



C.D.A.A. Newsletter  
**GUIDELINES**

No: 75 - MARCH 2001



**CAVE DIVERS ASSOCIATION OF AUSTRALIA**

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## Editorial

We are currently running short of cover shots and articles.

Anyone that has anything to offer don't hold back, you can fax, post or email to myself or Chris Edwards.

*Glenn O'Connell*  
Editor

## ARTICLES FOR GUIDELINES

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

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

## ADVERTISING RATES

FOR SPACE - APPLY TO THE EDITOR

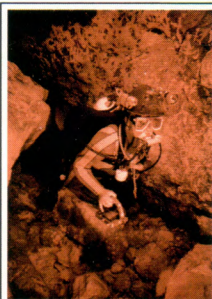
"Guidelines" magazine is circulated to over 1200 members and retail outlets.

Back Page	2 colour	\$350.00
Inside Front Page	Black & White	\$300.00
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Full Page	Black & White	\$250.00
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**Front cover:**

Margy Wyschnja  
Engelbrechts

## CAVE DIVERS ASSOCIATION OF AUSTRALIA

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

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

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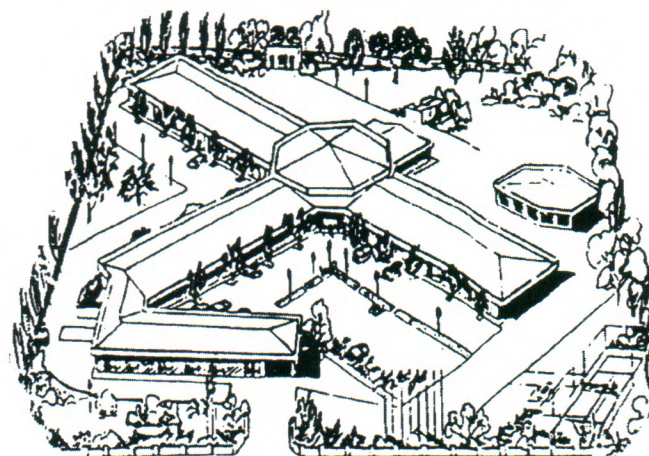
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# Rum Jungle Lake - Information Update

Text and drawings by David Cowan CDAA No. 959.

## INTRODUCTION

Rum Jungle Lake, which is a popular Darwin dive site, joined the CDAA's national network of sites in 1999 to allow better access by NT residents to cave-diving opportunities throughout Australia. The purpose of the following is to update for the benefit of all members some of the information contained in my article entitled Rum Jungle Lake, which was published in Guidelines No. 68 (March 1999).

## UNDERWATER PROFILE

Local divers including myself were never really happy with the underwater profile published in my previous article. This is despite considerable consultation regarding the shape and layout of the site.

After looking at some aerial photographs of open-cut mines on some brochures at the Darwin Region Tourism Association shopfront in Mitchell Street one day during the 1999 Dry Season, I decided that an aerial photograph of the site taken at a late stage in the mine's life would be the best way to get an accurate picture of the shape of the site.

An afternoon's digging at the State (sic) Reference Library of the Northern Territory on a spring tides' Saturday did unearth lots of interesting information, but there were no aerial photographs of the site<sup>1</sup>. However, I did find the following little gem of information<sup>2</sup> - a description of the excavation of the mine.

"The original open-cut design incorporated an overall batter angle of 11/2:1 for the first

50 ft (ie. 15.3 m) from the surface and 1:1 for the remaining 190 ft (ie. 57.9 m) of the excavation. A spiral road approach involving a 30 ft (ie. 9.1 m) road on a gradient of 1 in 15 was included in the design. Whilst this overall batter angle proved satisfactory for half of the perimeter of the cut, the heavily leached chloritic slates comprising the overburden to 100 ft (ie. 30.6 m) in the southern section of the cut proved unstable at this slope, and some batter collapse occurred in which classical 'rotational shear' failure was exhibited. Although the cut was only 100 ft deep at the time of this subsidence the leached slate had very little cohesion and a final batter slope for the first 100 ft of excavation of only 16° was necessary to stabilise the batter in this section."

I used the above information to redraw the plan and longitudinal section of the site - please refer Figures 1 and 2. While the revised drawings are of a relatively low survey and detail quality (possibly ASF Grade 11), I believe that these represent a more accurate depiction of the site. For example, I can now plot the path of most of my dives at the site onto Figure 1 with a reasonable degree of accuracy.

The following limitations should be taken into account when using the revised drawings for diving activities. The drawings should be considered as an approximate depiction only of the hole created by the mining process rather than drawings of the site based on observations and measurements taken at the site. Therefore any features below the water's

surface created by the filling of the site by water in 1963 and subsequent climatic events, and any large artefacts either remaining from the mining process (ie. vehicles, mining plant or any large piles of excavated material left by the mining contractor) or added subsequently are not depicted. For those who like to measure distance underwater by counting their fin strokes, I would recommend that a tolerance of at least plus or minus 10 metres be assumed when using Figure 1 to plan a dive.

## ALTITUDE

I previously advised that the site's surface was reported as being somewhere between 180 and 190 metres above sea level. A number of maps 3 & 4 which I have subsequently consulted, indicate that the site's surface is actually somewhere between 80 and 100 metres above sea level, probably closer to 80 metres.

While the site is not as high as previously advised, the previously advised cautions regarding decompression calculations still apply. In my case, during future dives at the site I will be relying on the design of my dive computer's algorithm to consider altitude in its calculations and will do safety stops in accordance with my estimation of the risk regardless of what the computer recommends.

## THE POSSIBLE IMPACT OF NEW REGIONAL PLANNING PROPOSALS

The following information is provided mainly for the benefit of members living in Darwin. In 1998, the NT Government published a document 4 for public comment with the ultimate purpose of establishing a legislative framework for planning and development control within the region.

This document contained the following proposals that have a direct impact on diving activities at Rum Jungle Lake.

1. A possible tourist road connecting the Litchfield Park Road to the north of the site with the town of Batchelor to the immediate east of the site. It appears that this road would pass between the old tailings mound and the west side of the lake and would follow the alignment of the existing access road.
2. Land to the immediate north and east of the lake would be zoned for 'Rural Living' (ie. housing allotments of 8 hectares minimum size).

Both of these proposals will change the quiet 'backwater' nature, which is presently enjoyed at the site. Benefits will include a more direct and slightly shorter route of access from the south and an improvement of facilities at the site such as additional parking areas, shade structures, barbeques and other niceties of civilisation. The principal disadvantage from a diver's perspective will be the increase of the number of visitors and other users to the site. This may create the situation where conflicts may arise between divers and other users with the ultimate possibility of some restrictions being placed on diving activities.

## REFERENCES & NOTES

1. Aerial photographs of some of the other Rum Jungle mines do exist - a spectacular photograph of the largest mine, White's Open Cut, does appear in a local history and I understand that the same photograph is the feature of the public bar at the Rum Jungle Motor Inn at Batchelor.
2. Barlow, T, 'Australian Mining & Smelting', the proceedings of the 8th



Commonwealth Mining & Metallurgical Conference (published sometime between 1963 and 1972), pages 213 - 214. (Please note that metric equivalents for the imperial measurements have added for the benefit of readers not acquainted with imperial units).

