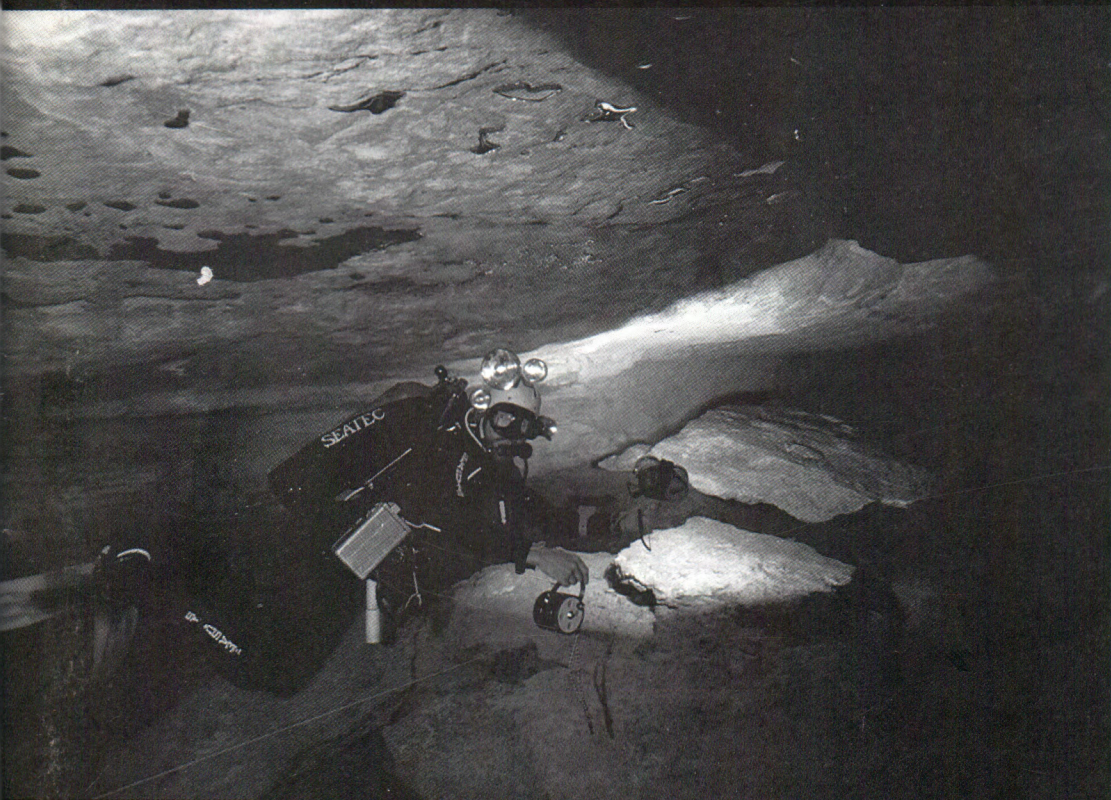




C.D.A.A. Newsletter

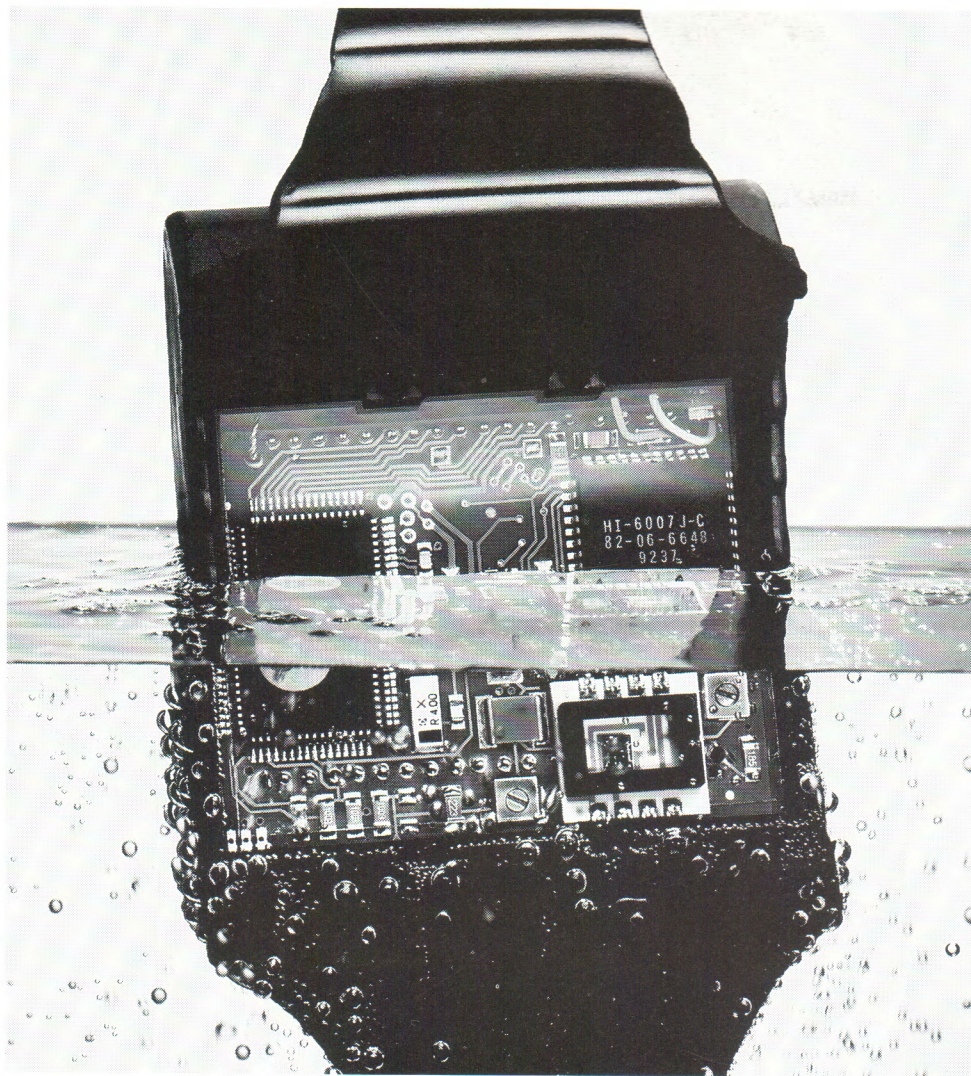
GUIDELINES

No: 50 — JANUARY 1994



CAVE DIVERS ASSOCIATION OF AUSTRALIA
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Front Cover: Neil Vincent

GUIDELINES is the newsletter of the Cave Divers Association of Australia, published four times a year - March, June, September and December. All articles for the following issue are to be sent to the Editor, Peter Girdler, P.O. Box 290, Golden Grove, SA 5125, prior to 10th February, 1994. 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 P.O. Box 290, North Adelaide, 5006 and your enquiry will be passed on.

