C.D.A.A. Newsletter

GUIDELINES

No: 36 – JULY 1990

CAVE DIVERS ASSOCIATION OF AUSTRALIA
(Incorporated in South Australia)

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

Front Cover: "Tank Cave".
Photo courtesy Peter Rogers.

GUIDELINES is the newsletter of the Cave Divers Association of Australia, published four times a year – January, April, July and October. All articles for the following issue are to be sent to the Editor, P.O. Box 290, North Adelaide, SA 5006, prior to 10th September, 1990. Articles and information may be reproduced without prior permission provided reprints are credited to the authors and GUIDELINES. Private ads for caving and diving equipment may be advertised free. Opinions expressed in GUIDELINES are those of the individual authors and are not necessarily those of the C.D.A.A.

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DIRECTORY

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

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EDITORIAL

Welcome to the second edition of the "new look" GUIDELINES, and by gosh – it's on time too! Firstly a special thank you to our publisher Ruth, who, thank heavens, is a cave diver, and puts up with all the problems and messy manuscripts we can come up with, putting them all together into what has now become the best magazine of its kind anywhere.

This is the largest GUIDELINES ever, which is an indication of the amount of activity going on in the Association over the last three months. The various Directorate members have been busy in many different areas, and the results are plain to see – more sites being explored or opened, cross-over programs becoming more frequent, and yes, the new cards are almost ready (just a few more weeks).

Another thank you to the Directors of "Outdoor Survival", "Diver Supplies" and "Underwater Sports Diving Centre" for their generous donation of gear to be used as prizes for future competitions. With their support, yet another area of the Association has turned the corner and come of age, so it's now up to all you folks to support these upcoming competitions.

It's a very busy and exciting time, so if things seem to be going all too slowly, please be patient. Remember, all good things come to those who wait – eventually.

Until next time, safe cave diving,
TONY DAVIS, *Editor.*

A MESSAGE FROM THE NATIONAL DIRECTOR

Before getting onto any politics, I want to take the opportunity to express a special thanks to three of the people who have worked with me in achieving many of our aims.

Sadly, the first is to Mike Vize. Although formal words are belated as Mike recently died in a parachuting accident, the expression of respect for Mike and the contacts he had were evident from both the number of calls from members who had dealt with him and of those who attended the service. He served on the committee during one of our busiest periods and his efforts certainly made my job easier. I was as proud to know him as I was to hear some of the words spoken in admiration during the after service speeches. He will be sincerely missed as a colleague and friend to many.

Secondly, to another committe member, Nick Jones, who was already actively involved in the executive when I first took office. Apart from maintaining the Secretarial and Treasury functions, being responsible for introducing many of the current practicle processes we use and instigating a cost cutting measure or two. He was always a good conscience for the "bread and butter" diver and the odd committee member as well. He stuck to task during our "testy" years and can retire knowing he played a major role in the current success of the Association.

Finally, talking of people who have contributed over and above the call of duty. Ian Lewis, who yet again, came back into the political scene, this time as the National Testing Officer as I became President, had the job of re-organising the qualifying arm of the organisation at a time described as the "beginning of the end" by many members. Affectionately known as the "Drifter in the Drover" his style has not always reflected a politician, but there is no questioning the energy he has devoted to the association. During the past three years, Ian has spent far too much time on CDAA Business, and I know he has enjoyed what the organisation has achieved and with his help we have reached a milestone in our credibility. Ian is retiring as the Standards Director and will be concentrating on several special projects under the National Directorate, among these are the assessment of sites, instructors, and standards procedures of Queensland, NSW, WA and Tasmania. Some preliminary investigation on a training centre/visitor centre with National Parks and Wildlife and

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some promotional documentation.

Until formal elections in August/ September Alan Joliffe has been nominated by the Directorate in consultation with Tony Richardson (National Training Manager) to replace Ian as the Standards Director. Should there be any objections to this short term appointment, please forward them in writing to the National Director. Should they be forthcoming, an interim formal member election will be considered.

Politics – at present, Queensland in general, Indemnities, leases and new sites have figured largely over the past three months. See "CDAA News".

Queensland – a copy of a letter received by the Minister of Employment, Training & Industrial Relations is on Page 27 Arrangements are underway to meet with both government officials and Queensland divers during early July.

David Bird (Association Solicitor) is currently negotiating with solicitors for Millicent Council (lease for 3 Sisters). Reg Jones (Tank Cave Indemnity) and clarifying some points on indemnities with Murray McKay (McKay's Shaft), see CDAA News.

I must reinforce that often, sites that are open, close temporarily and some times even visa versa, during indemnity negotiations. Access status, especially when a decision to close is made, does not happen without fair deliberation by the Directorate, founded on advise from solicitors and landowners in respect to "operating" in the best interest of the landowner. In doing so, we continue to be unquestioned in where our motives lie. To date, once clarification of an agreement has been made, no site has remainded closed.

Articles from the Research Group and the Water Monitoring Program appear later in the edition.

Thanks again for your support.

Lance R Mitchell

Lance Mitchell
National Director

CDAA NEWS

PICCANINNIE PONDS

In a meeting with NPWS, Pics. was discussed. The depth limit set in Pics. is not a recommendation. Divers recently caught exceeding this limit have handed in their Cave Diving Cards and may be facing NPWS prosecution.

Members are reminded at this stage that if we are to gain access to new sites, then they must be viewed as being responsible. Any member who places the credibility of the association at risk is placing your sport at risk. It is up to you to ensure that this does not happen.

UNCERTIFIED "SHAFT" DIVER REVEALED!

Lisa and John Dalla-Zuanna are proud to announce the arrival of their first born – Jack. Although yet to receive his certification, he has done three "Shaft" dives to date (two without mum's knowledge)! All are doing fine.

NEW CARDS

The new cards will be available in the next couple of weeks. To obtain your card you will need to send: 1) A 30 x 30mm colour I.D. photo with your name marked on the back; 2) A self-stamped address envelope; 3) Membership renewal (if applicable).

KEEP your old card, as it may take up to 4 weeks to get your new card. Due to m/ship renewal and requests for new cards, our Records Officer will be very busy – so please be patient.

INSTRUCTOR EXPRESSIONS OF INTEREST

The Directorate is calling for expressions of interest from any member who has formal S.C.U.B.A. Instructor qualifications and who wishes to be considered as future Cave Diving Instructors under the new Cavern, Sinkhole, Cave and Penetration Awards.

Please send some basic details on qualifications, history of Cave Diving and general Instruction experience together with the award/s you may choose to instruct and the regions of Australia you will most likely operate in, to the CDAA post box.

CDAA EXAMINERS

The following examiners are available for any Category test. Training courses, advice on Training Techniques and Equipmment, and for any comments you may have on the CDAA operations. The Training Manager is Tony Richardson.

NAME	PHONE
New South Wales	
Ron Allum	(02) 534 6615
Des Walters	(060) 25 3506
Andrew Wight	(02) 428 2176
South Australia	
Chris Brown	(08) 79 1445
Glen Harrison	(08) 386 3237
Ian Lewis	(087) 35 6100
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Tim Miles*	(08) 289 2030
Western Australia	
Gary Kaal*	–
Hugh Morrison	(09) 409 9807

NAME	PHONE
Victoria	
Bill Bernhardt	(03) 725 9716
Stan Bugg	(03) 379 8791
Scott Carpenter	(056) 25 2508
John Dalla-Zuanna	(03) 370 1093
Barry Heard	(056) 27 5511
Alan Joliffe	(03) 874 7669
Phil Mann*	(03) 689 7791
John McCormick	(03) 569 6948
Tony Richardson	(03) 754 6163
Bob Wealthy	(03) 789 6389
Frank Ziegler	(055) 26 5288

** Trainee*

We would like those members who are eligible and have been actively involved in assisting in past courses, in many of the Dive Clubs and Schools to give the idea support.

DIVE BOOKING FORM

Page 14-15 contains a dive booking application form. This can be used to assist you and landowners when booking dives e.g. Barnoolut, Piccaninnie Ponds.

MACKAYS SHAFT

A new site, called Mackays Shaft, has been introduced into the system. The landowner has accepted the indemnity pending some clarification.

Mackays Shaft, located almost in Mt. Gambier, has two unique aspects. Firstly is the shaft itself. Unlike the Ashby's, Mackays is a solid rock shaft. A solution tube 2-3m wide and descending vertically 25m to a large underground lake. Although the dive itself is only 15m deep, it contains growth formations such as shoals.