3. "RUM JUNGLE", Northern Territory, 1:50,000 Topographic Survey Map,

Series R722 Sheet 5071 1, Edition 2-AAS

4. The (NT) Department of Lands, Planning & Environment, The Coomalie Planning Scheme - Proposed Coomalie Planning Concepts & Land Use Objectives, September 1998, page 24 & figure 12a.

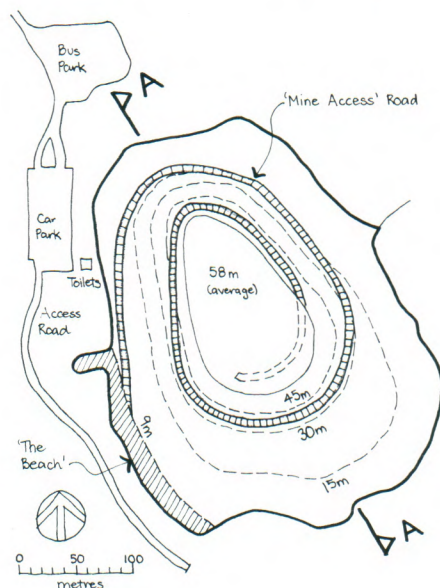


Figure No. 1 - PLAN

Drawn by David Cowan July 1999

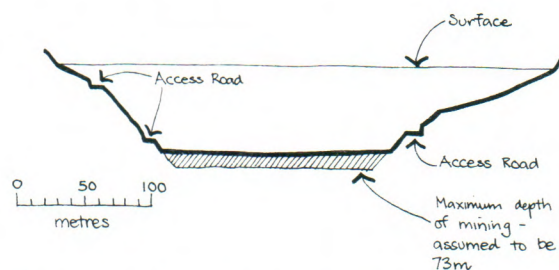


Figure No. 2 - SECTION AA

Drawn by David Cowan, July 1999

# 1998 WEST TIMOR CAVE DIVING TRIP

Text and drawings by David Cowan CDAA No. 959.

## Introduction

West Timor is a destination that should not be missed by cave divers either living in or passing through Darwin. This region has been the subject of two separate articles authored by Barbara Lengs and myself respectively and previously published in Guidelines 1 & 2.

The following article reports on the highlights of a short excursion to Kupang in West Timor, Indonesia was organised in the 4th week of April 1998 for graduates of an IANTD Overhead Environment/Introductory Cave Program conducted by Barrie Heard for Coral Divers of Stuart Park, Darwin.

The party consisted of Barrie Heard (IANTD Technical Instructor), Sasha Muller (Coral Divers), Rodney Lofts, John Storey, Scott Spooner, a CDAA Cave Diver residing in Darwin, and myself.

Three sites were visited - Gua Oehani (translates as the Oehani Cave), Gua Kristal (translates as the Crystal Cave) and Gua Air Hitam (translates as the Black Water Cave).

## Gua Kristal

After a late start due to problems with cylinders on the morning of Thursday, 23/4/98, a series of dives were conducted at this site.

The two attached drawings 3 depict all known features of the cave including those discovered on 23/4/98. Disagreements between various compasses, which arose on that day, have been resolved in the preparation of the attached drawings.

The principal discoveries are summarised as follows: a new tunnel to the Air Chamber, a network of small tunnels radiating out from the Air Chamber, and a side tunnel at the base of the entry lake. Additionally, a small number of clusters of stalactites were observed in parts of the cave immediately above and below the water surface of the lake.

## Gua Air Hitam

This site is located in the Christian university (name of this institution not known at this time) on the eastern outskirts of Kupang.

The site consists of a water-filled cavern located at the bottom of a sinkhole in the University grounds. A large banyan tree dominates the sinkhole. The university currently extracts water from the site for drinking purposes via a pair of pumps housed in small brick buildings daubed with the words 'Air Minum' (ie. 'drinking water'). A series of concrete stairs allows relatively easy access to the water's edge.

An inspection of the site which was carried out immediately after sunset on Thursday,



23/4/98, indicated a site with much potential - very clear water and the jet black darkness existing beyond the limits of torch light.

On the morning of Friday, 24/4/98, after some lengthy negotiations between Sasha and the university's administrator regarding access, an inspection dive carried out by Barrie and Sasha. This dive which attracted a large crowd of spectators from the campus population, revealed a relatively small shallow (8 metre maximum) cavern where the floor and ceiling converged to a gap of about 200 mm height. The gap which was full of crystal clear water, continued beyond the limits of Barrie and Sasha's torches. An adverse feature of this site is the cave ceiling, which appears to consist of a composite layer of soil and small rocks. Those on the surface could see that the constituent materials of this layer were loosened by the action of exhaust gas bubbles passing under this layer on the way to the surface with the result that a constant 'rain' of material fell onto the two divers below!

This site is not recommended as being unsuitable for future diving due to its size, the ceiling conditions and current use as a source of drinking water.

### **Gua Oehani**

This site was briefly visited on the afternoon of Thursday, 23/4/98 during the journey to Gua Kristal. The party returned on the afternoon of Friday, 24/4/98 with objective of diving to the first air chamber.

The dive site is located at the extreme rear left-hand side (when facing the sinkhole) of

a large dry sinkhole, which is shaded, by a number of banyan trees of equally large proportions. Although small in size, another water-filled cavern, which was noticed on the opposite side (ie right hand side), looks promising as a dive site. This cavern has a partially complete infrastructure (ie water pipes on stands) for purpose of extracting water.

The access to the site is generally good with exception to some vertical climbs up and down damp surfaces, low light levels at the water's edge and a considerable numbers of local residents either bathing or doing laundry.

Discarded clothing and miscellaneous rubbish deposited on the bottom of the narrow entry passage provided a convenient anti-silting barrier. After negotiating a tight squeeze, we entered a relatively straight passage with an undulating ceiling and floor. Water clarity was excellent, especially when following Barrie and his Dive-Rite lights! We found the black plastic bags floating in a high part of the tunnel as previously reported by Barbara Lengs1. Both Barrie and Sasha had noticed during the entry procedure that there is a weak flow of water through the cave system. Presumably in times of high flow such as the Wet Season, plastic bags must have been carried from the water's edge down into the cave. Anyway, I think Barbara now owes Barrie and Sasha a bottle of wine! After a 10 minute swim, we arrived at the air chamber. While Barrie retraced the path of previous divers over the rock pile to the next lake and Scott checked unsuccessfully for side passages around the rockpile, the rest of us sat in the

water at the rockpile's edge and admired the surroundings including the ceiling that looked as fresh as the day of collapse.

This was very memorable dive.

### **Some Technical Stuff**

There was agreement between members of the party that future exploration of both Gua Oehani and Gua Kristal will be best done with side-mounted cylinders.

Based on my own observations, I have proposed the following categories for the 3 above-mentioned sites in accordance with the CDAA Category System. These opinions are provided as guidance for future visitors to these sites.