National Director (temporary)

Lisa Bernasconi (055) 62 9583 (h)

National Standards Director

Chris Brown (08) 269 5793 (w&h)

Business Director

T.B.A. T.B.A.

Treasurer

Wayne Wilson (03) 338 2975 (h)

Training Manager

Greg Bulling (08) 265 4978 (h)

Instructor Training Manager

John Dalla-Zuanna (055) 62 9583 (h)

Site Access, Mapping & Research Manager

Peter Horne (08) 295 6031 (w&h)

Representatives

S.E. - Phil Argy (087) 23 0879 (h)

WA - Andrew Poole (09) 249 4048

NSW - Neil Vincent (043) 97 1798 (h)

Regional Training Co-ordinators

WA - Hugh Morrison (09) 344 1562 (w)

NSW - Terry Cummins (02) 888 5899 (w)

C.D.A.A. Publications

Vic. - John Vanderleest (03) 416 9370 (h)

SA - Max Mariot

Records Officer

Glenn O'Connell (03) 465 5235 (h)

Guidelines Editor

Peter Girdler (08) 380 5205 (h)
(08) 259 5497 (w)

NATIONAL DIRECTOR'S REPORT

by Lance Mitchell

In this issue each of the Directors will be giving as their report an update on the improvement projects under their control.

PROJECT NO. 6

Legal items (as advertised by our legal representatives Norman Waterhouse and Assoc).

Liability of Directors and Official

The protection once afforded all members under the Incorporation Act, has been considerably lessened since recent changes were made to the Act. In particular where Directors/Officials become aware of issues that are potentially damaging to the Association and then ignore on choice not to take corrective action, they could be setting themselves up nicely. Apart from taking appropriate action where required we are still examining a number of insurance policies for the entire Association.

Instructors Insurance

This is a good example of where we had to finally take action whereby requiring written documentation of an instructor's insurance policy specifying coverage for CDAA related training. Because we do not know the full ramifications of a liability case related to a training incident. The Directors would be seen as irresponsible to continue with training until a policy can be found to cover instructors adequately. If no such policy is forthcoming then we will all need to face the decision of just what level of risk we are prepared to take for the benefits of training. As information becomes available from Norman Waterhouse and Assoc, it will be sent to all members and landowners for discussion.

National/Federal Incorporation

While members are approaching landowners around Australia for access to sites and are using CDAA qualifications as evidence of security for the landowners, then there is value in "National Incorporation". If we seek incorporation in each state then

we have to set up elected officials in accordance with the constitution in each state. Fortunately "Federal Incorporation" resolves this and we can operate under the one directorate. Norman Waterhouse and Assoc. are currently organising this for us.

Dive Guides

The problem with guides is more in the implications of the name, that is it implies some responsibility for "guiding" people through a dive. Apart from changing the name we are still collecting information from other organisations that use guides to better establish our position.

Modifying current ladder system in Weebubbie Cave

If we build or install any access device in any site we will certainly wear some percentage of liability in the event of failure. So proper steps need to be taken with respect to professional certification of construction and installation standards.

PROJECT NO. 16

Rights of site discoverers

Members who discover sites and bring them forward to the Association will be placed fair and square in the centre of any access negotiations and research projects prior to general release. However this is not so straight forward if the discoverers' diving level is below the rating of the site. To automatically dictate policy on this would discourage new discoverers, especially in newly developing states where divers are only recently getting into our system. Any feedback from members would be welcome as this could affect any one of you at some time. Until a documented policy is released the directorate will judge each case on its merits.

PROJECT NO. 21

Establish Indo-Pacific contacts

No action to date, any members wishing to take this one on should contact the directorate.

EDITORIAL

Congratulations to the three prize winners in the 20th Anniversary Raffle. Thank you to those "few" who sold tickets. It is a shame that the membership did not support the raffle with more enthusiasm. The 20th Anniversary Celebrations were very well organised and those that participated were well rewarded for their support and attendance. Thank you to Tony Davis for a job well done and also to those that supported his efforts.

Due to difficulties experienced each year with the production of Guidelines, the next issue will be produced in March 1994 and then each three months to follow. This will relieve the problems associated with the January issue (too close to Christmas) and provide support for the AGM now held each July.

With Christmas and the New Year past us once more I hope we can all look back on all that has happened during 1993 and contemplate those foolish deeds and the not so complimentary words said that we feel sorry for. Hopefully we can strive to be better human beings this and the following years to come. Thank you once again to those who have helped me with articles and consistent support. Keep those articles coming and how about some more contributions to "Letters to the Editor". It is YOUR chance to have a say.

Yours in safe diving, support and co-operation... Pete

BUSINESS DIRECTOR'S REPORT

by Lisa Bernasconi

As we're now six months into our new financial year, it's good to see everything is running smoothly. At last we've just had new pamphlets printed that will be circulated around dive shops, businesses and sent to the Lady Nelson Tourist Bureau. They will also receive posters to display the fact that they support the CDAA then hopefully this will create more interest in our sport.

