been few, ours being the sixth ever group to make the trip. We left the gear, returned to the bedroom and retired to our air mattresses and space blankets for 7 hours of sleep. The next morning no-one was keen to get up as the bedroom was the only comfortable spot, but after a radio call we descended for breakfast and followed this with several hours of hard labour carrying gear across Toad Hall. This gear included 1 aquazep, its aluminium tank frame, its fresh batteries, 8 cylinders, 9 regulators, 9 dive lights, a no-mount bouyancy system Chris's personal gear (Chris sh** as it came to be termed as the trip wore on). Also transported were video lights and camera and still cameras for above water filming. These trips were quite uncomfortable, the atmosphere in Toad Hall is good, about 19% O₂ and 0.3% CO₂, but while the temperature is a comfortable 23 degrees Centigrade, the humidity is near 100% and perspiration buckets off you at the slightest exertion. We then luncheoned lavishly on camp slop and returned to the third sump to help Chris set up his gear.

Chris departed for his solo dive at 6:27pm Saturday. His outward journey started on aquazep, breathing from two scooter mounted cylinders, through a sinuous small tunnel of about 4 metres diameter. After about 1200 metres the tunnel makes a sharp right turn and soon becomes too narrow for scooter travel. At this point Chris left the scooter after removing the no-mount

system, two cylinders attached to a small frame with an internal buoyancy bag. Swimming on, breathing from his triples for some 400-500 metres as the cave swung back around to the north, he reached the end of the line placed by Francis and Eric LeGuen in 1983. Curiously a small section remained although most had been replaced by a heavier polypropylene line by Hugh Morrison, Ron Allum and Peter Rogers during the later 1983 Australian expedition. At this point the tunnel became impassable with back mounted cylinders and Chris left his triple cylinders to continue breathing from the no-mounts, he additionally carried a 63cft cylinder side mounted (stage style). The subsequent 240 metres following Hugh Morrison's line took 25 minutes to negotiate, and at two points was sufficiently narrow that the stage cylinder had to be removed and pushed in front to allow passage. Eventually he found Hugh's reel where it had been left 12 years before and attached his own reel to continue on. After laying 20 metres of line he rounded a corner to find the tunnel narrowed to a point where progress seemed impossible, 6260 metres from the cave entrance we left 36 hours earlier. Dive time at this point was 97 minutes and while thoughts of removing more gear in an attempt to further negotiate the tunnel were entertained, Chris decided that such attempts would be futile

and dangerous and decided to return. Chris arrived back at Toad hall at 9:40, only minutes after we expected him, so we hadn't time to start worrying. We carried a small amount of gear across Toad Hall to the second sump, contacted the surface, ate, celebrated and slept. Sunday we carried all the gear back across Toad Hall and setup for the dive out to the Rockpile. After adding our names to the visitors slate, making 18 total visitors, we left. This dive commenced at about 7:00pm and lasted 140 minutes and was the most spectacular dive of the trip. The team was considerably more relaxed than on the way in and had re-configured some gear based on lessons learned on the previous dive. With battery power to spare, we burned what 50 watt lights we had instead of the 20's used on the way in, and did a number of extended burns on the 400 watt flood lights, and even though the tunnel is large enough to swallow these lights it was still quite a sight, the best I have seen in 12 years of cave diving. Richard, Dennis and Brenton met us at the Rockpile, and some gear was carried across for a subsequent second sump dive by the support divers. We returned through the first sump by Tekna to the lake entrance, arriving at about 3:00am, and climbed up to the plain, not quite three days after entering the cave.