1. Gua Kristal - the site from the water surface up to and including the air chamber should be considered as a 'cave' site while rest of the site from the air chamber onwards should be considered as a 'penetration' site.
2. Gua Air Hitam - although I would not recommend any further diving in this site for the reasons discussed above, this site does fit the CDAA definition of a cavern.
3. Gua Oehani - the entry, which requires single file entry and presumably therefore a self-rescue capacity in case of loss of air supply, makes this a 'penetration' site. Otherwise the rest of the site is 'cave' up to the first air chamber and beyond.

### **Travel to West Timor**

While I know that Darwin residents regularly and safely travel between Darwin and Indonesia via Kupang, I must advise

that the following advice from the Australian Department of Foreign Affairs & Trade website 4 current as of Friday 16 February 2001 must be given priority consideration when planning to travel to West Timor:

"Following attacks against United Nations personnel in Atambua (west Timor) in September 2000, the United Nations decided to temporarily relocate its personnel from west Timor. Australian citizens residing in west Timor are advised to relocate outside west Timor. Australians should also defer all travel to west Timor until further notice."

It is also a good idea to seek the opinion of travel agents based in Darwin, particularly those who organise travel to Indonesia as the security situation in West Timor can and will change quickly. Hopefully, the situation will improve in the near future in order to allow further cave exploration in West Timor.

### **References**

1. "Cave Diving - Indonesian Style" by Barbara Lengs, Guidelines No. 57, March 1996.
2. "New Indonesian Cave Dive" by David Cowan, Guidelines No. 63, December 1997.
3. These drawings included information from field notes prepared by Scott Spooner.
4. <http://www.dfat.gov.au/consular/advice/indonesia.htm>





# REVIEW & PROMOTION FOR EXCELLENT TECHNICAL DIVING BOOK

The following was kindly provided by Richard Taylor

Many of those lucky enough to attend OZTeK2000 in Melbourne and meet Bernie Chowdhury, Publisher of Immersed Magazine, would be aware that he has completed a book detailing the fatal descent of a father and son dive team off New Jersey in 1992. "The Last Dive" has been released and is now available at all good bookstores around Australia.

## REVIEW:

In exploring the origins of Technical Diving diving off New Jersey in the late 1980's and early 1990's, Bernie Chowdhury has confronted one of the most tragic events at the start of the 'Tek Revolution'. Not only are the father & son team of Chris & Chrissy Rouse brought to life during this book, but Bernie opens the door to the psychology and demands of Deep Mixed Gas Wreck Diving & Cave Diving. We are brought face to face with the chilling realities of what drives experienced divers to give their lives for some unfulfilled reason.

"The Last Dive" focuses on the last fatal dive of the Rouse Dive Team as they attempted to identify the wreck of an unknown German U-Boat sunk off the New Jersey coastline in 230 feet of water (70 msw). Enticingly named the 'U-Who' by those seeking to unravel its mysteries the book delves into the nature of the Rouses and the burgeoning Tek Community and culminates in reliving the events of the fateful dive in 1992. We are taken on a roller coaster ride through the highs and lows of the Rouses' entry into Scuba Diving, their development into Cave and Wreck diving and

their personalities that made the early nineties diving such a potentially hazardous environment.

This is a real "Don't put me down" book and one that demands the attention of every Technical, Cave, Wreck or 'Wannabe' diver in Australia. As literary fiction the reader is taken into the minds of the Rouses and inside the often very closed world of those who want to push the limits.

As an instructional tool "The Last Dive" is without comparison, and clearly portrays the inescapable complacency that every diver is confronted by as they gain experience, daring & the desire to go deeper or stay longer.

I cannot recommend "The Last Dive" more so than by quoting the forward by Homer Hickam, Author of New York Times #1 Bestseller "October Sky": "Bernie Chowdhury has written a book that seems to explore diving and the deep, cruel sea; in reality he has written a book about exploring a place even deeper and crueler, the human psyche and our often unfulfilled souls."

"The Last Dive" by Bernie Chowdhury is published by Harper Collins and distributed in Australia by Hodder Headline.

ISBN 0-06-019462-6.

Paperback RRP \$29.95

(Limited Hardbacks are available)

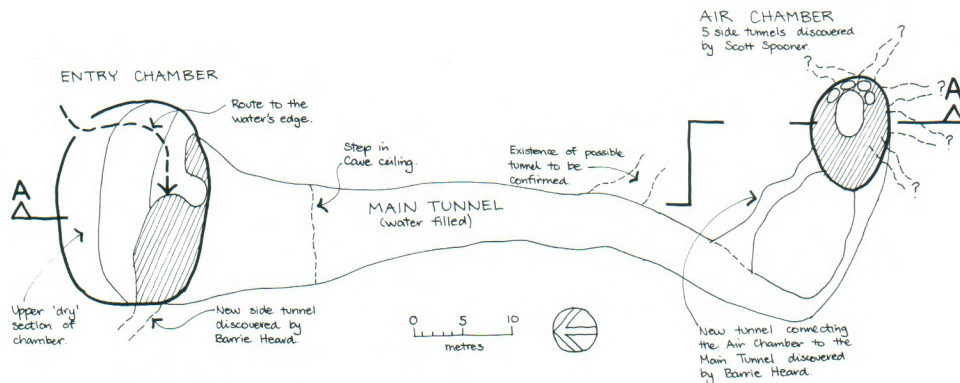


Figure No. 1 - Plan

GUA KRISTAL, BOLOK, WEST TIMOR, INDONESIA  
Drawn by David Cowan, October 1998

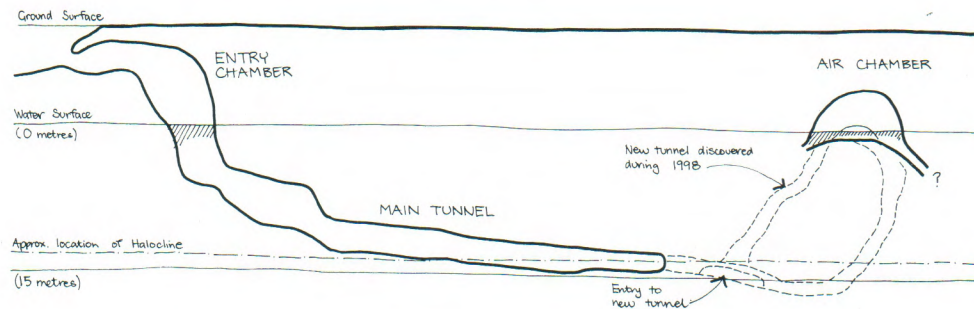


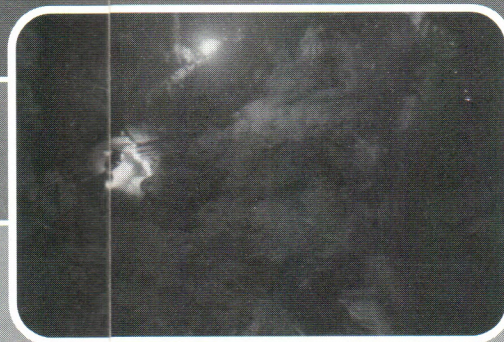
Figure No. 2 - Section AA

GUA KRISTAL, BOLOK, WEST TIMOR, INDONESIA  
Drawn by David Cowan, October 1998



# SNAP SHOTS FROM THE COOK ISLANDS

Photos courtesy of David Goldie





# EASTER PENETRATION COURSE

If you are interested in attending a Penetration Course, the next CDAA Penetration Diver will be held in Mt Gambier this coming Easter in April – subject to sufficient numbers this is a confirmed date.