The improvement projects printed in our special mailout you received last June are also progressing well. Budgets were drawn up by all the officials and reviewed by the Directorate and outside of ever increasing legal costs, they are all being adhered to. As I've already stated, the brochure is printed, but the need for a log book is still being discussed. We've had two promotional days - the 20th Anniversary in Mount Gambier, and we had a stand at Melbourne's Underwater Festival. No state meetings have been held, basically because the membership seems happy with everything at the moment.

Since taking on the position of Business Director I've seen a side to the Association I never knew existed. A mere handful of people who operate on a full time work load seem to hold the whole thing together. This

is either because they have a real love of cave diving or because they enjoy being part of something that they can help steer into being the epitome of cave diving in Australia, or both.

In the last six months, words or acronyms such as IANTD or ANDI have been bandied around more and more. Yet when these organisations have actually approached our landowners or perhaps a State Government Body it's been extremely pleasing to see that they have automatically gone straight to us to ask for advice on who these groups are.

So with all the time I donate to the Association, I at least get to see that the CDAA gets the respect it deserves. But with all this it constantly makes you aware that we can't sit still. That unless the CDAA keeps reviewing its standards, keeps up to date with legal issues, and makes itself known both nationally and internationally, we will be left behind. Our foundations were laid in Mount Gambier, but I believe the membership realises that while including it, our sights need to be set beyond it. We would be foolish to lose sight of all we've achieved there, but it's now the right time to move further afield utilising the knowledge and skills we've developed.

LETTERS TO THE EDITOR

SAFETY WITH BELAY TECHNIQUES & LADDERING

I recently completed a Sinkhole Course and was quite surprised at the documentation handed out with regard to Belay techniques and laddering. Of greatest concern were a number of extremely dangerous practices which the caving, climbing and mountaineering communities have long since abandoned. The intention of this note is to point out some of the deficiencies in that information and suggest some alternative approaches. This is not meant to provide training information but point those interested in learning more in the right direction.

Any climb which could result in a fall and a possible injury should be belayed properly. Practices such as body belaying are only just better than nothing and are essentially useless for a number of reasons apart from the obvious difficulty in actually stopping a fall. The most difficult task when establishing a belay is to consider all of the possible things that could go wrong, the belayer not only has to be able to stop a fall, but has to be able to initiate a rescue if the climber is injured while falling. To make this possible the belayer must not be an integral part of the belay so that the belay device, can be tied off and the belayer can then extricate himself from the belay and either deal with the rescue or seek help.

The belay rope should be set up so that it relies on at least two independent anchors so that the failure of either will minimise the shock to the rest of the system. **The belay device should be attached directly to the anchors¹** and positioned so that a fall will not drag the rope across the edge, a situation which could result in the rope being cut (a rope protector, such as a piece of carpet, should be used over sharp edges to reduce the wear on the rope). The climber hanging

from the rope should be in a position that enables them to easily retrieve the ladder and continue climbing, rather than having to swing on the rope or be lowered to start again.

The belay device should be connected to the anchors by static rope, wire traces or slings, the rope used for the belay can be either static or dynamic. Dynamic rope will provide less shock in a fall on both the climber and the anchors; however it is more susceptible to wear and cutting so care must be taken when rigging. Static rope is much tougher and can be used for abseiling and SRT techniques; however a tight belay must be kept when belaying with this type of rope to prevent severe shocks to the climber and anchors if a fall occurs.

Both the climber and the belayer should be wearing a harness. Even with a professionally built padded harness the blood flow to the climber's legs will be reduced while hanging in the harness. If the climber is unconscious then the problem can become very serious. The use of slings around the waist or under the arms is not an acceptable method of attachment, the harness chole should distribute the load to the legs away from the body's major organs. The belayer should not be an integral part of the belay but they still need to wear a harness. The best place to belay from is in a position where you can see the climber, this is invariable close to the edge or sometimes even over the edge so a safety rope should always be attached to the belayer, but more importantly it means that the belayer is prepared for any accident that may happen. The belayer can instantly detach from the belay and abseil down to the injured climber to render assistance.

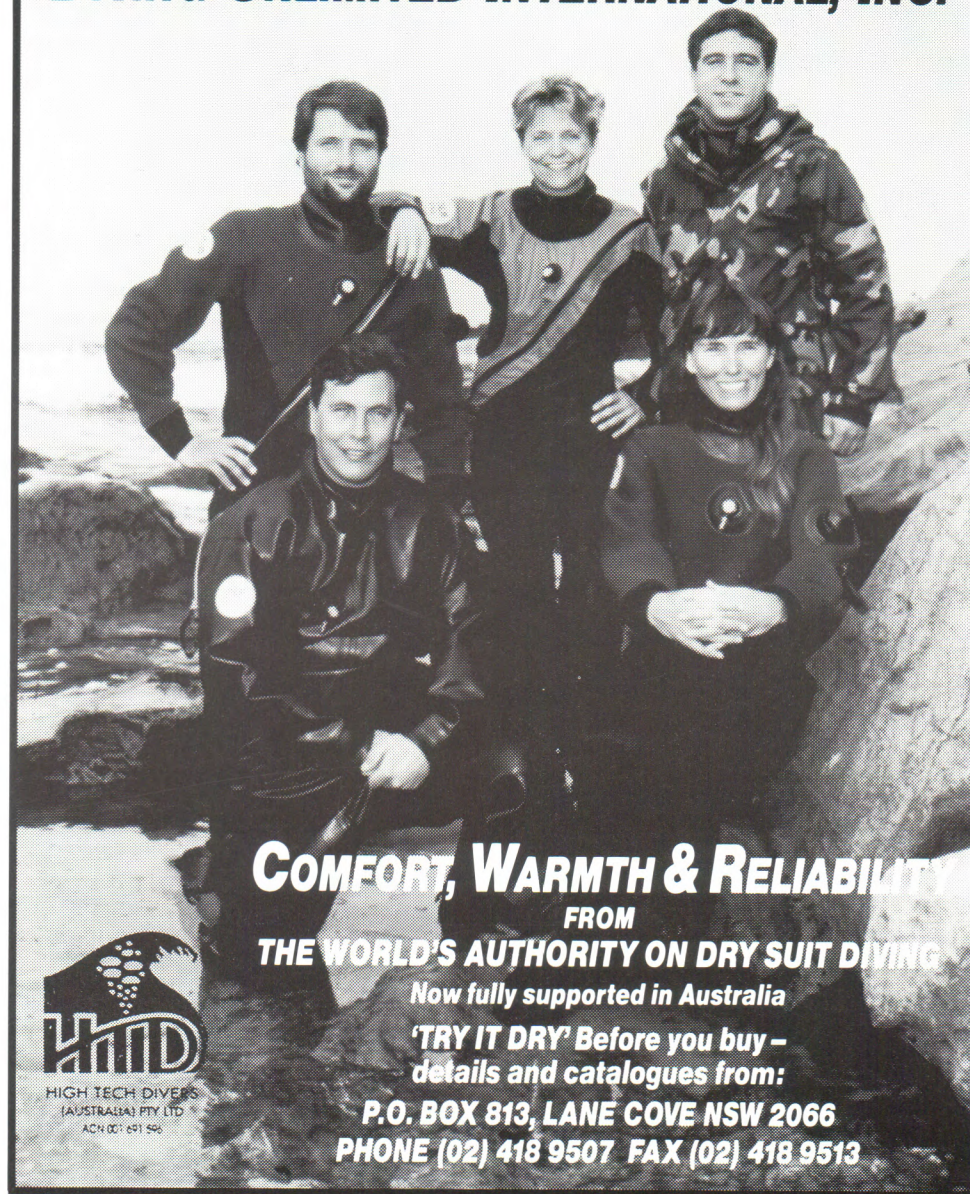
When setting up a belay very few knots need to be known, in particular a double