The level of difficulty as well as the need for excellentt buoyancy control when in the water has resulted in the site receiving a SINKHOLE award.

Members will be notified of access arrangements, once all the paper work has been finalised.

BARNOOLUT

The CDAA has had a long association with Barnoolut and it was a delight to meet the new manager, Colin Traeger, and his wife Shirley. The result of the visit will be a tremendous boost to members. Firstly is the acceptance of 1080, Bullocks and Blacks as SINKHOLES in the new system. Secondly, is the removal of the guide system. A map of the property will be made available for divers. Thirdly, was the exploration of new sites on the property. A working party (see Research Report) has been set up to sketch the caves and to water and soil test the sites (necessary due to the historical use of the sites).

Members are reminded that until they obtain the sinkhole cards, the current access still applies.

MISSING

Yellow painted cylinder, Serial Number C1707, taken by mistake from Allendale East Store, 28-29th January 1990. Cylinder has orange meshing with a black boot. Latest test date stamp ... 1$\hat{w}$90.

Anyone knowing its wherabouts, please contact: K. Cox, CDAA 1837
Work: (03) 367 4200
Home: (053) 67 3561

TRAINING MANAGER'S REPORT

by Tony Richardson

Cross Over Seminars

Highly successful cross over seminars were recently held for Cat. 2, 3 & 4 divers in both Adelaide and Melbourne.

Approximately 180 members attended these seminars. Feedback on these seminars has been very positive. I personally would appreciate any feedback – positive or negative – as the material presented in these seminars will be a component of the new training courses at the various levels – Sinkhole, Cave and Penetration.

Thanks to all examiners who ran these events, and a special thanks to Glenn Harrison who co-ordinated the Adelaide seminar. Thanks must also go to the 180 members who attended.

Dates for the next seminars are listed in the "Diver's Diary".

Category 4 Phase II Cross Over

There has been some misinformation circulating about this aspect of the cross over program. I intend to set the record straight here.

The research project in Tank Cave has been employing significantly different cave diving techniques to what most members are used to. Other Category 4 caves currently being researched will probably also utilize these techniques. The basis of these techniques is the American system of fixed lines, line arrows, jump reels, and safety reels.

The Phase II Practical Cross Over Seminar is purely a practical training session allowing members to gain experience in these techniques under the guidance of those experienced in their use. It is not a test. It also allows those Cat. 4 divers with little experience in twin tanks the opportunity to learn to set their gear up correctly.

To successfully and safely dive Tank Cave and other sites set with fixed line, it is imperative that Cat. 4 members be familiar with fixed line techniques.

Phase II Cross Over Seminars will be conducted in sites such as West Lakes (Adelaide) and Goulden's Sinkhole. (If any Victorian members know of a suitable site close to Melbourne, please let me know.) Dates will appear in the next Guidelines.

New Course Outlines

These are close to completion and trials should begin soon. Access still needs to be finalised with landowners to enable sites to be used for training purposes.

Cave Diver Courses (Cat. 3 under the old system)

I have had a number of people already contact me with a view to doing this course. If there are any other members who are interested, please give me a call. It is envisaged these will be run initially with about the same regularity as the old Cat. 3 test.

Cross Over in WA, QLD, NSW, TAS. etc.

I have had a few enquiries from members in these states. Please be patient. We haven't forgotten you! Cross over arrangements will be made in due course.

Tony Richardson
Training Manager

STANDARDS DIRECTOR'S REPORT

ESTABLISHMENT OF WESTERN AUSTRALIAN DIVISION

by Ian Lewis

Introduction

The CDAA's members have been diving on the Nullarbor for 15 years now, but the Association has been slow in providing contact and services for our W.A. members. Their major cave diving area is the Nullabor which requires much effor and organisation to reach and to gain the required logged dives for higher qualifications. Our old "Examiniation – Prerequisites" system only accepted Mt. Gambier in-water time. Our new system has finally allowed us to correct this old failure and to assist that State positively and supportively.

Discussions with Landowner:

Six months ago, I advised the Conservation & Land Management Western Australia ("C.A.L.M.") of our national restructure aims. Their Regional Manager for the Nullarbor, Dr. John Watson, is considering our proposal standards and how they relate to cave diving on the Nullarbor. C.A.L.M. is carefully assembling their list of requirements for all groups who intend diving out there, and these details are fairly close to being formalised. CDAA Examiner in Perth, Hugh Morrison, recently established formal contact with C.A.L.M. for us and arranged for a special group of WA cave divers of different levels to visit the Nullarbor for further training and qualifications out there.

Composition of WA Training Group:

To make sure all arrangements were satisfactory, this special qualifications trip had C.A.L.M. approval and National CDAA Directorate backing. It was staffed and run by the WA Examiner, the Standards Director (myself) and three other WA cave divers who possess Scuba Instructor ratings. Participants ranged from Category 1 to Category 3 divers, plus Cave Diver Instructor Trainees.

Objectives of the Operation:

My role on this trip was multi-faceted. My objectives were:

1. To assess the suitability of training cave divers in the Nullarbor.
2. To oversee the training of all 3 groups – Cat. 1 to 3.
3. To upgrade all 3 groups to "Cavern/Sinkhole/Cave Divers".
4. To update the WA Examiner on our new training and crossover techniques..
5. To assess the skills of the Trainee Cave Diving Instructors and make recommendations to the Directorate.
6. To explain to all members about how the CDAA operates in other States and the reasons for our rules, etc.
7. To report all this to all of you! Phew!

How it was all done:

We based the whole group at Weebubbie for the first 6 days. Before arriving all had been trained and tested to Cat. 1 (old system) or Cat. 2 in Perth and had done several deep and shallow/silty freshwater dam dives. All dive groups commenced dive skills assessment in Weebubbie LAKE only (not under rock). Instructors trained and assessed candidates under Examiner supervision. I ran a "Cave Diver" prototype course over 4 days with a Cat. 2 group instead of a standard "Cat. 3" test. (The format had been worked out with Barrie Heard, myself, Scott Carpenter and Tony Richardson before I left.) Hugh Morrison and Simon Jones then repeated the format with a second group (all divers had been Cat. 2 for 2 years or more). For Sinkhole Divers, progressive dives were logged in Weebubbie incorporating appropriate skills – dive planning, equipment use and assembly, line work, octopus use, etc. and, for the "Cave Divers", dry land drills, fixed line following, line laying, restrictions, with octopus gear and self-led dives. These latter groups completed multiple tank dives in the Cocklebiddy Lake and first tunnel later in the trip using doubles or triples, appropriate for such conditions.

The Outcome:

The WA dives proved to be the equal of any courses the CDAA run in the Eastern States. Indeed, where we only include one or two 10-metre ladder climbs, the WA people from "Cavern" level up had to set up lowering apparatus, run compressors and transport tanks at least twice a day down 100 metres to the lake and up again. With their Crossover, they also learnt about the Mt. Gambier area in theory and with slides, so they are aware of more than one region – something Mt. Gambier courses do not yet contain. Hugh now is as fully briefed as all Eastern States Examiners. 7 "Cave Divers" qualified, 8 "Sinkhole Divers" and 1 "Cavern Diver", plus Simon Jones met the required dives to apply for "Penetration Diver". Without doubt, the use of Weebubbie and Cocklebiddy in these supervised activities has provided a first-class training and experience venue for such divers, and the CDAA will be looking to run at least one such event there every year.

The future for West Australian Members:

There has been about 20-25 WA CDAA members over the last decade or more, who have had little contact from the CDAA other than Guidelines. Allowing for a few non-renewals, that number is now almost doubled, and they now have a thorough training sequence available to them, with enough potential Instructors to allow them to get on with the job, plus accredited freshwater sites near Perth, and the latest CDAA update information. The CDAA and C.A.L.M. are now finalising access requirements applicable to all visitors to the Nullarbor and these will be published widely once they are available and new system ratings for the Nullarbor Dives are negotiated. This should be in print by next Guidelines.

In conclusion, thanks to Hugh for his organizational efforts, to C.A.L.M. for their co-operation, and the CDAA Directorate for their backing. In all my years with the CDAA, this on-site training has been one of the best possible qualifying technique we have devised.

Ian Lewis
Director of Standards

South East Service's "Survey"

Over the next month, please give the following questions some thought.

How often do you get to the South East?

Where do you stay?

Where do you eat?

What tourist facilities do you use?

Where do you get petrol, etc.?

What sort of money value do you put into the area per year?