## COURSE DATES:

Friday, 13th April  
Saturday, 14th April  
Sunday, 15th April  
Monday, 16th April  
Tuesday, 17th April (probably a half day)

Please note that this course will be run over five full days. If you are participating in the course you are expected to be available for the whole of this time both during the day and for a couple of hours each evening.

The course cost is \$715.00 (including GST), which includes instruction and materials but does not cover costs incurred in Mt Gambier (eg. accommodation, air fills, meals etc..)

The number of places for this course is limited and there may be more people interested than there are places. Selection will be on a "first

come first serve" basis (subject to satisfying pre-requisites) so if you would like to attend this course, please return the following completed paperwork to me no later than March 28th, 2001:

- 1) an accurately completed and signed application form (enclosed) – please take note of prerequisites!
- 2) a deposit cheque of \$200.00, or full payment, made payable to the C.D.A.A.

Once your deposit has been received and acknowledged your course booklet will be forwarded to you with further details.

If you have any further enquiries about the course please don't hesitate to contact me via any of the following.

**Barrie Heard**  
(Penetration Course Co-ordinator 2001)

24 Invermay Rd West  
Ripplebrook, Vic. 3818

Ph: (03) 5627 6474

Fax: (03) 5627 6441

email: bheard@dcsci.net.au

## FROM THE CDG NEWSLETTER

### BATTERY CAPACITY AND RECHARGING DRY CELLS

#### INTRODUCTION

Members of the Group depend on battery powered lights. A variety of cell types is available but little information as to their relative merits. Among the most common are alkaline dry cells, nickel cadmium rechargeable cells and nickel metal hydride rechargeable cells. Some people have reported success with systems to recharge alkaline cells. This study examines cell capacities, comparing the differing technologies, and also evaluates the effectiveness of recharging alkaline cells.

#### EXPERIMENTAL METHOD

The test was designed to simulate a head mounted diving torch. C size cells were tested because they are common. A load of about 1 amp was drawn which would correspond to a four cell head torch with a power of 5 to 6 watts. All measurements were conducted in free air at room temperature. To test the capacity of a cell it is discharged into a dummy load (in this case a 1 ohm power resistor) and the voltage measured over time. Once the voltage has dropped to a predetermined level the capacity can be calculated. It was decided that a cell was 'flat' when its output fell below 0.75V, which is approximately two thirds of a typical, on-load, initial value. Measurements were taken automatically with a home-made data logger.

A range of cells were tested

\*A new 'high capacity' (2.2Ah) NiCad (Maplin Electronics)

\*A used 'high capacity' (2.2Ah) NiCad (dated 04191 estimated 150 cycles)

\*A new NIMH Cell

\*A new alkaline cell (Duracell)

Trials were also made attempting to recharge the alkaline cells using a proprietary special purpose charger (Battery Manager Ultra). An alkaline cell was repeatedly tested and recharged until it lost capacity. A second alkaline cell was repeatedly discharged by one half of its initial capacity and re-tested, since it is alleged that recharging is more effective in this case.

Cont....



## RESULTS

Cell	Capacity (Ah)	Price (£)	Weight (g)
New NiCad	2.3	3.99	70
Used NiCad	1.5	—	65
New NiMH	1.8	6.99 (3)	65
New Alkaline	3.6	1.75	65
Recharged Alkaline 1	3.6, 1.9, 1.6, 0		
Recharged Alkaline 2	Failed after 4 cycles		

(3) The NIMH cells used were 'Uniross High Capacity' from Maplin Electronics. These have now been discontinued and 'Varta' cells substituted, with a slightly higher nominal capacity of 2.6Ah. There is a note on the Maplin site that a microprocessor controlled charger is needed to exploit the full capacity of these cells (which the Battery Manager Ultra is supposed to be?)

- (1) - Cell flattened between charges
- (2) - Cell half flattened between charges

## CONCLUSION

It was not surprising that there were differences between nominal and measured capacity, because this study is measuring in a non standard way, but one that reflects 'real life' in a diving torch.

The results of the tests show that alkaline dry cells have by far the highest capacity. NiCad and NIMH cells are broadly similar when new, old NiCads retain a useful capacity even after 10 years of (ab)use. Recharging dry cells that had been run flat was not a success and although half-discharged dry cells could be recharged more often there would seem little point since a NiCad could supply the same amount of energy and be recharged without any fuss. NIMH cells appear to offer no advantage over NiCads at present but are significantly more expensive. It is claimed that they are not affected by the so-called memory effect, but the Nicads measured in this test showed this to be comparatively small.

It would be interesting to extend the tests over a wider range of cells, especially similar technologies from differing manufacturers. In particular to see if alkaline cells from different sources were more or less susceptible to recharging. Other areas for investigation are the so-called memory effect of

Cont.....

NiCads vs. NIMH and methods for reviving cells by overcharging. If any reader has a cell not included in this article that they would be prepared to submit for testing I would be interested to borrow it, dry cells are rendered useless by the test regime, of course!

## SUMMARY

There are a number of different technologies available to power your lights, but the tried and tested NiCad cell has not been bettered.

### Appendix 1

A communication from Rolf Tietema (non CDG diver) suggests that not all NIMH cells are created equal, note that he has tested some AA sized cells in a slightly different way (judging brightness by eye). I will continue my tests in the search for a superior power source.

RT:

Test torches were a pair of Mini Q40's, swapped between runs:

### Series 1

Run	NICD	NIMH	Comments
1	01:00	01:50	Used
2	01:20	03:30	freshly charged
3	01:20	03:45	freshly charged

The NiCDs are RadioShack ones, a couple of years old. On run 1, I used a set which had been in the torch for some time but not used much.

The NiMHs are newish Jessops ones. The first run was the set I had already used (for a limited period) during a caving trip.

*Rob Murgatroyd.*

Cont.....



## LED's & THEIR USE IN DIVING TORCHES

Many of you may have now seen the white LED clusters that can be obtained to replace normal bulbs in caving headpieces or the small commercially available LED torches. The former are produced by John Biffin a caver from Coventry so I asked him to fit some into a couple of my small dive torches so I could test them out.

First off was a single LED in an UK Mini Q40. This is best done with an old knackered bulbreflector assembly as it has to be drilled out & adapted to fit the LED & a resister, this is because LED's work on 3.6V & the Q40 has 4 batteries amounting to 6V.

I've not bothered to test the full duration as it is measured in days, the light it gives out has a high colour temperature that results in a very even white light. It is not bright enough to use for dry caving but I used it as my sole light source in the further siphons of the Ressel this year & it was perfectly adequate at spotting the line in the large passages despite the visibility not being its usual good self. This light is ideal as a helmet mounted peripheral light source for gauge reading etc. as it gives a very good spread of light without a distracting beam & the batteries should last for a whole summer in such a mode.