Continued on Page 6


¹ The Sinkhole Course Notes contains a diagram of a belayer tied to the anchors at the back of their harness with the belay device attached at the front. **THIS SHOULD NEVER BE DONE.** Apart from making the belayer an integral part of the belay so that no help can be offered to the climber, loading on the waist strap of a conventional harness in this manner places pressure on the kidneys and can cause severe injury to the belayer especially if the climber needs to be supported for a period of time which might occur if the climber is resting or is unconscious after a fall.



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LETTERS TO THE EDITOR

Continued from Page 4

figure of 8 knot should be used on all knots in rope (the Alpine Butterfly knot is preferable in some situations but you can get by with the double figure 8), and a tape knot should be used in all slings. When tying a tape knot the tails of the knot should be at least 4 times as long as the tape width. Other knots such as a double fisherman's are preferred for joining ropes, and a double bowline is useful for attaching ladders; however the single bowline should not be used since it is obviously an inferior knot which requires an additional locking knot to maintain its integrity (it is also a weaker knot than the double figure of 8).

There are a number of devices which can be used for belaying, all of which have advantages and disadvantages. The figure 8 has 2 modules of operation. The conventional approach, which is commonly used for abseiling, is easy to use even with stiff rope and the rope can be pulled through relatively easily; however the stopping and holding force (how much effort is required by the belayer to support a climber on the rope) is not as great as some of the other devices and the device twists the fibres in the rope possibly weakening it and making it much harder to handle since the rope will insist on becoming a twisted tangled mess. In its other mode a bight of rope is pushed through the small hole and clipped through a karabiner, in exactly the same manner as a sticht plate. In this configuration the holding ability of the device is almost double and the rope will not be twisted; however with a stiff rope it will be difficult to feed the rope while belaying. Other more exotic devices are available, but these can be expensive. The Italian hitch is a knot which has a greater holding force than almost all the other belay devices and is a good alternative to the more expensive approaches.

All of the above discussion simply corrects some faults and omissions in the training documents. There are more efficient ways to do things than to climb down ladders belayed and then be belayed up the ladder afterwards. With the exception of extremely short ladders, cavers abseil rather than climb down a ladder. When abseiling a

top belay can be more of a nuisance than a help and really only needs to be used for beginners in conjunction with a chest harness. After people have mastered abseiling a belay can be provided simply by pulling on the rope at the bottom and thus locking the abseil device. By abseiling into a hole almost no energy is expelled in either climbing or belaying which is certainly a plus for divers.

When exiting using a ladder a self belay can be rigged on the same rope that was used to abseil in on, by attaching a chest ascender to the harness so that only upwards motion is possible. This means that each person climbs the ladder and if they fall off or get tired they can simply let go and be held in the same position. This does require more gear, but requires no effort to belay.

The dangers involved in entering or exiting from a vertical cave are real and provision should be provided for emergencies just as they are once in the water. The cost of the majority of equipment required is insignificant compared to that of the dive gear. Harnesses for instance can always be made from tape at the cost of a couple of dollars.

The comments made here are the personal opinions of myself, they are suggestions only and should be followed only after careful consideration and training.

TIM PAYNE

RESPONSE TO PUBLISHING SUSPENDED MEMBERS' NAMES

Adrian Richards' letter (Guidelines No. 49) was brought up for discussion at the last Directors meeting. We could definitely see the point of what was being said, but as suspensions occur at all levels and printing them could serve to embarrass and humiliate members, it was hard to know what action to take. Also, unless people are prepared to go on record as reporting someone the Association could be putting itself up for slander. So things really aren't as simple as they sound. It seemed that maybe the best way to handle things is to seek feedback from the landowners and members, to then perhaps put the idea as a regulation at the next A.G.M.