A phone survey will be conducted soon. We urge you to co-operate – it will assist in future negotiations, both in the South East and in other States.

COMPETITION

UNDERWATER SPORTS DIVING CENTRE

proudly presents the inaugural

CDAA "Get Wet" competition.

Richard and Dusan have donated a great prize – an Underwater Kinetics UK600 torch *valued at over $150*

To win this prize, simply answer the following questions:–

1. What is the speedo reading on the Morris 1100 in Baby Blue?

2. What does one of the stickers on the back of the Morris say?

The first correct entry opened will win the prize – so go to it!
Send entries to: CDAA Competition
PO Box 290, North Adelaide 5000
Please include membership no. and phone no.

Entries close September 20 1990, and winner's name will appear in next edition of Guidelines

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MYSTERIES OF THE MOUNT GAMBIER SINKHOLES

by Mia Thurgate

PART ONE: Origins of the Sinkholes

If you hadn't already noticed, diving in Ewens and Piccaninnie Ponds is quite a different experience to diving in, for instance, Little Blue or 1080. The reason for this is that these features evolved in two separate ways. This article aims to explain the origins of our more popular dive sites in Mt. Gambier. As cave divers, it is important to understand something about the geology and hydrology of the South East, because these factors directly influence the biology, depth, viz and even horizontal extent of the sinkholes.

The whole of the South East of South Australia is underlain by a huge deposit of limestone, which is composed of the bones and shells of billions of extinct marine organisms. This limestone has been subjected to a great deal of earth movement and so the rock is highly fractured. The resulting cracks and joints have allowed rainwater to penetrate deep into the limestone. If sufficient carbon dioxide is absorbed by the water, the resulting mixture is capable of chemically altering and then dissolving the limestone. The effect is similar to dissolving an asprin in a glass of water, except that the process is much, much slower. By this means, the many caves and sinkholes of Mt. Gambier were initiated.

Ewens and Piccaninnie Ponds would probably have started as dry landforms which were later flooded as sea levels rose. The method of development is summarised by Figure One. Initially, rainwater seeps into cracks in the limestone, and begins dissolving the surrounding rock (A). One crack develops more quickly than the others (B), and surface waters are channelled into this opening. A void develops around the "master joint", and soon the land surface begins to subside (C). If the master joint becomes blocked with rock and soil, a basin-shaped depression will result (D). If this depression was gradually flooded, and the master joint was intersected by a spring, the result would be Ewens Ponds. If the master joint remained clear of debris, or was later flushed clear by a particularly

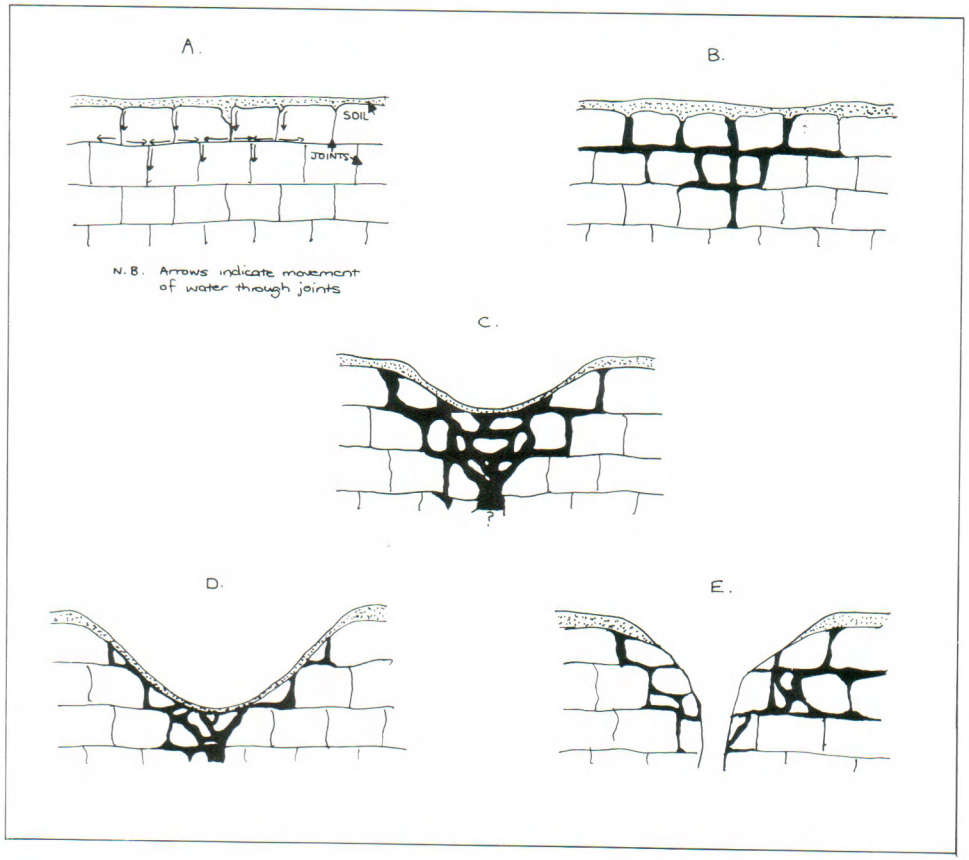

FIGURE ONE

strong spring, a funnel-shaped depression would remain (E). This is how the Chasm of Piccaninnie Ponds was created.

Pics. is a little more complicated than the explanation given above, because it is a combination of at least three types of features which have joined together. The first pond and Turtle Pond are examples of the basin-shaped depression, and the Chasm has already been described as a funnel. The Cathedral, and in fact most of the caves of Pics. and Ewens, are the result of both moving water and chemical processes. While solution along may have eventually formed these caves, there is no doubt the presence of springs (and thus fast-flowing water) helped to mechanically sculpt the rock surface, and so speed up the process. Pics. and Ewens can best be described therefore as (surface) spring lakes.

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The evolution of the vertical-walled sinkholes was far more dramatic than that of the spring lakes. The origin of the sinkholes (or cenotes) can be found beneath the ground surface, when a small void was dissolved in the limestone (Figure Two, A). This void widened until it reached a point where the roof became unstable and collapsed (B). At the same time, it is possible that surface development was taking place, and a master joint was being created. If this process continued, eventually the underground void and the surface master joint may intersect (C), which is how the Shaft was formed. Irrespective of there being any surface development, it is easy to see that with continued undermining and collapse of the roof, an opening to the surface will eventuate (D). The rubble piles at the bottom of these sinkholes provide strong evidence that large-scale collapse was responsible for their creation. The lack of such debris in Pics. and Ewens similarly suggests little if any collapse was involved.

So how does all this effect our diving? As originally subsurface features, the sinkholes or cenotes are naturally deeper than the spring lakes on average, and the potential for both vertical and horizontal penetration of considerable distances is great. The steep walls prevent the establishment of extensive plant communities (except for algae), so the spectacular underwater gardens of the spring lakes are absent from the cenotes.

The water exposed in the cenotes is slow-moving groundwater (as opposed to spring water), which has a tendancy to form layers of different temperatures, particularly in summer. The warmer, uppermost layers of water support an abundant community of tiny animals and plants called plankton. The soupy green colour of this water, and the poor viz, is thus caused by living creatures. This does not tend to happen in the spring lakes where the waters are well-mixed and quite "fresh". (More about this in the next issue.)

One moral that can be drawn from this story is that diving (in the cenotes especially) is best during the winter, when the plankton dies off, and the distinct thermoclines have disappeared. Very comforting news, huh?