The second light that was adapted was the Princeton Tec equivalent of the Q40 called the TEC 40. This differs from the Q40 by having a larger bezel & reflector this enabled a 3 LED cluster to be fitted. Combined with the more efficient reflector the light output was significantly greater & is adequate for use as a caving light. I have also seen a similar set up in the original Q light. The TEC 40 was used as my main light for the whole trip down LNRC as far as 58. Again although there is no tight beam pattern the effectiveness underwater is very good & the whiteness seems to penetrate well compared to the yellow glow that you usually obtain from normal bulbs. There are none of those concentric circles of light that are associated with a focused bulb & which distract the vision as they reflect back from suspended particles. Again I haven't fully tested duration but have used the same batteries for 2 weeks of diving.

Another Princeton Tec product is a waterproof head torch, which uses the same reflector as the TEC40. I have also fitted 3 LED's to this & have taken it to 36m with no problem, from what I have observed it is more reliable in the water than the Petzl Duo.

*Cont.....*

Where these lights really come into their own is on expedition dives in remote areas as a collection of small torches will provide enough light for a weeks diving requiring only a handful of spare batteries & no need for any charging facilities.

For more information contact John Biffin on [ledtechno@yahoo.co.uk](mailto:ledtechno@yahoo.co.uk) or visit the web site at [www.ledtechno.homepage.com](http://www.ledtechno.homepage.com)

If you are tempted to do the work yourself then be aware that white LED'S come with differing outputs & those from places such as Maplin & RS are cheaper but have reduced light intensity compared to those used by John.

*Rick Stantan*





## GENERAL

For access to ForestrySA dive sites the following conditions apply:

- Permits for Pines, Mud Hole, Hells Hole, Nettle Bed & Iddlebidy may be obtained by one of the following:
  - e-mail - forestry.recreationse@saugov.sa.gov.au
  - fax - (08) 8724 2885
  - post applications to - ForestrySA, PO Box 162 Mount Gambier, SA. 5290
  - phone (08) 8724 2876 between 8:00am and 4:30pm weekdays
- Permits can be picked up from the Carter-Holt Harvey Mill gatehouse, Jubilee Highway East, Mount Gambier.
- The forest is closed to the public on days of Total Fire Ban.
- Forest Work Bans (which also exclude public entry) may be imposed by ForestrySA on extreme fire danger days.  
If in doubt, check with Ranger Trevor Wynniat, although signs are generally erected at diving sites to indicate such bans.
- Specific permission is required to operate a petrol driven compressor during the Fire Danger Season, ie November to April inclusive (to be included with permit application)

## NETTLE BED AND IDDLLEBIDDY: *(Please note changes)*

### • Nettle Bed:

- Restricted to - maximum of 4 divers per day, (Penetration rated) 1 dive per day
- Applicants to specify preferred day(s), as this site may now be multiple booked each weekend (Saturday or Sunday)
- Bookings to be in writing (e-mail ok)
- Key picked up from Lady Nelson Visitor Centre

### • Iddlebidy:

- Open every Saturday
- Restricted to - maximum of 4 divers per day (Penetration rated) 1 dive per day
- Bookings to be in writing (e-mail ok)
- Key picked up from Lady Nelson Visitor Centre

## HELLS HOLE:

- Gate key can be picked up from Lady Nelson Visitor Centre

# NEST TRIP REPORT

Written by Dive Leader Joseph Kaffi

The Northeast Sump Exploration Team, NEST, conducted exploration efforts in Buchanan Cave Resurgence in Virginia on 28 Oct 2000. NEST is a formally recognized Project of the NSS and consists of a team of sump divers and dedicated support personnel who are pursuing original exploration efforts at several caves in the PA, Virginia and West Virginia areas. The team surveys and further documents these sites through the use of still and video techniques as well as engaging in biological surveys and water sampling at these locations. NEST is also available to support the NCRC in situations involving flooded passage and beyond sump rescues. Below is an account of the Teams most recent explorations.

Eric led off with a set up dive to a penetration of 550 feet and the end of the first sump where he placed the buoyancy compensated OMS 45 stage. I entered 30 minutes after he emerged breathing from a buoyancy compensated Alum 30 which I exchanged for the OMS 45 when I reached it. Once again the conditions were excellent with well over 12 feet of vis once you passed the low point of the first sump 250 feet in.

My dive plan called for me to breathe the second stage till I reached the bottom of the first dome pit, at a depth of 57 feet and a penetration of 720 ft, and drop it at this point. I had only used a few hundred PSI of gas by this section of the cave so I opted to continue on the stage as I began the slow

assent to the air filled lake above me. I did 1 to 2 minute safety stops at 30, 20 and 10 feet and then swam below the line at a depth of 5 feet till I reached the second dome, above me was a 30 foot diameter room with 20 feet of air space and a possible dry lead entering the top on a 90 degree angle.

Not bothering to surface I placed the stage on the hard limestone next to the line and continued into sump three on my primary side mounts. I took my time passing through this large passage, 15 feet wide by 12 feet high, it was definitely Florida size cave. About 50 feet in I saw the reflection of an air surface above me. The vis was excellent so I opted to maintain a visual reference on the line as I slowly surfaced into this space and found myself in a 10 foot long by 4 feet wide and 3 foot high air bubble, in one corner a pristine soda straw gleamed in the light of my Aul HID. It occurred to me that I was the first person to ever see this formation so I took a moment to admire it. A minute later I vented some gas from my drysuit and sank back down to the line 10 feet below me and continued on to its end.

On my last dive I had discovered a second dome pit headed downward at this point. I now hovered over the edge shining my light and trying to get a better feel for the space, it was big and despite the excellent vis I was not able to see the other side or the bottom. A number of fragile looking black formations rose from the limestone



floor at this point resembling a garden of exotic mushrooms, not trusting them as line belays I used the three pound weight I had brought with me to secure the line at this point. A ledge ran to my right so I picked up my 500 foot reel and paid out line as I headed in this direction. Instead of going passage I found a blank wall so I followed the dome at this level as it turned to the left. After circling the room and finding no going cave I returned to my starting point and began my decent into the pit.

I began my free fall centred in the dome wondering if I had another 60 footer below me. At 15 feet the bottom came into view, and even better a broad side passage exited the dome below me in line with the passage I had used to enter the space.

I reached the bottom at a depth of 25 feet, added gas to my DUI and hovered above it while I gently placed a Spike and belayed the line to this. With this task accomplished I turned and moved into the side passage which was at least 20 feet wide and 5 feet high. As I moved forward I placed a second spike, the floor was a bit firmer and I had to work the spike into the bottom by wiggling it back and forth and finning to produce a downward force, this raised up a local silt cloud and I picked the reel off the bottom and finned forward into clearer water. The vis seemed lower in this passage than in the pit and I was not sure which direction to head, my light disclosed what appeared to be a solid wall to my front. I began to wonder if I might just be in a large side room of the pit. Not completely happy with my line belay at the bottom of the dome, a weight was really required for the angles involved, I placed the reel on the bottom and turned following the line back to my starting point on the edge of the pit.