THE NATIONAL DIRECTORATE

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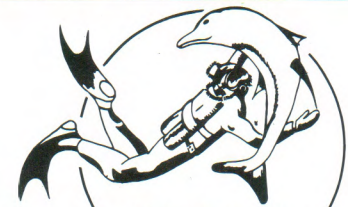
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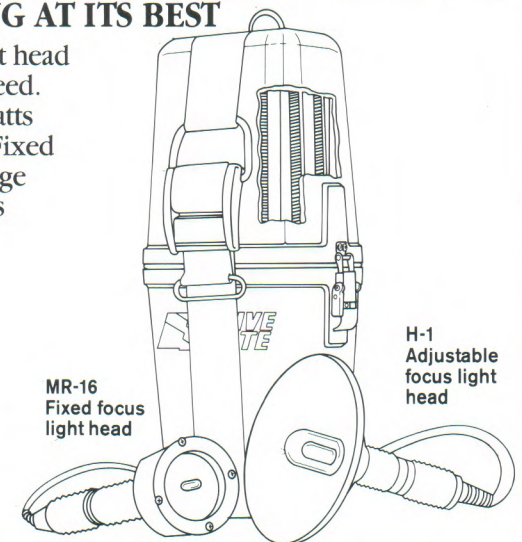
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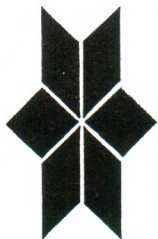
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DEPARTMENT OF STATE ABORIGINAL AFFAIRS

Mr Peter Horne
Manager, Site Access/Landowner Liaison
Cave Divers Association of Australia
PO Box 290
NORTH ADELAIDE SA 5006

Dear Mr Horne

Thank you for the copy of your record of the meeting between the Cave Divers Association, the South East Nungas Club and this office at Mount Gambier on 9 October.

This letter is to confirm that the department supports the direct consultation of the CDAA with the South East Nungas Club in relation to Aboriginal heritage issues.

With regard to the use of screens and padlocks on caves with Aboriginal heritage interest the department's experience is that such structures tend to attract vandalism and ultimately result in greater damage to sites. We prefer to use positive signs and visitors books.

Yours sincerely

Phil Fitzpatrick
SITE REGISTRAR
25/10/93

GPO Box 1563, 22 Pulteney Street, 1st Floor Centrepoint Building, Adelaide, SA 5001
Phone (08) 226 8900
Fax (08) 226 8999



PENETRATION: SOMETHING TO THINK ABOUT

by Brian Brumley

8.30 am July 7th. What a morning to start a penetration course. The rain was driving in horizontally, Portland Harbour was being blown away and here we are in Gouldens having a ball.

While reading the course outline informing us of what was expected, I thought things were difficult enough, but as I read on, there were those two dreaded words - "stress test".

Apprehension had to be the order of the day. But after getting underway with instructors Chris Brown, Tony Richardson and Greg Bulling in charge, things were not as bad as we had first thought.

After the first day's work of line following, lost line search and the use of jump reels, things started to fall into place. The format of the course helped exercises run smoothly with everybody busy nearly all the time. This efficiency being appreciated by those of us in wetsuits.

On the second day, after a morning's theory, we headed back to Gouldens. With a few exercises out of the road, Neville and I surfaced only to hear those dreaded words - "how about we do a stress test guys?". Well, it had to be done I suppose.

On completion of the exercise Neville and I both agreed that Chris Brown had put us under more stress on his line following work the previous day. With the stress test behind us the only worry was the theory and communications test.

After the first three days work in Gouldens it was a pleasure to hear that we would be diving another site on day four. Gouldens was not that bad because most of the time we were blindfolded and could not see anyway. The next two days diving was carried out in cave and penetration sites which was the whole reason we were there and we were not disappointed.

We completed the theory test on day three and although it did not seem that difficult, we all agonised over it until we were given the results on the last day. The communications test was a little different. As my partner and I walked into the test, the instructors looked a bit "sheepish" which made us contemplate our fate.

With the course drawing to a close on day five, all eight participants in the course had passed. This was mainly due to the attitude with which everyone approached the course and the in-water training everyone had done beforehand to refine their diving skills.

Although the course ran like clockwork and a lot of work was done, there was also some time for relaxation. Nothing could have filled the bill more than a slide presentation and a few "true" stories from Chris Brown. Everything Chris told us sounded fine until we heard a chuckle from Tony and Greg who had either heard the stories fifteen times before or the truth had been a little bent.

The Penetration Course was an informative and eye opening five days with not only diving skills being learned but friendships also being made. If a Penetration Course is the next step in your cave diving and the idea of diving new sites excites you, why not do it? What's holding you back?

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Dates: APRIL 18-29 1994

Contact: CHRISTOPHER BROWN
Ph: (08) 269 5793

CDAA SITE ACCESS AND RESEARCH REPORT

1992 – 1993

by Peter Horne, Manager

Site Access Committee and Mapping/Research Group

It has been a very busy time for the Site Access & Landowner Liaison Committee and the Mapping & Research Group during the past 12 months. The Association currently has access to more caves than in the entire history of Australian cave diving, and we are now in a much better position to tackle the new and equally-important realms of cave management and conservation.

However, along with the good new comes some news which is not so welcome! Just a week before our Annual General Meeting in Mount Gambier, a ladder-fall incident on Barnoolut Estate – one of the Association's most treasured and respected properties – prompted the Manager, Colin Traeger, to withdraw cave diving access permission so that more comprehensive safeguards (including proper belays and harnesses for climbers etc) could be discussed and brought into being. Because of the importance of this issue, the Directors themselves are also personally involved in discussions with Colin about the various ideas and options with a view to coming to a realistic, cost-effective arrangement, and members are asked to be patient while these aspects are being addressed. We have enjoyed many years of good liaison with the Managers of Barnoolut to date – like all landowners, they do NOT have any obligation to letting members dive on the property – and a lot of thought and consideration will need to go into the present negotiations.

I hope that this recent problem, while important, will not overshadow the many achievements that the Association has accomplished since 1992's A.G.M. There is far, far more to the aims and objectives of the CDAA than merely serving as a body for gaining access to popular diving sites (although this is certainly a major aim).

In particular, members need to understand the pressures many responsible landholders face these days, and the Directors and site access members are always striving to achieve a suitable balance in access issues ... this is what "negotiations" are all about! Access today is also far more

than just arranging when and where to open gates; many complex discussions and arrangements are frequently taking place "behind the scenes" so that members can gain access to sites with the minimum of paperwork and inconvenience. Also, previously-unknown issues such as legal aspects, scientific, community and Aboriginal concerns and modifications to hazardous new sites need to be carefully researched and responsibly addressed; not the easiest of goals when you remember that most involved members are volunteers with no legal or scientific backgrounds.