Next issue: Exploring the plant life. G

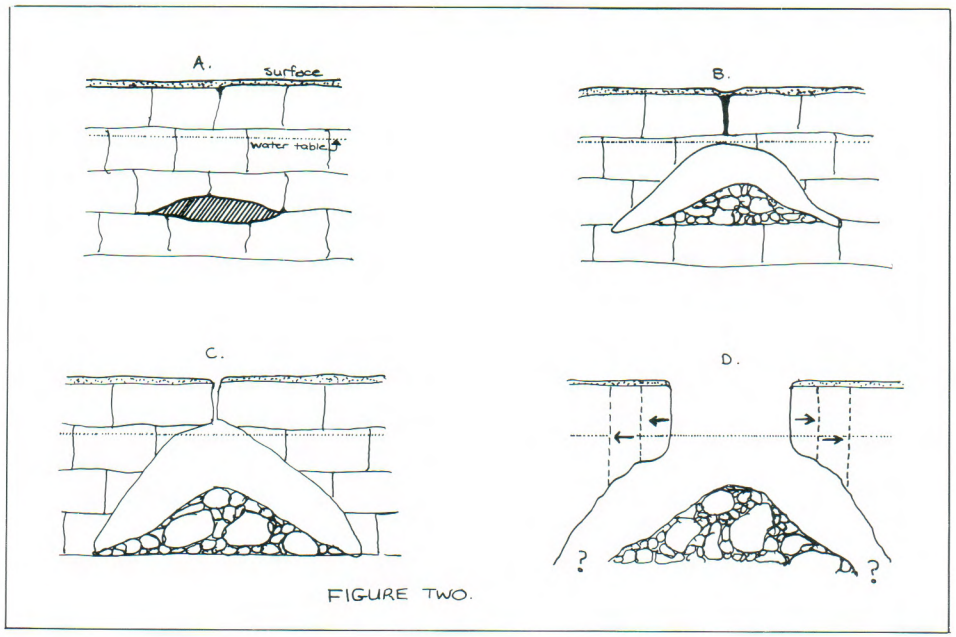


FIGURE TWO.

BOOK REVIEW

by Mike Vize, CDAA 605

DEEP INTO BLUE HOLES
by Rob Palmer
Published by Unwin Hyman Ltd. 1989

For those of us afflicted with the bug of Cave Diving, few books are available to read about the sport. So it was a pleasant surprise to see "Deep into Blue Holes" while browsing in a book store recently.

The Bahamas are well known by cave divers for the Blue Holes and to a lesser extent for the many other caves & cenotes in the region. "Blue Holes" is the story of a number of expeditions to the region by Rob Palmer and others to systematically explore, study and film some of the major caves.

The book starts with a history of cave diving in the Bahamas, by George Benjamin in the 1960's and 1970's. In 1981, Palmer took over and led a number of trips, and some of the dives and successes are described in the early chapters. The most notable dive being "Conch Sound" where the team achieved a 1140 metre (3800 feet) penetration attaining a depth of up to 33 metres (110 feet).

Most of the book is dedicated to a major expedition to Andros in 1987 in which many inland holes were explored. A major undertaking with a large team of divers, scientists and film crew.

In this expedition many caves were explored, caves with names like "Stargate", "Avalon", "Elvenhome", "El Dorado", "Sanctuary" and others. Some of the holes were explored to depths of up to 96 metres (320 feet) utilizing mixed gas rebreathing systems, and the maps and descriptions of these caves with their decorated passages and chambers, fire the imagination and makes any cave diver envious.

Many diving books are too general, being written for non divers. "Blue Holes", however, gives good descriptions of the equipment and techniques, sufficient to keep the cave diver interested, but without becoming a technical handbook. Most of the text keeps to the point and gives good descriptions of many individual cave dives.

"Deep into Blue Holes" is a well written book and is a worthwhile addition to my bookshelf.

BOOK REVIEW

by Ian Lewis

RESEARCH BOOK FOR CAVE DIVERS
by Peter Horne

I am absolutely wrapped to have this book on the desk in front of me! It is a great thing to see our own Australian divers developing new techniques and making this knowledge available to other cave divers who can in turn become involved. Peter has called on years of experience and covers the whole spectrum of research.

1. Getting a Research Plan going.
2. Different activities – mapping, water samples, biological work, geology, bone recovery, environmental matters.
3. Details of each activity including recording styles.
4. Many diagrams and photos to illustrate techniques.
5. A lengthy reference list on Cave Diving research papers (but it should have been alphabetical).
6. A lot of good explanation and background.

All this is presented in a writing style very characteristic of this particular author, with his sense of humour woven throughout a set of serious topics. His cartoon of Research Diver nailed to the cave floor under the weight of a bag of research ironmongery typifies his enthusiasm. We have all needed such a book for years, and it definitely has an overseas market which should be actively encouraged and promoted – no other such book exists. Even if you never research, the contents are definitely worth having on your shelf – they are the accumulation of years of hard and patient effort. Congratulations Peter.

Ed Note: The Research Handbook is now available direct from Peter Horne for $17 (incl. postage). Send cheque to Peter at 3/9 Muriel Ave., Somerton Park, S.A. 5044. Telephone: (08) 295 6031.

THE SHAFT – 5L158

The Shaft has now been accepted into the new Sinkhole category. After a long discussion with Mrs. Ashby re access, she informed us that she wished to stay with the current guides and that she would respect their opinion on the diver standards they require as group leaders.

The Directorate has, consequently, asked the guides for a list of experience, skills and equipment, in conjunction with the Sinkhole award, they would require before leading a group of divers into the sites. Until people receive their Sinkhole cards, the current access arrangements remain.

General requirements, equipment and pre-requisites as set out at a meeting of the guides on the 2nd June 1990.

General Requirements

All members of the diving party are required to:–

a) be a current financial member of the Cave Divers Association of Australia (Inc.) or hold a visitors "special permit" as issued by the C.D.A.A. to suitably qualified international visitors.

b) nominate a dive leader who is responsible for the planning of all diving activities and to co-ordinate all diving arrangements with the guide (NOT DIRECTLY WITH THE LANDOWNER).

c) thoroughly read and sign all necessary forms and agreements as required so as to indemnify the Landowners and the Guide against all possible forms of legal or other undesirable action which may otherwise be initiated by divers, their friends or acquaintances, relatives or others in the event of injury, loss of equipment or fatal accident occuring during the course of the party's diving activities;

d) be equipped as described below to ensure that every reasonable effort has been made to minimize the risks which are inherent in such cave diving activities;

e) ensure that they DO NOT EXCEED A DEPTH OF 40 METRES whilst diving in the cave, and;

f) follow the directions given by the guide.

Equipment

All members of the diving party must wear and be proficient in the use of the following equipment:–

a) All standard cave diving gear as used for deep diving;

b) Minimum one main and two back-up torches;

c) Back-mounted twin tanks of equal capacity with the minimum combined capacity of 90 cubic feet. Each tank is to be independently set up with its own regulator comprising of a first stage, second stage and contents gauge. No octopus regulator or unused scuba feed hoses are to be left on either regulator.
NOTE: Both second stage regulators are to be easily accessible by the diver whilst diving, e.g. both regulators on neck straps NOT in vest pockets or dangling free, and;

d) In addition, a spare tank and regulator supplied by the group will be required for use as an emergency/decompression tank.

Pre-requisites

In the new categorization system, the Shaft will be rated at Sinkhole level. Members wishing to dive there will be required to produce evidence that they have achieved a reasonable level of competance in cave diving. The minimum diving done in the prior 24 months will be as follows:–

20 dives at the minimum of Sinkhole level e.g. Bullocks, Ten-Eighty, Blacks, Ela Elap, One Tree, Pic's. Of these 20 dives, 10 dives to a depth of 36 metres and 5 dives using twin tanks. Guides also have the option of requesting a "check-out dive" at an alternate location if they feel it necessary.

Summary

These recommendations were made by the guides to the Directorate. Remember, guides are volunteers and not paid employees. Their time and effort is the only thing that keeps the Shaft open. Please dive safely and within your own limitations and don't let dive "buddies" push you into going deeper or staying down longer than you want to. If everything runs smoothly and no problems arise, then hopefully this magnificent hole will remain open to be enjoyed by many in years to come.

1990/91 SHAFT ACCESS ARRANGEMENTS

Due to an unsatisfactory response to the access arrangements published early in 1989, it was felt it was necessary to alter them slightly.

There now will be only a roster of dates – one weekend per month as per usual. However, it will now be up to the dive leader to organise a guide who is available for the weekend they wish to dive from the list of guides below.

It is recommended that you start to organise a guide at least 4-6 weeks in advance in case you have trouble finding an available guide.

It must be stressed that it does not matter if you do not know the guide personally. If you fulfill the requirements as listed above and you wish to dive the Shaft, then start phoning the list of guides provided.