Exploring Underwater Caves in Turkey

by Todd Kincaid

Re-printed from the spring issue of the NACD Journal with kind permission of Todd Kincaid, Jarrod Jablonski and Elena Casson

Riding underwater scooters propelling us effortlessly through cave passages filled with huge fallen boulders, Jarrod Jablonski and I darted out from a large hallway into what felt like oblivion. The beautiful cobalt blue hue produced by our light refracting off the snow white walls turned black as we literally fell into a room so large that the walls, floor and ceiling dropped out of sight. I couldn't stop laughing through my regulator and when Jarrod turned to look at me in disbelief, I saw he was having the same problem. Later we mapped the room to be over 300 x 200 feet and though our decompression requirements precluded us from accurately measuring the vertical height, our best guess was over 150 feet from floor to ceiling. Almost out of necessity for explanation the room was dubbed the "Stadium". The cave is Kirkgoz-Suluin. The site is Dosemialti, Turkey. Jarrod and I had come all the way from Florida to the Taurus Mountains of southern Turkey near Antalya for project KarstDive 95. We joined our friends Gokhan Ture and Zafer Kizilkaya of the Underwater Research Society (SAD) of Ankara, Turkey to explore virgin underwater caves. What we found in Kirkgoz-Suluin is undoubtedly one of the largest underwater chasms in the world.

Project KarstDive 95 conducted in August 1995 marked the beginning of new research and exploration into the, up to now, unexplored, underwater caves of Turkey's Taurus Mountains. The first of it's kind, KarstDive 95 was an international and multi-agency effort to explore, map, and document several underwater cave systems along the

southern flank of the Taurus Mountains. The Woodville Karst Plain Project Cave Diving Team (WKPP), the University of Wyoming Department of Geology and Geophysics (UWG&G), the International Research and Application Center for Karst Water Resources (UKAM) of Hacettepe University in Ankara, Turkey, the Underwater Research Society (SAD) of Ankara, Turkey, the State Hydraulic Works (DSI) of Antalya, Turkey, and Kepez Electric Company also of Antalya all cooperated as the principal organisations responsible for the success of the project. A four member team was assembled to conduct the underwater cave exploration. Team members included myself from the UWG&G, Jarrod Jablonski an NACD and NSS-CDS Cave Diving Instructor and Exploration Coordinator for the WKPP, Gokhan Ture and Zafer Kizilkaya, director and assistant director of SAD, and Hakan Gonendik our team photographer from Ankara, Turkey.

Frustrating delays, a ton of red tape, and countless unforeseen problems resulted in only eight diving days during a three week project. But, in those eight days, four cave systems were explored (Kirkgoz-Suluin, Finike-Suluin, Duden spring, and Kirkgoz-1 spring), nearly 5000 feet of cave passages were mapped and recorded on video tape, and a new depth record was set for that part of the world at 390 feet below sea level. Helium and Oxygen had to be trucked across the country to the dive sites from Ankara as we had expected extreme depths. The physical challenge began far from the water especially at Kirkgoz-Suluin and Finike-Suluin. Unlike the easy access taken for granted in

A.B. OCEAN DIVERS

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CAVERN COURSES October 21st - 3rd November, February 24th - 9th March.

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Florida and even a daunting task for the gallant WKPP support team, double tanks, scooters, stage bottles, deco bottles, lights, video equipment, etc., etc., etc. had to be hauled over a mile from the trucks across a stream, over 300 feet up the side of a mountain, and then over 300 feet down to the water inside the cavern entrance. On this project the support team consisted simply of the five team members. We all carried equal loads in, and, most thankfully, Gokhan, Zafer, and Hakan carried it all out while Jarrod and I decompressed after the dives. Four days in Kirkgoz-Suluin and one day in Finike-Suluin were worth every bit of the work.

On the second day in Kirkgoz-Suluin, Jarrod and I pushed through a restriction at 275 feet swimming through the silty aftermath into a hallway that kept getting bigger. On the third dive we came back with scooters passing huge fallen boulders when the turn of a corner left us in the Stadium. That was likely the easiest 1500 feet of underwater passage ever surveyed; only six total shots, two of which were over 300 feet long. At Finike-Suluin, another long hike with the equipment rewarded us with a single mammoth conduit measuring over 200 feet in diameter. Huge stalactites draped from the ceiling making the cave look like the mouth of a giant serpent.