Probably the best-known research projects "on the go" at present are the mapping operations in Little Blue Lake (under the co-ordination of video cameraman Ken Smith) and The Black Hole (being run by myself and on hold during the closure of Barnoolut), along with the lesser-known operations in Nettle-Bed Cave (Grant Pearce) and Tank Cave (Phil Prust). The Little Blue study has almost been completed, but The Black Hole study is by far the most time-consuming active project at this time, with some 20-odd recreational divers in total putting in around 150 manhours (and womanhours – sorry again, Linda, Selena and Jane!) to date. More than 180 dives have taken place during this project ... it's been great to see so many "new" research-oriented divers, many of whom I had never met prior to the commencement of this study, being prepared to run around underwater with a tape and wet-notes so often!

A huge amount of information has been collected about the Black Hole without so much as a minor injury occurring (despite some mischievous and unfounded rumours which implied that a recreational diver's decompression injury was related to the official project), although four famous-brand dive computers mysteriously failed or flooded at various times! Almost 30 star-dropper pegs have now been placed in strategic positions throughout the Black Hole, and these have been surveyed in so that wall, floor and ceiling measurements

can be taken from lines connecting them together. I have tried to keep interest high in the Black Hole study by running trips as frequently as time, availability of divers and finances permitted, and once again I would like to take this opportunity to mention that as far as I am concerned, other (non-research) divers are always welcome to visit the sinkhole while our mapping work is being done elsewhere in the feature. We are especially keen to gather more data about the rare wall formations which were recently identified by researcher Mia Thurgate as "stromatolites" (Mia's recent work in Woolwash Cave, where she identified the site as being of exceptional natural value, will be familiar to members who have an interest in such matters). On this point, divers are requested to be careful when they are in the shallows of the Black Hole (and the other sinkholes, especially Gouldens Hole and the Sisters), because a lot of damage is being accidentally done to the soft stromatolitic forms there.

I expect that this study will involve perhaps another half-dozen trips before the sinkhole will have been mapped to a depth of 40 metres in far greater detail than was done, for example, with the early-day maps of Kilsbys Hole and The Shaft. Finally, our efforts in the Black Hole were also reported by David Kellet of Channel Nine News in Adelaide, resulting in a good 2-minute positive promo for the Association on prime-time news – thanks for your support there too, Dave!

On to the work being undertaken in Nettle-Bed and Iddlebidy caves now. These efforts are perhaps not so well-known or outwardly dramatic, but they are especially important because the Association's ability to recognize scientific and complex cave diving sites is being put to the test here. Nettle-Bed and Iddlebidy require direct dealings with both the Aboriginal Affairs Department and representatives of the local Aboriginal people (via the South East Nungas at the moment; please refer to the related letter in this issue of Guidelines) before final access and research operations can be undertaken, and Grant Pearce, Phil Argy and I have spent a considerable amount of time discussing various considerations

and needs with the involved parties. In addition, the recent appointment of a Government archaeologist, Vivian Woods, will mean a lot more CDAA involvement as detailed plans for assessing the sites for possible underwater archaeological excavation and site protection work get underway; and in the midst of this, we are also trying to work out some sort of access for qualified members.

The possible introduction of a formal access agreement for Little Blue Lake has also been raised by Port MacDonnell Council, as has the Association's renewed lease for Allendale Sinkhole. Little Blue recently "entertained" a new "visitor" in the form of a Mazda which mysteriously appeared at 24 metres on its north-eastern side earlier in the year, and when some divers reported feeling sick after tasting something strange through their regulators and seeing many dead fish and yabbies, arrangements were made by the Site Access Committee for Port MacDonnell Council to get some water sampling done and to have the vehicle removed (despite objections from some locals who appeared to believe that it should be left there as a tourist attraction, for some strange reason). Quite apart from adding contaminants to the groundwater (fuel and oil, etc), leaving cars like this in sinkholes is a grossly irresponsible abuse of a valued karst feature in this "enlightened" age of cave consciousness, and such actions would also encourage other vandals to dump their unwanted vehicles and trash in the sinkhole as well.

Fortunately, the sampling found nothing abnormal about the water, but regrettably, attempts to formally charge the local person who was responsible for the dumping were unsuccessful.

On a more positive note, a number of ideas to improve both cave diver access to, and tourism interest in, Allendale Sinkhole are currently being investigated. Several Government departments, the Port MacDonnell Council and the local Lions Club are all involved and very keen to support these suggestions, and they will result in safer access conditions and the creation of another interesting tourist cave

Continued on next page

CDA SITE ACCESS AND RESEARCH REPORT 1992 - 1993

Continued from Page 11

for the region. An integrated demonstration weekend involving divers with diver/surface communication and live video system is being planned for late January, and this should be of great assistance to CDAA/Port MacDonnell community relations as well! We are also investigating various gating and fencing options which will tie in with complex CDAA Public Liability Insurance issues that are presently being addressed ... these might involve the installation of a mesh over the top of the cave and the placement of informative tourism signs.

With the recent amalgamation of the Department of Lands and the National Parks and Wildlife Service to become the **Department of Environment and Natural Resources** (after earlier being known as DELM - the Department of Environment and Land Management until recently), concerns have been expressed about what this could mean with respect to caves on the former Lands Department property - Ewens Ponds, Gouldens Hole, The Sisters and Fossil Cave in particular. Fears about changes to the access arrangements currently in force, and the possible introduction of a permit/fee system, are premature but entirely understandable, and the local management of DENR have shown a great willingness to discuss all aspects of the new arrangements with the CDAA as events progress. It is sincerely anticipated that the relatively inflexible time-slot system in use at Piccaninnie Ponds will NOT be

introduced in these other sites at this time; members will be kept advised of developments in Guidelines. At the moment, all that is required of members is their signatures on access indemnities.