1990/91 Shaft Guides

Tony Carlisle	36a Willunga St., Eden Hills, S.A. 5050
Ron Allum	(02) 534 6615
Paul Arbon	(08) 265 2098
Chris Brown	617 Portrush Rd., Glen Osmond, SA 5064 (08) 79 1445
Phil Prust	(08) 370 6000
Peter Horne	(08) 295 6031
Peter Stace	(085) 82 2426
Peter Rogers	(03) 527 7969

Rostered dates for Shaft dives

1990	1991
July 14 & 15	January 12 & 13
August 11 & 12	February 9 & 10
September 8 & 9	March 9 & 10
October 13 & 14	April 13 & 14
November 10 & 11	May 11 & 12
December 8 & 9	June 8 & 9

CAVE DIVERS ASSOCIATION OF AUSTRALIA

(INCORPORATED IN SOUTH AUSTRALIA)

Landowner/Contact Name & Address

_____

_____

_____

_____

Group Contact: _____

Address: _____

_____

_____

Phone: (h) ( ) _____

(w) ( ) _____

Dear _____

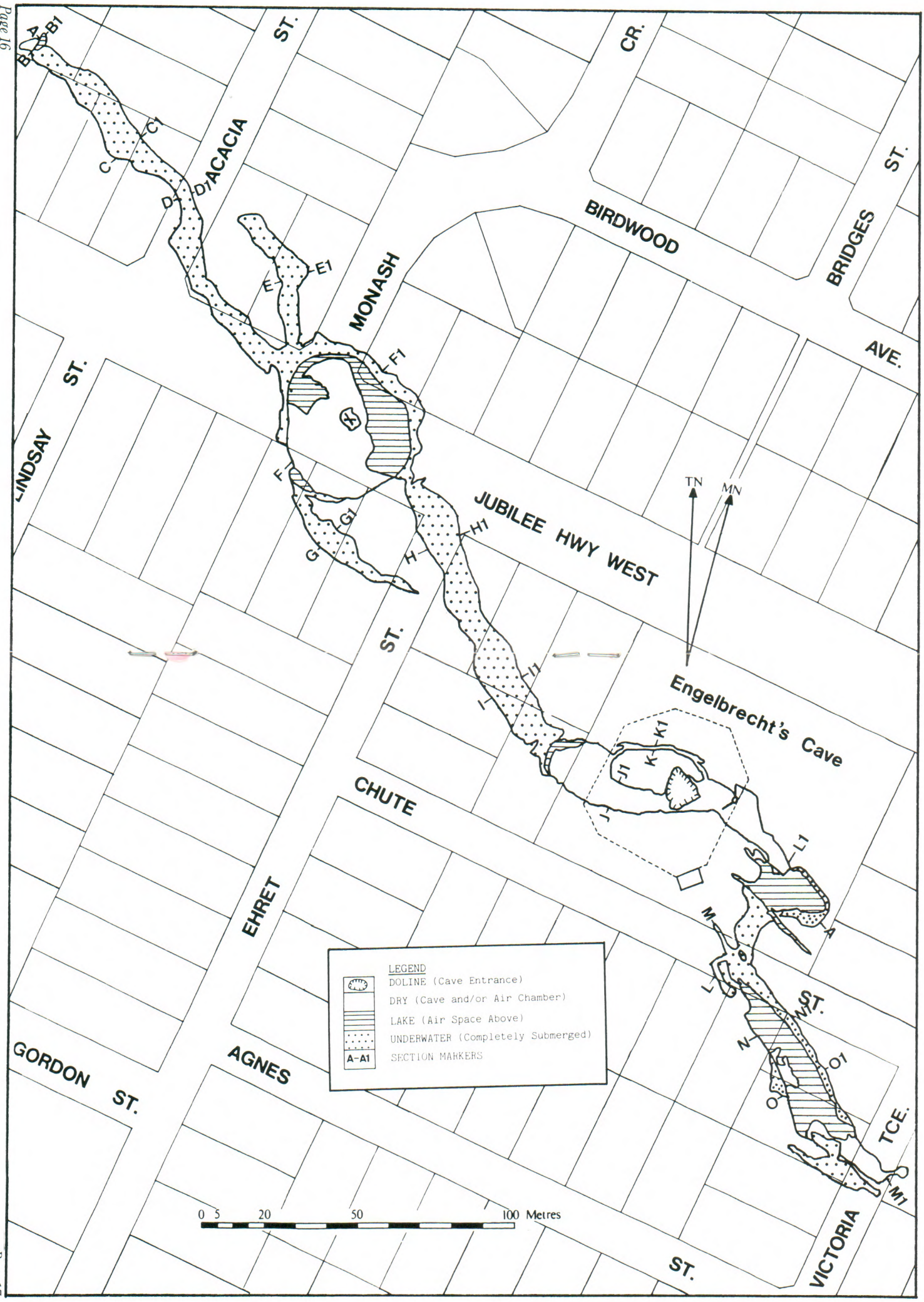
I write to ask permission to enter _____ property/cave for the following persons on the date and times indicated below. Please find enclosed a stamped, self-addressed envelope for your reply.

Members of the Group:

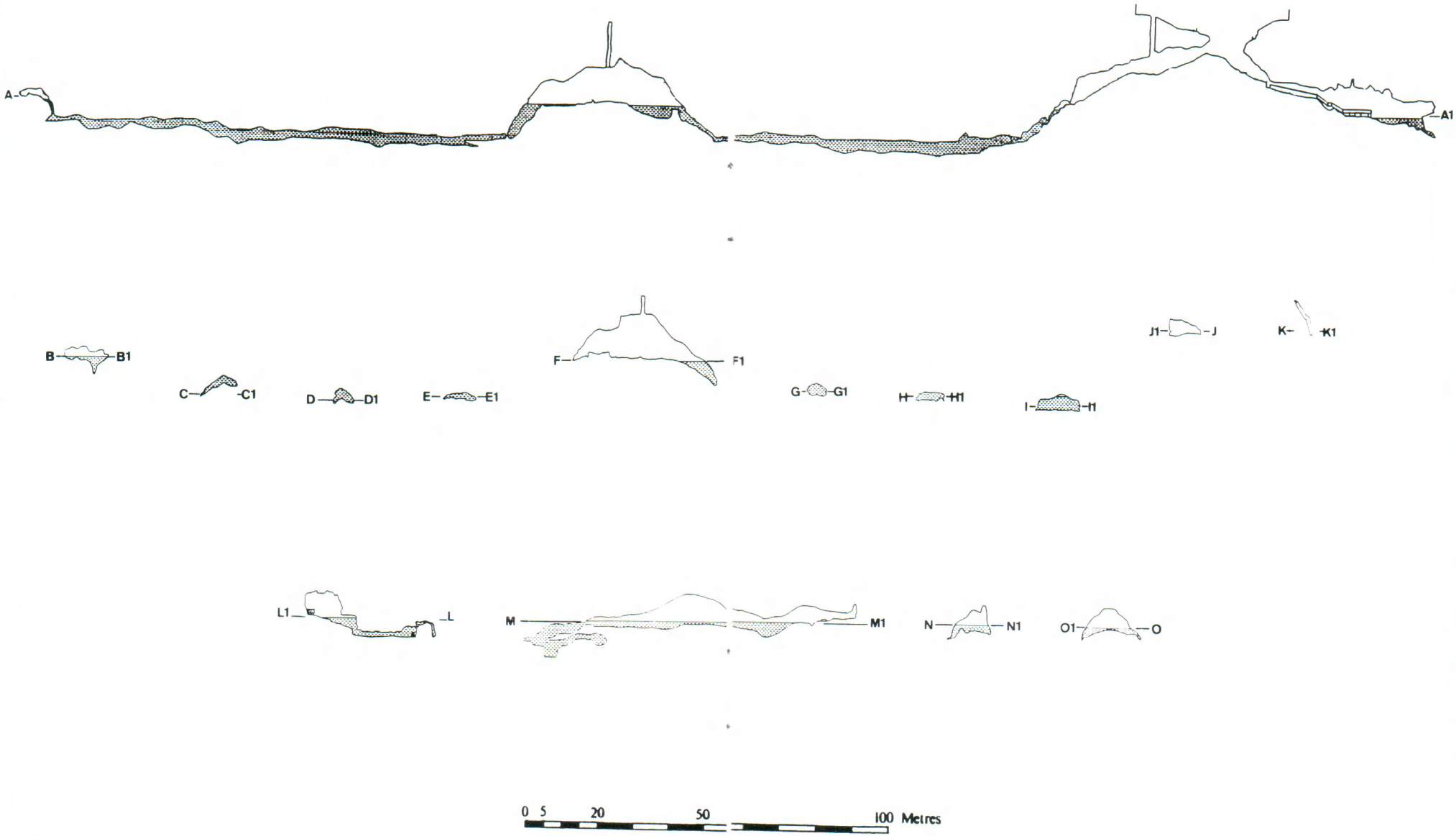
NAME	CDAA No.	CDAA Certification Level Held

DATE	TIME	LOCATION (in order of preference)

Signed: _____ Date: _____


ACACIA ST.
CR.
BIRDWOOD
BRIDGES ST.
AVE.
MONASH
LINDSAY ST.
JUBILEE HWY WEST
TN
MN
ST.
Engelbrecht's Cave
CHUTE
EHRET
GORDON ST.
AGNES
ST.
VICTORIA TCE.
LEGEND
DOLINE (Cave Entrance)
DRY (Cave and/or Air Chamber)
LAKE (Air Space Above)
UNDERWATER (Completely Submerged)
A-A1
SECTION MARKERS
0 5 20 50 100 Metres

Engelbrecht's Cave



1990 PHOTOGRAPHIC COMPETITION

Yes, it's on again.