After a twenty minute video tour of the entrance, we said good-bye to Gokhan and Zafer at 120 feet. Jarrod picked the left wall's ceiling and headed in while I tied line wraps around stalactites so big I could barely get my arms around them. The floor quickly disappeared from site and as the tunnel kept descending, we were desperately looking for a place to drop our scooters. Eventually we came to a ledge at 300 feet where we dropped our scooters and headed for the floor. After tying off at 390 feet, there wasn't much time to have a

good look around but the cave appeared to keep going through a crack-like restriction. Returning to the ledge, we found Jarrod's scooter imploding from the depth so he swam it out while I finished collecting the survey data. The sunlit entrance was visible from over 250 feet below the water. Decompression in both Finike-Suluin and Kirkgoz-Suluin was far from boring as ancient artifacts were found littering the floor of both cave entrances.

The hill slopes of southern Turkey's Taurus Mountains are dotted with huge karstic cave systems like Kirkgoz-Suluin and Finike-Suluin. Most of them are dry and have been thoroughly explored by Turkish and European cavers. But, the lack of cave-diving training and equipment in Turkey has left the submerged systems all but untouched. Crystal clear spring water pouring out from the entrances to huge caverns has generated imaginative myths about underwater tunnels that cut completely through the mountains. Rural people and even Turkish cities depend on such springs as their only sources of fresh water. KarstDive 95 was orchestrated not only to explore these unseen caves but also to document the ground water flow pathways to help DSI better understand their ground water reserves.

Two distinct types of ground water circulation were documented during the project. Exploration in Kirkgoz-Suluin revealed that the permeability structure of the Taurus Mountains is dominated by huge interconnected vugs or dissolved cavities. There, rooms as large as 300 feet in diameter are connected by small passages that circumvent large collapsed boulders. Nearly imperceptible ground water flow through the interconnected voids discharges at several low magnitude springs, such as Kirkgoz-1, along the

contact between the limestone mountains and a vast travertine plateau. On the contrary, exploration of Duden spring in the travertine plateau was reminiscent of Falmouth or Manatee where a single conduit 10 m in diameter appears to go for infinity. Duden, a high magnitude spring is clearly the predominant discharge point in the entire travertine plateau.

Karst Dive 95 succeeded only through the support and cooperation of all the participating organisations and the help of several outside sponsors and individuals, most of whom remain unnamed but not forgotten. There were many significant logistical problems involved with organising and carrying out a project of this magnitude. Most obvious was the technical difficulty associated with safely exploring and mapping underwater caves of unknown depth and dimension. The lack of available technical diving equipment in Turkey demanded that all the necessary equipment be shipped from Florida. To that end, Lufthansa Airways (Germany) helped sponsor the project by shipping over 1500 lb. of tanks, regulators, scooters, lights, dry suits, etc., etc. from Miami, Florida to Ankara, Turkey. Once in Ankara, the equipment was taken by caravan (bus, pickup truck, and cargo company) 1000 miles across the country to Antalya. Precious helium and oxygen was supplied by the British Oxygen Company (Ankara, Turkey). Independent sponsors were organised by SAD which contributed \$10,000 to cover the cost of the ground transportation, as well as technical supplies, government permits, food, and lodging. In addition, Atlas Magazine (Istanbul, Turkey) contributed \$1500 for photographic equipment and supplies. American Underwater Lighting (Leesburg, Florida) donated an underwater video camera housing and special underwater video lights. Finally, the

National Speleological Society - Cave Diving Section donated 10,000 feet of exploration line. Despite the generosity of all the sponsors, there were still many expenses such as air-fare from the U.S. to Turkey that had to be covered by the individual team members which combined with the opportunity cost of a month-long expedition almost made the project infeasible.

Karst Dive 95 paved the way for future exploration and research into the Turkish underwater karst. Plans are already being constructed for a longer and better prepared KarstDive 96. Next summer, a larger US-Turkish team will concentrate primarily on the vast Kirkgoz-Suluin system. However, additional dives are planned for both Duden and Finike-Suluin as well as to investigate some other unexplored cave systems in the region. The UWG&G and UKAM have begun to collaborate on a joint scientific investigation of the permeability structure in Taurus Mountain karst for which DSI and Kepez Electric have agreed to provide some logistical support. KarstDive 95 proved the feasibility of exploring and documenting Turkey's underwater caves and that the scientific data necessary to understand the complicated ground water circulation system in southern Turkey lies within them. The proper support and funding for future research in the southern Taurus Mountains will, not only increase the understanding of ground water circulation in karst environments, but also produce valuable information about the availability of ground water to people in the growing city of Antalya.