With adequate gas supplies remaining I decided to more closely examine the area so I attached the line from a 130 ft reel behind the weight and did one more search of the walls to make sure that I had not missed any thing. This time I worked my way upward and noticed the glimmer of an other air filled space above me. I slowly surfaced to find another air pocket similar to the one I had found above sump 3. After a quick look for dry passage I turned, reeled back to the main line, recovered the reel and began my exit. I surfaced in the head pool after a 70 minute dive with most of my side mount gas intact. The double stage had worked quite well. It is always better to come home with plenty of gas especially when pushing virgin passage.

Eric then did the third dive of the day when with an orientation dive to 650 feet and recovered the alum 30 on his exit. He was getting close to his agreed return time when he surfaced so I was standing by fully kitted up as his backup diver when he appeared. With almost full side mounts I purged my suit with argon, grabbed the survey slate and did dive 4 adding 150 feet to the survey.

It had turned out to be an excellent day with the second dome explored and more survey added to the cave. We were now well over 1000 feet in at this point. The double stage technique had greatly extended our useful range and enhanced our safety margins. Although no obvious way on presented itself from the second dome it is easy to miss leads in a space this large during an initial exploration push. A return trip is planned for a closer look.

We would like to recognize our sponsors and all of the supporting cavers who helped make our efforts possible. A special thanks to Arnold Jackson Of American

Underwater Lighting who supplied our exceptional primary lights, Meteor 4's and HIDs , as well as other critical gear and Tom and Jon of the Fifth Dimension Dive Center who has provided us with other vital support. We would also like to thank Terry Brady, of the Brass Anchor who has provided us with generous audio visual support. Additional sponsors include Lamar Hires of Dive Rite, Alex Sproul of Inner Mountain Outfitters, Andrew Kipe of Maryland Reproductions, and Robert Carmichael of Brownies Third Lung and HALCYON, The Doing It Right Equipment Company, and our most recent

sponsor, DUI for our outstanding CF 200 series Dry Suits, Tim Walker, Hank and Jane Anderson, and the Sovik and Mothes families without whose support none of our efforts would have been possible.

#### **DIVER EXPLORERS**

Joseph Kaffl

Eric Tesnau

#### **STAND BY ON CALL DIVERS AND SUPPORT TEAM**

Paul Montgomery (Virginia Area Coordinator)

Jeff Mott

Dave Nicholas





## NOTICE • NOTICE • NOTICE • NOTICE

In response to the moratorium on membership late fees, as voted for by the membership, the Directorate has had many requests from past members to re-establish their currency with the Association.

A decision has been made by the Directorate that any past member seeking to rejoin after a period of 5 or more years would be required to carry out a checkout dive with a current CDAA Instructor. If the diver can show a sufficient maintenance of skill level during that time, by providing documented proof of equivalent dives in another region e.g. Florida, Mexico, Vanuatu etc they will be looked at on a case by case basis by the Directorate.

The checkout dive shall be the pre-assessment dive (in its entirety including the requirement to be conducted in a CDAA rated or sanctioned cavern site) of the CDAA course that corresponds with the level that the diver wishes to return to.

I will be available to conduct check out dives in Mt Gambier on Sunday 10th June 2001, Monday 11th June 2001, Sunday 27th May 2001 and Monday 28th May 2001. Any person wishing to carry out check out dives on any of those dates must book in advance. I will not be charging for my time on the above dates.

Any past members that require checkout dives, but are unavailable for the above dates, can carry out their dives with any current CDAA Instructor at a fee negotiated with the Instructor.

*Paul Axton*

CDAA Standards Instructor

## **DON'T FORGET TO RENEW!**

Membership renewals will be due again on 1st July 2001. Please check your cards now for their expiry date.

Membership renewal will be \$70.00 annually, as voted at the last AGM. The moratorium on late fees finishes on 1st September 2001 any renewal application after that date will incur an additional late fee of \$50.00.

Remember! include your payment of \$70.00, two passport sized photos and a stamped self addressed envelope to: CDAA, P.O. Box 290, North Adelaide 5006.

*Lorraine Hardman*

Records Officer

## Past Members Return

On the 21st and 22nd January 2001, I had the pleasure of assisting three past members to re-establish currency with the association. All three members had heard about the moratorium on lapsed membership fees and were eager to take advantage of it to get back into the sport that we all love.

Because all three had been unfinancial for more than five years they needed to carry out a check out dive, to brush up on old skills and catch up with the latest ideas and gear.

The checkout dive was conducted in Gouldens Waterhole and took the form of the pre-assessment dive of the course at the level to which they were returning. The day also gave the opportunity for a gear critique and an exchange of ideas both old and new.

I would like to take this opportunity to welcome back to the association David Cowen, Geoff Ben and Daryl Harris and look forward to seeing them around the Mount in the future.

*Paul Axton*

CDAA Standards Instructor



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State of the Art  
**TORCHES**  
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HID daylight + halogen  
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## CDAА SITE ACCESS

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

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

SITE	LEVEL	OWNER	ACCESS DETAILS
<b>MOUNT GAMBIER - SOUTH AUSTRALIA</b>			
<b>Ewens Ponds</b>	Nil	DENR P.O. Box 1046 Mt Gambier 5290 (08) 8735 1177	Groups of 6 or more, phone/mail to Dept. of Environment & Natural Resources (DENR). Smaller groups, no need. Indemnity form to be completed.
<b>Horse &amp; Cart Tea Tree</b>	CN	Peter Cunningham PO Box 2168, Mt Gambier 5290	By phone or mail, 1 week prior. Ph: (08) 8738 4003.
<b>Little Blue</b>	S	Port MacDonnell	Little Blue - permission not required - must carry card.
<b>Allendale</b>	C	Port MacDonnell	Obtain key from Mt. Gambier Tourist Information Centre.
<b>Gouldens</b>	CN	DENR	<b>General Diving:</b> Divers to contact DENR and notify of date and site to be dived.
<b>2 Sisters</b>	CN	P.O. Box 1046	Divers must have the correct CDAА diving endorsement for the site and carry current financial CDAА membership card. The diver must have signed an indemnity with DENR before access is permitted.
<b>Fossil</b>	C	Mt Gambier 5290 Ph: (08) 8735 1177	<b>Training:</b> The Instructor is to notify DENR of the date the sites are needed and to forward signed indemnities from each student and their temporary card number/ membership number.
<b>Ela Elap One Tree</b>	S	Mr. Peter Norman	By phone or drop in before diving.
	S	Private Bag 67, Mt Gambier 5290	Ph: (08) 8738 5287
<b>Swim Through</b>	C	Valerie Earl PO Allendale 5291	Currently CLOSED pending new access arrangements.
<b>Piccaninnie Ponds</b>	S	DENR P.O. Box 1046, Mt Gambier 5290	Permit holders by phone. Be aware of delicate vegetation. Indemnity form to be completed. Ph: (08) 8735 1177 Faxed copies of cards no longer accepted when booking.
<b>Hells Hole Pines</b>	S	ForestrySA PO Box 162	Contact ForestrySA by mail, phone, fax or email to arrange permit. Collect permit from Regional Office or Carter-Holt Harvey Mill gatehouse, Jubilee Hwy., Mount Gambier. No diving on total fire ban days.
<b>Mud Hole</b>	P/C	Mt Gambier 5290 Ph: (08) 8724 2876 8.00am - 4.30pm weekdays Fax: (03) 8724 2885	Forest Work Bans may be applied by ForestrySA if forest fire danger is expected to reach extreme. Such bans also exclude the public from entering the forest. If in doubt, please check with Trevor Wynniat, although signs are generally erected at diving sites on such days to indicate such bans. Permits required for compressors during fire danger season.
Email: forestry.recreationse@saugov.sa.gov.au			
<b>Kilsby's</b>	S	Landowner leased to S.A. Police	Restricted access conditions apply - refer Guidelines Issue 54. Twin tanks, maximum of 40 metres depth. Write to: 40 School Road, St. Andrews 3761, Email: mpain@hipex.com.au, 4 to 6 weeks prior to wanting to dive. Please enclose stamped self-addressed envelope (Do not contact landowner). Access date now the first weekend of every month. <b>No animals permitted. No mid-week diving.</b>
		No Visitors	
<b>Shaft</b>	S	Generally open one weekend a month L. Claridge P.O. Box 290 North Adelaide 5006 Ph: (03) 5565 8793 A.H.	For access dates contact Linda Claridge. Also, see Special Access Bulletin in Guidelines issue 69. Nitrox as a diving mix is not allowed in the shaft. Deco mixes ATTACHED to a shot line are permissible. Divers applying to dive in the Shaft must have documented experience of a least 5 twin-tank dives. Apr 7/8, May 5/6, Jun 2/3, Jul 7/8, Aug 11/12. Email: garinda@tpgi.com.au
<b>Ten Eighty Bullock Hole Black Hole</b>	S	Mr. Colin Traeger PO Box 14 Mt Gambier 5290 (08) 8726 6215	<b>Sundays only</b> 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.