The Annual (?) CDAA photo competition.

Entries are in 3 categories:
1. OPEN
2. CAVERN/SINKHOLE ONLY
3. ABOVE WATER ONLY

1ST Prize
Cressi Faro underwater torch (R.R.P. $199)

Winner will be decided by Members' vote at AGM in September/October 1990.

Send all entries to 1990 PHOTOGRAPHIC COMPETITION
P.O. BOX 290, NORTH ADELAIDE, S.A. 5006

CLOSING DATE: 1st SEPTEMBER, 1990

MAPPING AND RESEARCH NEWS

5L230 – TANK CAVE

The mapping of Tank Cave has been continuing at a steady pace with some 5,000m of survey line now laid.

Recently a well known and respected American cave diver, Jeff Bozanic, was in Australia and during his visit to Mt Gambier, I invited him to join the team and give me a report on fixed line laying. His report has now been received with recommendations on how best to lay the fixed lines in Tank Cave for use by members when it is opened.

Most members would not be aware that the property on which Tank Cave is situated has recently been sold to Mr. Reg Jones. Final formal access agreements are now being negotiated between Mr Jones' Solicitors and our Solicitors. In the interim period it has been decided to close the cave until the final access agreements are signed.

I will keep members informed of developments.

5L250 – IDDLEBIDDY CAVE

The cave has now been officially named "Iddlebiddy" and has been entered in the Cave Exploration Group of South Australia records.

Iddlebiddy cave is a very significant find as there is a large amount of exposed bone material. One of the original finds were small fragments of a cranium of a small child which was originally presumed to be of recent origin – this involved both the South Australian Coroner and the Aboriginal Heritage Department of South Australia. It has now been identified as a child about four, of Aboriginal decent and probably a few hundred years old. The actual age of the bones may never be really known.

Large clay blocks abound in the cave at a depth of approximately 15m and will hopefully allow us to unlock the secrets of how and when the caves in Mt Gambier were formed.

At this time approximately 70% of the cave has been mapped. It is envisaged that the balance of the map will be completed by the end of June.

5L290 – NEW CAVE NEAR MUD HOLE

In January this year, two members of the Association removed some rocks that were located in the South East end of the Doline. A small lake was uncovered which led to a large water filled chamber not unlike Allendale Sinkhole.

Following a preliminary dive in March the cave was gated and probably will not be opened for some months as the site will need to be investigated first prior to access arrangements being negotiated with Woods and Forests Department.

As the entrance is only wide enough to accommodate one diver and the depth is greater than 20m and total distance is greater than 40m, it has been rated "Penetration".

5L9 – LITTLE BLUE

Work is continuing on the map with many new research members being involved learning that it is not as easy as it looks.

It is hoped that an accurate map will be completed by the end of the year and may be on display in the Car Park for viewing by the many tourists that visit the sinkhole.

Continued overleaf

Continued from previous page

Any member wishing to help with the mapping should contact the Co-ordinator, John Vanderleest.

Members are asked not to disturb any of the survey lines that are in place.

5L11 – ALLENDALE EAST SINKHOLE

Recently it was noted that a section of the rockfill half way down the tunnel had begun to move due to members attempting to dig into new sections by removing rocks up against the roof.

Research Group members completed a survey dive in May to ascertain the hazards and as a result a large section of rockfill has now been collapsed to stabilise the cave.

Members are asked to refrain from digging, as no rockfill is stable – all it takes is for you to move one strategic rock and a large section of rockfill may collapse on top of you as some members recently found out.

ENGELBRECHTS

As notified in the last issue of Guidelines, 2 maps of Engelbrechts have been included in the central pages of this issue. This is the result of many hundreds of man-hours of work by members of the research group.

A 6mm fixed line has now been placed in the entry slot on the western side to help divers negotiate the entry/exit. N.B.: You will still require a guideline once past the slot.

NEW SITES – BARNOOLUT

Recently Peter Horne and myself investigated four water filled sinkholes on Barnoolut with a view to opening these sites for members.

Of the four sites, only one has any potential and a further update will be in the next edition of Guidelines.

Further updates on mapping and research activity will appear in Guidelines each quarter.

Andrew Cox
Manager – Mapping & Research

Coming Next Issue ...

- **Mt. Gambier Biology Part 2**
- **Underwater Photography in Caves by Peter Rogers**
- **Report from Queensland**

ARTICLES FOR GUIDELINES

Many of you must have something interesting to write about – a particular dive or expedition.

We always need more articles, so PLEASE – go to it!

Send articles to:–
The Editor, "Guidelines"
P.O. 290,
North Adelaide, SA 5006.

THE STORY OF PANNIKIN PLAINS CAVE DIVING EXPEDITION – Part 2

by Andrew Wright

We are now ready to go accompanied by world-renowned cameraman and cave diver, Wes Skiles, from Florida. Wes spent many hours underwater filming for the documentary.

Riding our Aqua Zepps like rockets, Chris and I sped past the first familiar 500 metres beyond *Concorde*, under the bright film lights. We were keen to push on, into the virgin passage ahead. Into the abyss.

The exhilaration of reaching the end of the guideline and into the new cave is like a journey into outer space, leaping into a darkness where our strong lights do not reach the walls, where we are floating freely into an alien world. This is the essence of exploration, the thrill of breaking new ground creates a kind of euphoria, a dream.

At the edge of new discovery, Chris tied on the giant spool of measured guideline, to mark our presence for the first time in this underwater tunnel, and headed off. I followed, taking compass bearings and distance readings to chart our progress. The cave continued for another 190 metres through a giant sized room leading into a smaller tunnel, ten metres by five metres, its silty floor littered with a treasure trove of marine fossils.

The tunnel headed north to a boulder choke where our bulky diving equipment thwarted our attempts to push through the rock collapse. By now we were over three kilometres from the entrance lake.

We were at the apparent end of the cave.

Chris tied off the guideline, and we reluctantly turned around, having also reached the mid-point of our theoretical dive plan. Now we had the long trip back to *Concorde Chamber*, a further three hours including our decompression time. Back at *Concorde* we would have to wait another 24 hours before we could make the last dive out through the one kilometres back to the main lake and to the surface to celebrate our achievement. This was the longest deep water cave dive in Australia. Over three kilometres at a depth of up to thirty metres.

On the last day of diving, we began packing up all the gear for the return to the surface. Thirteen people were down inside the cave, while Vicky Bonwick and I were near the doline. The last day of filming had been a day without incident, except for the build up of storm clouds to the North West.

At 4.00pm on December 2, 1988, a massive purple storm cloud was seen approaching the area. Meteorologists have since identified the storm cell as a rare phenomenon, a Rotating Pedistal Cloud that brought with it winds with the strength to bend 80mm steel sign posts and uproot trees. All but two of our twelve tents were demolished. One tent ended up approximately 800 metres from where it originally stood. The first ten minutes saw 100 to 150mm of rain dumped onto the Plains with an additional 150mm or more over the next 50 minutes. The cyclonic storm was very localised, for 30 kilometres to the north at Arebidie Station, the rain gauge had only registed 1mm of rain. Hydrologists estimate that 300 million litres of water flowed into the cave over the next five hours.

The force or the water quickly caused an avalanche, which swept down into the cave, trapping 13 team members, with Vicky Bonwick and myself stranded on a ledge for the next three hours.

My first fear was that everybody, including my wife, had been killed or injured. We could hear the cave collapsing below us, violent tremors running through the small ledge on which we crouched. We felt at any time our ledge would fall. I also worried that a huge rock was being loosened at the very top of the doline and would come crashing down causing more havoc.

Liz, who was down below, said later that she and her companions had run for their lives down to the lake after they heard our warnings. When they looked back through the darkness using their cave lamps, they saw an incredible sight.