Discussions about minor modifications to Gouldens Hole and Fossil Cave led to DENR's support in allowing some work to be done on the walk-down ramp at Gouldens to alleviate slippery falls, and Fossil Cave's step-down area, where a large block has been placed to increase safety. Also, at DENR's request, the old palaeontological reference lines in Fossil Cave which previously connected the research pegs together were removed to reduce the hazard potential in this cave (thanks again for arranging that, Janine!).

DENR also raised the issue about a reported increase in damage to the peat around the ladder in the 3rd Pond at Ewens Ponds and an apparent reduction in the flow-rate between the three ponds, but flow data obtained from the Engineering and Water Supply Department (courtesy Kevin Mott) showed that no significant reductions were recorded. And, while on the subject of DENR-related issues, a recent small project involving the mapping of the Turtle Pond and the First Pond at Piccaninnie was undertaken by myself and Peter Girdler some months ago in an effort to provide base-line data for future plant die-back and regrowth monitoring work. This was just one of the many little events which went a long way towards between CDAA/landowner liaison during the year!

Continued next issue ...

KNIVES

by Stan Bugg and Des Walters

For a long time we have been looking for the ideal knife for our two specialist areas - cave diving and commercial diving. Regular dive knives just do not have the qualities we seek for these activities.

Such a knife must be:-

- small;
- able to be clipped onto our harness or BC so it is always accessible;
- attached to the harness in a failsafe manner;
- retrievable with one hand;
- as tough as possible; and
- razor sharp - sharp enough to cut through a line in a cave, or, in a real emergency on a commercial dive, be able to sever a surface supplied diver's telephone and umbilical (air) line.

A tall order? We began to think so too. Certainly no commercially available diver's knife has measured up so far.

But we think we have finally found a range of knives that will do the job. Made in Japan, by SEKI, a company which has a blade

manufacturing tradition going back 750 years, is the CLIPIT range of folding knives. They have been produced for SPIDERCO in America.

These are folding knives with a lock blade, featuring a serrated edge, and a handle of either stainless steel, or Zetyl, which the manufacturers claim is acid resistant, impact proof, and almost indestructible. All knives have a clip for attaching to pockets or harness, and a hole in the handle to attach a lanyard.

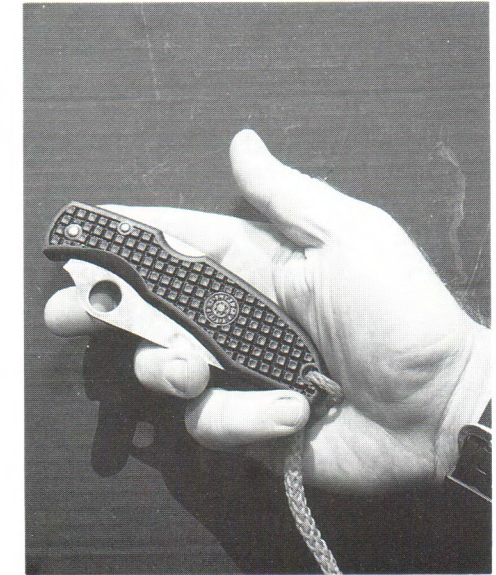
These CLIPIT knives can be retrieved and opened with one hand in seconds, and the serrated blade is incredibly sharp - sharp enough to cut through 8mm hemp with one stroke!

So my TEKNA knife/AB iron/bayonet stays home when I am cave diving, or performing underwater work ... and my CLIPIT ENDURO comes along instead.

The CLIPIT ENDURO retails for approximately \$70.



Clipit Enduro opened.



Clipit Enduro in folded position.

*"After a long night's drive, or a hard day's dive
Come and stay with us.*

*Our units are warm and comfortable
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WORLD'S LARGEST UNDERWATER CAVE ROOM (and 2nd deepest dive)

by Sheck Exley

After Andrew and Liz Wight, Ron Allum, Phil Prust and my other expert CDAA guides showed me the awesome room in the Shaft during my visit downunder in June, 1992, I didn't think it was possible to ever see anything more gigantic underground. Soon afterward, Jim King discovered a more voluminous room at Long Island in the Bahamas (Dean's Blue Hole), but the fact that it is mostly vertical (196 msw deep) and has a gaping 26m x 37m hole in the ceiling, makes it much like an open dive rather than a cave room dive. While I haven't dived Jim's marvelous find, I suspect that it would be as impressive as the incredible room at the Shaft. Frankly, I didn't see how anything could.

I was wrong.

On August 10, 1993, a joint South African/U.S. expedition led by Charles Maxwell became the first to reach the bottom of a huge underwater cave at Bushmansgat, South Africa, at a depth of 263 mfw. The group also surveyed much of what is clearly the largest underwater cave room yet discovered. The record-setting team included Maxwell, biologist and expert cave diver Andrew Penney, and Africa's two top deep divers, Nuno Gomes and Boetie Scheun. From the U.S. came Alan Riggs, USGS hydrologist and dive leader of the expeditions that made the two deepest cave dives in the U.S. to date, and Sheck Exley. Nuno had previously made the deepest descent in the cave (to 150 mfw), and sounded the depth beneath the cave entrance using a shot line.

The upper 100 mfw of the cave was surveyed using a side-scan color imaging sonar operated by Barry Pardey of Overseas Technology (Pty) Ltd. Sections taken at depth intervals of 10 mfw revealed a vast

chamber that rapidly expanded with depth, reaching a maximum length of 250m and width of 70m at the -100 mfw level. Dives were made to that depth on two of the walls, revealing that the pronounced overhang continues to even greater dimensions below. The estimated volume of the single room, entered by a 1m x 3m crack in the ceiling, is at least 4.43 million cubic metres, or almost four times the size of the next largest known underwater room, Dean's Blue Hole in the Bahamas. Only three air-filled rooms, all in Malaysia or New Guinea, are larger. Future investigations will probably reveal that Bushmansgat is also larger than at least two of those rooms.