Note: A video tape documenting Project KarstDive 95 will soon be available.

EVERYTHING YOU WANTED TO KNOW ABOUT PENETRATION COURSES BUT WERE AFRAID TO ASK

Submitted by Greg Bulling

Penetration Courses - What's the real story?

I am continually amused by the stories I hear regarding what allegedly happens on Penetration courses. To set the record straight, I thought I would outline the structure of the present course, how it runs, and what to really expect. I'll outline some common questions people ask with an explanation to each.

1. What are the pre-requisites?

The minimum pre-requisites are:

- 18 years or older
- Hold a current CDAA cave rating
- 15 post course cave dives (totalling a minimum of 10 hours), in a variety of sanctioned sites
- A current diving medical

2. Under what format is the course run?

The courses can be run in one of three different formats:

- five consecutive full days in Mt Gambier.
- five full days in Mt Gambier split over a three, and then two day weekend.
- part-time, with local theory and training, followed by dives in Mt Gambier. (This format relies on a suitable local cavern site being available for training).

3. What are the course dates?

The dates of each course and the type of format rely on demand, however, a five day course is scheduled each year over the Easter break, to enable people to make longer term plans. This has proved to be popular for those coming to Mt Gambier from states further afield.

4. What is covered in the course?

The course is divided into the following modules:

- Theory Presentations

- Workshops
- Land drills
- Training sessions
- Pre-assessment dive
- Stress management exercise
- Theory & communications assessment
- Supervised dives
- Individual course de-briefing (mid and post course)

5. What topics are covered in the theory sessions?

The theory sessions follow a set of course notes and include slides and overheads. They cover topics which include:

- Equipment
- Guideline Procedures
- Communications
- Restrictions
- Dive Planning
- DPV's
- Decompression Review
- Mapping
- Access Procedures
- Accident Analysis

A unique set of notes is produced for each course. As well as covering the core topics, they include numerous up to date articles pertinent to contemporary cave diving. The notes are constantly reviewed, with material from the Internet and other cave diving sources added when it becomes available.

There are also two workshops which run in conjunction with the theory sessions. The first of these discusses several dive scenarios and looks closely at the decompression implications. This particular exercise is prepared by the candidates before they begin the course and is then discussed in a group situation.

The second workshop involves the candidates splitting into groups and planning quite a complex series of dives. After the planning phase the groups come together and critique each other.

6. What exams are there?

The theory assessment takes the form of a written exam (2 hours) as well as an oral communication test. The latter involves candidates transferring written questions and statements into hand signals. It assesses the ability of the individual, to both give and receive visual communication.

7. What is involved with the in-water training?

The practical exercises are conducted in a cavern site (usually Gouldens Hole) and involve:

- Entanglement and subsequent line cutting (done in blackout)
- Black out lost line searching
- Complex "jumping" and changing direction from line to line
- Restriction negotiation and gear removal
- Mask exchanges
- Demonstration of correct buoyancy control, trim and propulsion techniques

The first three of these skills are initially demonstrated by the instructors, and then practiced by the candidates on land, before they attempt them individually underwater.

8. What testing is done during the in-water training?

Following the two in water training sessions the skills are combined into a circuit which must be satisfactorily completed as part of the final pre-assessment dive. This session also includes the stress management exercise. This

begins with two divers running a reel and completing several line placements before a simulated out of air situation occurs. The divers also lose their masks at this point, and must buddy breath during their return.

It is a requirement that pre-assessment circuit dive and the stress management exercise are successfully completed, before the candidate can continue with the supervised dives.

9. What feed back is given to candidates during the course?

The instructors make accurate feedback a priority of the course. Questions, discussion topics, new equipment ideas etc are encouraged during the theory presentations. At the completion of each exercise individuals are personally debriefed on both positive and negative aspects of their performance.

Once the pre-assessment dive has been successfully completed the candidates are given a thorough "mid-course" debrief. This outlines to each individual the areas which they have performed well in, as well as the areas that need some improvement. From there they move to the second phase of the course which is the planning and execution of the supervised dives.