Water was pouring down into the chamber behind them, bringing a lot of rock with it. Boulders the size of caravans started crashing down. The next minute, the cave started to move, with the entire mid-section, full of giant boulders, collapsing. "We were too fascinated to be frightened," she said. "It was

Continued on Page 29

A brief Summary of the new tanks now available

by John McCormick

As new tanks become available with higher working pressure there are several aspects to consider, when either purchasing or using them. The SCUBA System comprise three important parts. These need to be compatible for the unit to function safely:–

Cylinder
Regulator
Pressure Gauge

Over the past 20 years the cylinders available to us have increased in working pressure from approximately 1800 p.s.i. to 5000 p.s.i. in some cases. The main advantage of this increase in pressure is of course the large volume of air that they hold for the smaller size.

The earlier regulators were generally unbalanced. This was not a big problem up till the higher tank pressures started to appear. One problem was the large variation in the tank pressure from full to empty – this variation could range from 1200 p.s.i. to 4400 p.s.i. This meant a large variation in the line pressure and hence a variation in the inhalation effort.

The balanced regulators of today will generally handle the range in the higher tank pressures without too many problems. However there is a potential problem with the connection between the tank and regulator, when we increase the tank pressure. We must make sure that the connection will handle the increased pressure and not continually blow "O" rings or, worse, break the yoke.

We have been using the "yoke" type regulator connectors since the sport was introduced in Australia. However most of Europe have been using the "DIN" type regulator connectors.

The standard yoke connection has a few limitations we need to consider when we increase the tank pressures.

A large number of yokes are not rated to operate above 3000 p.s.i. (even some regulators may not be built to operate at these higher tank pressures – you would need to check with the manufacturers).

When regulators and valves are manufactured they, like most items, are designed within certain tolerances so as to be compatible with other systems. If we look at the yoke system there are several important factors to consider (see figure 1).

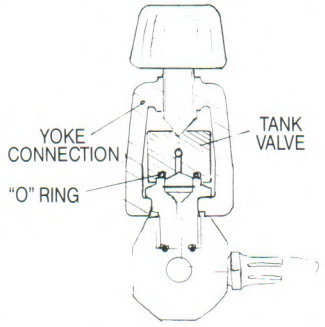


Fig. 1 The standard yoke connection

The most important consideration is a secure air tight connection as this can only be obtained when certain things take place. The alignment of the yoke screw with the regulator spigot, the regulator spigot and the valve sealing chamber with the nipple in the back of the valve. Under normal circumstances this takes place each time we connect the regulator on to the tank valve however if the regulator is damaged in any way as from dropping or knocking, then the likelihood of everything lining up is slight.

When we look at the DIN fitting (see figure 2) we can see a more secure connection, true everything still needs to line up but the chain of knocking it and damaging it is far less then with the yoke connection. The thread holds and locates the regulator in the valve.

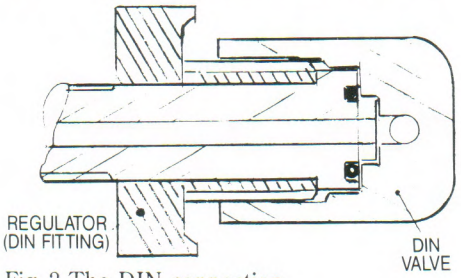


Fig. 2 The DIN connection

When it comes to cave diving as well as wreck diving or any type of dive where we could knock our valve assembly especially with high tank pressures in them, we would have to seriously consider the DIN fittings.

A large number of regulators can be changed over to a DIN connection. There is one more consideration and that is there are two commonly used DIN valve connectors in the SCUBA industry – for 200 bar (2900 p.s.i.) and 300 bar (4351 p.s.i.), respectively. These two types of connectors are similar in appearance, but there is a deliberate design incompatibility between them for obvious reasons. A regulator fitted with a 300 bar connection will fit both a 200 bar and a 300 bar valve. Conversly, a regulator that is fitted with a 200 bar connector will only fit a 200 bar valve because it has a shorter thread length. If a 200 bar connector is screwed into a 300 bar valve, it is not possible to obtain an air tight connection and the regulator and valve will leak air.

When choosing a pressure gauge consideration should be given to the range of gauge. Gauges are designed to handle a certain range in pressure. It's no use using a gauge designed to handle 10,000 p.s.i. when the maximum working pressure may be as low as 500 p.s.i. or using a gauge designed to handle 3000 p.s.i. when using 3500 p.s.i. Normally the maximum figure on the scale is not the designed operated pressure. The working pressure of the gauge is usually approximately 2/3 the maximum reading on the scale.

Brand	Fill Press.	T/W	Diam.	Height	Capacity	St'd Valve	Material
CIG	24 MPA	11.7kgs	185mm	502mm	65 cu.ft.	yoke	aluminium
	24 MPA	12.9kgs	185mm	562mm	75 cu.ft.	yoke	aluminium
	24 MPA	15.3kgs	185mm	682mm	95 cu.ft.	yoke	aluminium
BOS	26 MPA	13.4kgs	170mm	600mm	92 cu.ft.	yoke	steel
	26 MPA	10.9kgs	170mm	490mm	72 cu.ft.	yoke	steel
GENESIS	24 MPA	12.4kgs	184mm	502mm	80 cu.ft.	DIN	steel
	24 MPA	14.8kgs	184mm	584mm	100 cu.ft.	DIN	steel
	24 MPA	16.4 kgs	184mm	698mm	120 cu.ft.	DIN	steel

JUMP REELS

by Christopher Brown
CDAA 708

DEFINITION

A small reel approximately 50-60mm in diametre holding 20 metres of 1mm or 8 gauge nylon builders line. The reel has a small clip attached to it and this is clipped to your gear out of the way but easily accessible when needed.

They are a "must" when diving in caves that have fixed lines in them such as Tank Cave (5L230) and normally each diver would carry 2 or 3 of these reels.

USE

Jump Reels have 2 main uses:

1. As a safety backup reel

The reel can be used in an emergency such as a line break or used to replace a badly worn section of a fixed line.

If you lose contact with the main line, the jump reel can be used to help organize an efficient search for it. All you have to do is secure the free end of the jump reel line to a solid object (e.g. dead buddy!) and then a systematic search pattern can be made using the jump reel line. If you can not find any thing to tie off to, remove one of your smallest lead weights, tie the line to the weight and the drop weight onto the cave floor. By tying off, this gives you a reference point of where you have started the search and gives you a lot better chance of getting out of the cave alive than just fumbling blindly around the cave in an unco-ordinated manner until your air runs out or if by luck you find the main line you might have taken to long and used to much of your air supply to exit the cave successfully.

An interesting point to debate on the above mentioned problem is, is it better to be in a compromising position with a buddy or is it better to dive solo without a buddy to get in the way. What are other divers thoughts?

2. To be used as a Jump Reel

One of the techniques for laying fixed lines in caves is to have a continuous line in the main passage of the cave system and all side passages to have lines starting approximately 2-6 metres from the main fixed line.

When a side passage is to be dived, the gap between the main line and the side passage line is breached by using the jump reel. This is referred to as doing a "jump", hence the name jump reel.

When doing a jump, the jump reel line is tied securely to the main line and then a direction arrow or a clothes peg (Americans refer to them as clothes pins) is placed on the cave entrance side of the tie off so that when you come back to the main line you know which direction is out of the cave.

In the next issue of Guidelines, I hope to show one method of cheaply making your own jump reels.

For those members who are hoping to dive "Tank Cave" in the not-to-distant future, it will be manditory to carry at least one small reel or jump reel. **G**

Minister for Employment, Training and Industrial Relations.

G.P.O. Box 69, Brisbane 4001, Queensland
Telephone: (07) 227 4900 Facsimile: (07) 227 5952

24 APR 1990

Mr L Mitchell
National Director
Cave Divers Association
of Australia
PO Box 2161 T
MELBOURNE VIC 3001

Dear Mr Mitchell,

I refer again to your letter of 26 February 1990 seeking a meeting with me to discuss the question of safe and practical cave diving controls and standards in Queensland.

I understand that in response to a similar letter you directed to the Diving Inspector, Division of Accident Prevention of my Department, the Director of the Division replied to you on 9 March agreeing to a meeting with representatives of your Association.

I am confident the planned meeting will be of benefit to both your Association and my Department.

Might I add that I am impressed with your Association's involvement in diving health and safety, particularly the training and certification standards utilised, and commend your Association for its excellent work in this area.