## CDAА SITE ACCESS

SITE	LEVEL	OWNER	ACCESS DETAILS
<b>MOUNT GAMBIER - SOUTH AUSTRALIA (continued)</b>			
<b>Max's Hole</b>	C		Currently pending access arrangements with new owner.
<b>Hann's cave</b>	P	P & A Lasslett	Groups of four divers only apply in writing to Site Director. Limited groups will be allowed access over the summer months. The site is very delicate and therefore only limited access is available. Divers applying will be notified as to further access details. Please include a stamped self addressed envelope.
<b>Engelbrechts - East - West</b>	C P	Mt Gambier Council Lessee Ph: (08) 8723 2299	Obtain key from Mt Gambier Tourist Information Centre. Access agreement must be signed prior to diving. 2 divers must sign out keys, all divers must sign in advising which groups they are diving with. Please book public holiday dives with lessee.
<b>Three Sisters</b>	P	Millicent Council	Contact 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.
<b>Iddlebiddy (5L250)</b>	P	ForestrySA PO Box 162	5L250 open every Saturday. 5L290 open every weekend. Max. 4 divers per dive per day, 1 dive per day for each site. Only Penetration divers.
<b>Nettle-Bed (5L290)</b>	P	Mt Gambier 5290	Bookings from Forestry Office - key from Lady Nelson. Contact ForestrySA by mail, phone or fax to arrange permit. Collect permit from Regional Office or Carter-Holt Harvey Mill gatehouse, Jubilee Hwy., Mt. Gambier. No diving on total fire ban days. Forest Work Bans may be applied by ForestrySA if forest fire danger is expected to reach extreme. Such bans also exclude the public from entering the forest. If in doubt, please check with Trevor Wynniat or Forestry Office, although signs are generally erected at diving sites on such days to indicate such bans. Permits required for compressors during fire danger season. Email: forestry.recreationse@saugov.sa.gov.au
<b>McKay's Shaft</b>	S		Contact South East representative Phil Argy at Mt. Gambier access and indemnities.
<b>Tank Cave</b>	P	Mr. DY CER	Access Manager: Harvey Grantham Email: lemaire@senet.com.au Ph: (08) 8370 9816
<b>Baker's Cave</b>	C		Please write to the Site Access Director to dive in Baker's Cave. Include stamped self-addressed envelope. Climbing equipment required.
<b>NULLARBOR - WESTERN AUSTRALIA</b>			
<b>Cocklebidy</b>	C		Apply in writing for permission to dive at least 4 weeks in advance of trip to: District Manager, C.A.L.M., PO Box 234, Esperance, W.A. 6450.
<b>Murra El Elevyn</b>	P/C		Phone: (08) 9071 3733 Fax: (08) 9071 3657
<b>Tommy Grahams</b>	C		
<b>Weebubbie</b>	C		Apply to Gerry Falleiro, A/Assistant Project Officer, South East Region Land Administration Services Branch Phone (08) 9273 7215 Fax (08) 9273 7414 Email: gerry_falleiro@dola.wa.gov.au PO Box 2222 Midland WA 6936
<b>N.S.W. - WELLINGTON CAVES</b>			
<b>Limekiln (McCavity)</b>	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.
<b>Water (Anticline)</b>	C		Affected by high CO <sub>2</sub> levels during Summer/Autumn. Access arrangements are co-ordinated with an already commissioned research group. Contact Greg Ryan (02) 9743 4157 h, gregr@cs.usyd.edu.au
<b>Rum Jungle Lake</b>	S		Unrestricted access currently exists - Please refer advice in Guidelines No. 68 or check CDAА website.
<b>Burrinjuck</b>	S/C/P		This is a tri rated site. Please see details in issue No. 73. There are no specific access arrangements.



# TRADING POST

## FOR SALE ITS CLEAROUT TIME

- ⇒ Dive Rite M.L.S. light with MR-16 Dichroic Head. Twist Style Switch.  
**RRP \$1400.00 Sell for \$750.00**
- ⇒ Dive Rite M.L.S. light with both H-1 Test Tube style head & MR-16 Dichroic Head. Twist Style Switch. **RRP \$1900.00 Sell for \$950.00**
- ⇒ Oceanic Nitrox dedicated Delta 2 Reg on Bal Diaphragm Din First Stage with Oceanic SPG. **RRP \$1000.00 Sell for \$550.00**
- ⇒ Oceanic Nitrox dedicated Delta 2 Reg on Piston Din First Stage with Oceanic SPG. **RRP \$850.00 Sell for \$450.00**

All in excellent condition

Tony Davis – 0418 370 941 CDAA1187

## CDAA NOTICES

### GUIDELINES DEADLINES

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

Deadline	for publication
20th May	June
20th Aug	Sept
20th Nov	Dec

### NOTICE FOR INSTRUCTORS

Procedure for ordering student packs:

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

#### • INSTRUCTOR RENEWALS •

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

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

*Deb Williams*  
Instructor Materials Officer

# TRADING POST

## FOR SALE

- ⇒ Drysuit DUI TLS350  
Suit male approx 6ft. Size 10 feet. New neck and wrist seals. VGC. **\$1500.00**
- ⇒ SF3 one piece undergarment to suit above. Near new. **\$400.00**
- ⇒ Drysuit – Hot 'n' Dry, Pro Diver. Same size as DUI suit. New boots. Excellent condition. **\$900.00**
- ⇒ Extreme 300 series and 200 series undergarments with foot and wrist straps. Excellent condition.