On completion of the supervised dives each candidate is given another debrief, this time on the entire course. Using detailed notes taken throughout the course, the instructors can give an accurate picture of the total performance of each candidate. This is usually an excellent learning experience as the improvement in each candidates performance as the course has progressed, can be accurately gauged.

10. How many supervised dives are done, and what is expected on these dives?

There are a minimum of three supervised dives after the pre-assessment circuit dive. The first of these is done in a cave site (usually Engelbrechts East) and is designed to allow the instructors to view the performance of the candidates in some real life situations (ie negotiating restrictions, low visibility, running jump reels etc), while maintaining a good degree of supervision.

The remaining two dives are done in Penetration level sites (usually Engelbrechts West and Iddlebidy). On each of these dives the candidates will experience tasks which relate directly to their training, including the negotiation of restrictions. At no time during any of the dives in the overhead environment are any out of air drills done.

11. How hard is the course really and do many people fail?

There is no doubt that the Penetration Course is demanding but the success rate since its inception in 1991 is greater than 90% (a total of 79 candidates have attended with 7 failures). Divers who have good basic cave diving skills and a degree of self reliance will find the course challenging but ultimately rewarding. The course has not been designed to fail people but rather enable them to learn and then demonstrate important cave diving skills.

12. What can I do to prepare for the course?

The key to success is to be well prepared. Make sure you have recent experience with the equipment you will use on the course. Practice fine buoyancy control using correct trim, on dives leading up to the course and be confident of your ability to handle the stress management exercise.

Talk to others who you respect, that have done the course, and ask them any questions you may have.

Remember, the biggest fear most people have is not knowing what to really expect.

If you would like to apply to do a course, are interested in future dates or just have a query, please feel free to contact me on:

Telephone:
(08) 265 4978 (hm)

or e-mail:
gbulling@dove.mtx.net.au

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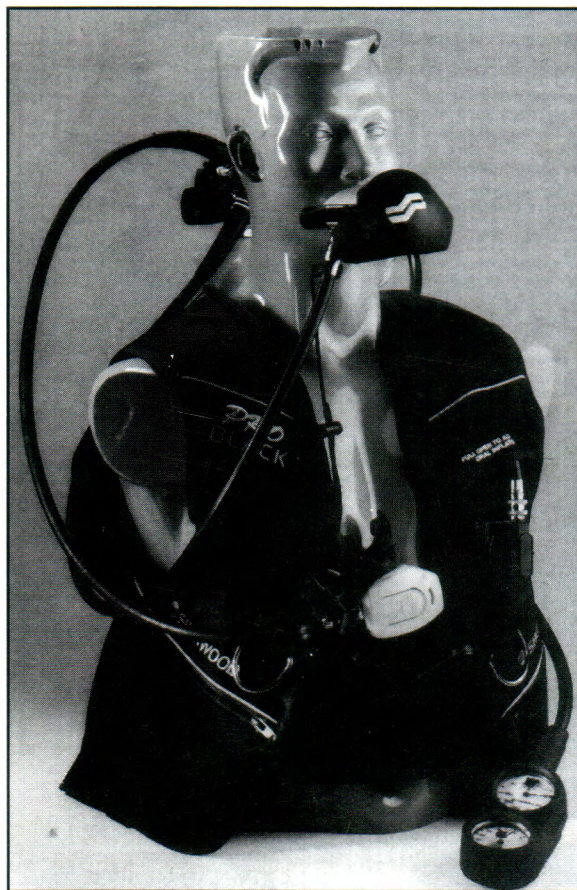
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NOTICE from the CDAA Business Director, re
the resignation of Lisa Bernasconi.

NOMINATIONS for NATIONAL DIRECTOR

As per the C.D.A.A. Constitution.

Polling Date: 16th December 1996.

Final date for Nominations to be received:
November 16th 1996.

A separate mailing will be conducted by the
Business Director advising all financial members
of the Nominations. Financial members will be
able to vote by mail in a dual envelope system,
to ensure privacy.

The Returning Officer is Mr Chris Edwards,
Nominations should be returned directly to him
at 15 Tauton Ave. South Oakleigh. 3167.

Nominees will be notified when their nomination
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