Yours sincerely

N G WARBURTON
Minister for Employment, Training and Industrial Relations

REPORT ON THE CDAA'S WATER QUALITY ASSESSMENT DIRECTORATE'S OPERATIONS

by Peter Horne, Project Manager

The "Water Quality Assessment Directorate" was created in June 1989, after serious public concerns were raised about possible water-table contamination in the Mount Gambier area by companies such as "G.T. Chemicals" which handled extremely toxic materials which could permanently poison the water in our diving sinkholes.

Learning of the major political in-fighting reported about this plant by the South Australian media and other alleged copper chromium arsenate (CCA) "dumping" sites, the CDAA felt that it should instigate its own assessment project so that there was no doubt in our minds regarding the safety of entering waterfilled caves. Consequently, an initial financial commitment of $1,000 was allocated towards the study, and a considerable amount of planning went into the first stage of the project to ensure that we got as much value for money as possible.

In view of the extremely sensitive political nature mentioned above, great care was taken to ensure that Government and private landowners' requests for discrete handling of the results were honoured. Consequently, the sampling locations received coded numbers and exact locations and names are not recorded in any official documents.

Working in conjunction with Ian Lewis and Maurice Parry, I drew up a list of some 25 possible pollution sites, and after lengthy discussions with both Engineering and Water Supply Department personnel and scientists from Classic Comlabs (AMDEL) water analysis laboratories, the first series of 9 key samples were collected and bottled in the required manner. Because we were also looking at possible arsenic contamination, some water was "fixed" in a special bottle containing calibrated nitric acid solution, and all samples were delivered to the labs within two days of collection. Bacteriological assessment of each site was not possible because water temperature changes etc. quickly alter the balance of such aquatic biology from day to day – quite apart from the extra expense!

The exact analyses were rather detailed because both a water quality assessment and special heavy-metal tests were done, so they cannot be reproduced easily here (although members with a special interest in these analyses are welcome to contact the Association). Aspects covered included the chemical composition (Cations, Anions, nitrates expressed as NO3 etc), pH, conductivity, dissolved solids, alkalinity and ion balance etc., and only ONE of the nine specimens (from a bore, not a popular diving hole) contained water which could be considered to have been contaminated (and that was only rather high nitrate levels). Therefore, this first part of the study revealed NO major contamination by CCA residues (or other poisons) in the sites chosen to date.

The analyses themselves cost more than $800, and the rest of the money went into the other costs incurred during the project. The cost of each sample was therefore effectively more than $120.

It is hoped that further work (to be undertaken in 1990-91) will be more cost-effective since it appears that some analyses will be done at a far cheaper rate.

Members are invited to contact me if they think that they know of any sinkhole which has been contaminated in any way; while we can't promise that samples will be collected there, at least we will know of other sites of concern and can reassure members as more analyses show that our diving sinkholes do not contain water or sediment which may be hazardous to our health. **G**

Continued from Page 23

simply awesome to see it all happening just 80 metres away."

Then several of the air and oxygen tanks, which had been on their way back to the surface before the storm, came loose and started to crash down the cave to the bottom. This caused the people to dash for cover behind rock slabs, afraid the tanks would explode, like bombs, sending shattered pieces of metal like shrapnel all around the chamber. The sound of flowing water and rockfalls filled the lake chamber for three hours.

Vicky and I watched as the whole shape of the cave changed in front of us. It was like the raging of river rapids. We could hear the cave creaking and groaning, with rocks crashing around. It was deafening. It was an incredible sight. We could not see or hear anything else.

After three hours, Vicky and I ran for the entrance, prussiking through the water that poured over the cave mouth on a rope thrown down by a vigilant and very worried Chris Brown. Up above, we saw the camp had been wrecked. The three team members on the surface who had taken shelter under a table in a tent had been sure they were going to be killed.

The alarm quickly went out to the world. Newspapers, television and radio around the country headlined the story as police and emergency services rushed to the scene.

Then, at eight o'clock that evening, with heavy hearts, we decided to try to make contact with the people trapped below using the special cave radio. This was the normal scheduled time, and imagine my relief to hear that contact had been made and every one was accounted for and no one was injured. They had some food and water to last a few days, and they were in good spirits. The film crew were caught down there with them, and with what equipment had survived, recorded some extraordinary moments during the ordeal.

On the surface, I organised a rescue, in consultation with the police sergeant, George Johansen of the Eucla Police. Co-ordinating our efforts with the radio, we prepared to rescue our trapped team.

The plan was that people from the top and people from down below should both seek possible new paths through the cave in an attempt to make contact. Vicky Bonwick, the third generation in a family of cavers, behaved very bravely through the whole experience, climbing down into the collapsed section of the cave at great risk to herself.

Eventually, people down below, by their own efforts, found new route through the collapsed rocks when one of them, climbing through the rockfall, recognised a rock which previously had marked the end of the way up through the middle patch. They then made contact with Vicky from above, and the long haul home began. Two people came out every half hour, climbing gingerly in case of further collapses. It was very dangerous. It took six hours to get everybody out, thirty hours from the first collapse. Vicky was the last person to emerge from the cave. True to form, she had first waited to ensure everyone else's safety.

It was later estimated that the chance of such a cyclone hitting that site at Pannikin Plains was about once in 10,000 years. The odds of people being there at the time and being caught were much higher. To have them all escape safely was even more extra-ordinary. Imagine the mathematics, the forces, involved. **G**

CDAA CAVE ACCESS

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

CAVE	CAT	OWNER	PERMISSION
Ewens Ponds	Nil	Dept. of Lands PMB 124, Mt. Gambier (087) 24 1598	Groups of 6 or more, phone/mail to Dept. of Lands. Smaller groups, no need. Ponds are closed 1 September – 30 November each year.
Horse & Cart **Tea Tree**	1 1	Mr. Don Telford PO Box 2629, Mt Gambier (087) 38 4003	By phone or mail, 1 week prior.
Little Blue (Baby Blue)	1	Port MacDonnell	Little Blue – permission not required – must carry card.
Allendale	3	Port MacDonnell	Obtain key from Mt. Gambier Tourist Information Centre.
Gouldens **2 Sisters** **Fossil**	1 1 3	Dept. of Lands PMB 124 Mt Gambier (087) 24 1598	Contact Dept. of Lands by phone/mail prior to diving. Stay out of Gouldens when pump is operating.
Ela Elap **One Tree**	2 2	Mr. Peter Norman Private Bag 67, Mt Gambier (087) 38 5287	By phone or drop in before diving. Accommodation also available.
Swim Through	2	Valerie Earl C/– PO Allendale 5291	From lessee, Mr David Easton, 8 Tarandi Road, Mt Gambier (087) 25 0938. Phone/Mail one week prior.

CAVE	CAT	OWNER	PERMISSION
Piccaninnie Ponds	2	NPWS 11 Helen Street, Mt Gambier (087) 35 1171	Permit holders by phone. Be aware of delicate vegetation.
Hells Hole **Pines** **Mud Hole**	2 3 3	Woods & Forests PO Box 162 Mt Gambier (087) 24 2711 Forests Clerk Barry Phelan	Contact Woods & Forests by mail or phone and arrange permit. No diving on total fire ban days.
Black Hole **Ten Eighty** **Bullock Hole**	2 2 3	Mr. Colin Traeger, Manager, Barnoolut Station PO Box 12, Mt Gambier 5290 (087) 26 6215	Contact CDAA Records Officer for diving deed THEN mail Booking Form to Colin Traeger 2 weeks prior, stating names/qual. of all divers, and time slot – 9am or 1pm (weekends), or 8am (weekdays).
Max's Hole	3	Mr. Trevor Edwards PO Box 1319 Mt Gambier (087) 26 8277	Phone or mail 1 week prior to dive.
Shaft	3	Mr & Mrs Ashby	ONLY by contacting designated "guides" who will arrange access. Refer "Guidelines" Issues 36 – July 1990.
Engelbrechts **– East** **– West**	3 4	Mt Gambier Council	Obtain key from Mt Gambier Tourist Information Centre.
Three Sisters	4	Millicent Council	Currently closed until new access arrangements completed.

TRADING POST

DIVING MANUAL Complete U.S. Navy Diving Manual Parts 1 & 2, on air and mixed gas diving. In original folder. Usual price $140 – sell for $100. Tony Davis, CDAA 1187. Phone: (03) 781 3820.

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Adelaide	Sinkhole Cave Penetration (Phase 1)	Sunday 9th September 2-5pm	Clapham Primary School	Richard Megaw (08) 263 3337 4.30pm-8pm
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P.O. Box 1046
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