Genuine reason for sale of all the above, please

Call Mary Newman-Debens in Portland on  
0418 521 238 or A.H. 03 5523 5617

### ACTIVE CDAA INSTRUCTORS

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

STANDARDS DIRECTOR:

Paul Axton

Telephone: 0419 346 442

(email) records@teksupport.net.au

INSTRUCTOR	CN	S	C	STATE	PHONE	INSTRUCTOR	CN	S	C	STATE	PHONE
<b>NSW &amp; ACT</b>						<b>WESTERN AUSTRALIA</b>					
Nick Jones	.	.	.	ACT	0408 423 017 m	Gary Bush	.	.	.	WA	0402 339 652 m
Peter Grills	.	.	.	NSW	(02) 4950 6262						(08) 9367 4701 h
					(8am - 12 midday)	Marilyn Boydell	.	.	.	WA	(08) 9349 5646 h
Gary Norgard	.	.	.	NSW	(02) 4968 4588 h	Steve Sturgeon	.	.	.	WA	(08) 9527 7667 h/w
Andrew Robertson	.	.	.	NSW	(02) 9548 5987 h						0418 940 143 m
					0417 664 255 m	<b>VICTORIA</b>					
Des Walters	.	.	.	NSW	(02) 6041 1405 h	Stephen Arnel	.	.	.	VIC	(055) 26 5230 h
					(02) 6025 3506 w	Paul Axton	.	.	.	VIC	0419 346 442 m
Liz Butler	.	.	.	NSW	0409 463 176						(03) 9782 1671 h
<b>SOUTH AUSTRALIA</b>						Gary Barclay	.	.	.	VIC	(03) 5565 8793 h
Greg Bulling	.	.	.	SA	0409 095 927 m	Jane Bowman	.	.	.	VIC	(03) 9579 2600 w
					(08) 8265 4978 h	Stan Bugg	.	.	.	VIC	(03) 9379 8791 h
Glen Harrison	.	.	.	SA	0407 608 609 m	Linda Claridge	.	.	.	VIC	(03) 5565 8793 h
John Hanson	.	.	.	SA	(08) 8269 1083	Brian Cornell	.	.	.	VIC	(059) 85 2514 h
Max Marriot	.	.	.	SA	(08) 8447 3360 h	John Dalla - Zuanna	.	.	.	VIC	0407 887 060 m
Richard Megaw	.	.	.	SA	(08) 8344 1733 h						(03) 9484 1216
Richard McDonald	.	.	.	SA	(08) 8295 4140 h/w	Chris Edwards	.	.	.	VIC	0417 116 372 m
						Barrie Heard	.	.	.	VIC	(03) 5627 6474 h
											0419 401 276 m
						Warrick McDonald	.	.	.	VIC	(03) 9579 2600 w
						Bob Wealthy	.	.	.	VIC	(03) 5985 8338 h
						Timothy Vernon-Smith	.	.	.	VIC	0418 325 309 m
						Frank Zeigler	.	.	.	VIC	(055) 236 392



## TANK CAVE DIVING SCHEDULE 2001

<b>JANUARY 2001</b>	<b>DATE</b>	<b>FEBRUARY 2001</b>	<b>DATE</b>
Saturday	13th	Saturday	10th
Sunday	14th	Sunday	11th
Friday (Australia Day)	26th		
Saturday	27th	Saturday	24th
Sunday	28th	Sunday	25th
<b>MARCH 2001</b>	<b>DATE</b>	<b>APRIL 20001</b>	<b>DATE</b>
Saturday	10th	Friday (Good Friday)	13th
Sunday	11th	Saturday	14th
Monday (Labour Day VIC)	12th	Sunday	15th
		Monday (Easter Monday)	16th
		Saturday	28nd
Saturday	24th	Sunday	29th
Sunday	25th		
<b>MAY 2001</b>	<b>DATE</b>	<b>JUNE 2001</b>	<b>DATE</b>
Saturday	5th	Saturday	9th
Sunday	6th	Sunday	10th
		Monday (Queen's Birthday)	11th
Saturday	19th		
Sunday	20th	Saturday	23th
Monday (Adelaide Cup)	21st	Sunday	24th
<b>JULY 2001</b>	<b>DATE</b>	<b>AUGUST 2001</b>	<b>DATE</b>
Saturday	7th	Saturday	4th
Sunday	8th	Sunday	5th
Saturday	21st	Saturday	18th
Sunday	22rd	Sunday	19th
<b>SEPTEMBER 2001</b>	<b>DATE</b>	<b>OCTOBER 2001</b>	<b>DATE</b>
Saturday	1st	Monday (Labour Day SA)	1st
Sunday	2nd		
Saturday	15th	Saturday	13th
Sunday	16th	Sunday	14th
Saturday	29th	Saturday	27th
Sunday	30th	Sunday	28th
<b>NOVEMBER 2001</b>	<b>DATE</b>	<b>DECEMBER 2001</b>	<b>DATE</b>
Saturday	10th	Saturday	8th
Sunday	11th	Sunday	9th
Saturday	24th	Saturday	22nd
Sunday	25th	Sunday	23rd

# WANTED



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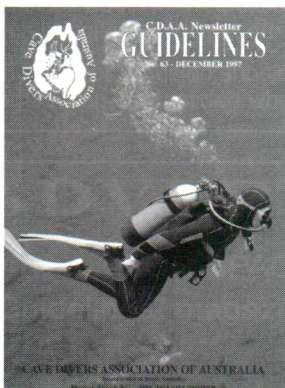
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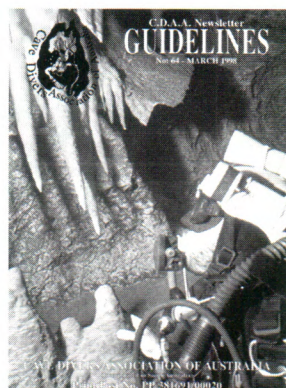
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		<b>Cave Diving - A Blueprint for Survival.</b> A book by the world-renowned cave diver, the late <i>Sheek Exley</i> , this is a case study of a number of accidents that have occurred in the USA and how to avoid them.	\$15.00	
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		<b>NSS Cave Diving Manual.</b> The standard reference manual in cave diving covering just about every conceivable topic. New Edition.	\$55.00	
		<b>The Darkness Beckons.</b> By <i>Martyn Farr</i> . The history and development of cave diving.	\$55.00	
		<b>An Introduction to Technical Diving.</b> By <i>Rob Palmer</i> .	\$45.00	
		<b>Deep Into Blue Holes.</b> By <i>Rob Palmer</i> . This is the project manual written about his trips to the Bahamas, diving some of the most advanced and spectacular caves in the world.	\$55.00	
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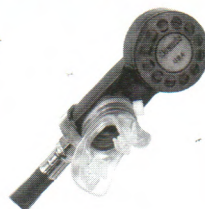


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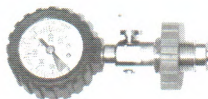


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