The deepest dive (263 mfw) is second only to Exley's 1989 descent to 264 mfw at Mante, Mexico. The maximum depth of Bushmansgat will probably be found to be considerably deeper, since the dive was made almost directly beneath the surface opening, on a sloping bottom. No effort was made to follow the sloping bottom deeper because of an attack of HPNS.

All deep dives were conducted using the DRX software, based on Exley programming of the A. Buhlmann ZHL-16 model and Exley's dive planning algorithms. Some special problems encountered were the high altitude of the site, over 1500 metres msl. For example, a Cross conversion of the deepest dive, 263 mfw, would result in a theoretical dive to about 330 msw. Nevertheless, no dcs symptoms were reported following any of the dives, continuing the DRX software's perfect safety record.

The deepest dive was successful due to the efforts and assistance of the entire team, as well as the cave's owners, Andries and Debbie Van Zyl. Special lights we manu-

factured by Dive Rite Manufacturing and the dry suit used included a "P-valve" by the Floridan Aquifer Survey (Roger Werner) and the marvellous electric HEATER made by the Repetitive Diver, Inc. The special equipment was made necessary because of the long deco in cool (19 degrees C) water. Special regulators were prepared by William Dooley. All equipment performed flawlessly, including the lights.

The occurrence of HPNS reported below 210-230 mfw is only the second such event reported thus far in technical (deep scuba) diving. Following a descent rate of more than 30 mpm to that depth, Exley reported that the first symptoms were visual disturbance, the entire field of vision becoming a series of small congruent circles with black dots in their centres. Distance vision also appeared to deteriorate, objects appearing to blur. Less than a minute later and 9-15 mfw deeper, the diver reported itching all over his body, quickly becoming a rather painful stinging sensation. Now descending at only 9 mpm to forestall the HPNS, the diver reported the onset of tremors, which increased until reaching the bottom at 263 mfw. All symptoms disappeared during a 30 fpm ascent to the first deco stop at 120 mfw. It is

not yet understood whether the HPNS was the result of the rapid descent rate or insufficient narcotization. The END for the dive was 79 msw: the diver had made deep air dives to 103, 122, and 126 mfw in the four days prior to the 263-foot trimix descent.

Strangely, Nuno Gomes, who reported HPNS tremors on his previous descent to 150 mfw, encountered no HPNS when he dived to 177 mfw during the project. This is despite using the same mixture and rapid (approx. 30 mpm) descent rate.

We would like to thank all of our American sponsors for their generous contributions of equipment and training:
Dive Rite Manufacturing
The Repetitive Diver
The Underwater Connection
The Floridan Aquifer Survey, Inc.
Hal Watts' Forty Fathom Grotto
William Dooley
Paul DeLoach
Mary Ellen Eckhoff
DEEP, Inc.

Editor's Note: HPNS = High Pressure Neurological Syndrome. Lack of nitrogen in mixed gas diving at depth produces uncontrolled shaking.

Temporary National Director Situation

Fortunately for me (Lance Mitchell) but perhaps less so for the Association, I have been recently placed in yet another role within my professional organisation (work, that is) that will require long hours and little dedication to anything else for 3 to 6 months.

In recent times I have found that this is already resulting in the Association not getting as good a job done at the Directorate level as it deserves.

Recognising this, in accordance with the Constitution Sec. 17b(i) the Business Director, Lisa Bernasconi, will act in the National Director's position in my absence, and consequently we are seeking interest from people wishing to act as Business Director for that time frame. (To: CDAA, P.O. Box 290, North Adelaide, 5006, by 1st February 1994).

In the event of more than one interested party we will "interview" each and choose appropriately (under Sec. 16(b) of the Constitution).

As I am sure of the ongoing nature of the new "work" position I therefore do not wish to formally resign as the situation may alter and hence allow me to return to "active duty".

Please refer all matters to Lisa until further notice.

There are a couple of new battery chargers suitable for the battery packs commonly used with diving lights. They are both designed to charge from a car battery and, as such, are especially useful for diving remote areas with no access to mains power or for "topping up" between dives.

The most basic of these is the Samlex SU 2401. It's a small black box which plugs into a car cigarette lighter. It boosts the car's nominal 12-13 volts up to 14.7 volts and delivers 1 amp of current, ideal for most of the 8 to 10 amp hour batteries commonly used.

I cannot comment on the operational efficiency of this device. I attached mine directly to the car battery which caused it to glow vividly for a few seconds, produce clouds of white smoke and melt, after which it didn't work any more. It may be that you cannot attach them directly to the battery, needing instead to use the cigarette lighter, or that the device I purchased was faulty. Samlex have admitted that a number of these chargers were faulty and have agreed to replace mine. New stocks were available from July 1993.

The other charger worthy of a mention is the K1660 from Altronics. This is a very impressive large thing which has several dials, switches, buttons and even flashing lights. It is designed to fast charge Ni-Cad batteries.

Ni-Cad batteries are complicated - if you charge them wrongly they tend to bugger up and are far less accommodating of error than Gel-cells. Charging them too slowly can be bad for them - they build up little crystals inside; too quickly overheats them and inner goo (whatever it is) boils out.

The Altronics K1660 is known as a "smart charger" and indeed looks like one. It monitors the state of the batteries and

delivers just the right voltage, staying a fraction ahead of the charge in the pack. It will actually deliver up to 6 amps of current if it feels that that's o.k. and will charge a 4.5 amp hour 12 volt pack in about 50 minutes from flat. It is designed not to overcharge, has reverse polarity protection, will cease charging if it thinks the car battery is going to go flat and has a trickle charge function so it could be used to charge gel-cells. It can deliver a range of voltages - 6, 7.2, 8.4, 9.6, 12 and has a custom charging position which can deliver up to 32 volts. Once it has charged the pack it automatically switches to trickle charge and you can wire your own charging rate for this.

The trouble is it's a bit complicated.

It is available only in kit form and can be assembled in a matter of a few months by any professor of electronic engineering with a modestly equipped laboratory. Failing that I am told that any skilled hobbyist can put the thing together with a soldering iron. Personally I can change a lightbulb only with close supervision and had to contract out the manufacture of this device.

It does seem to be very good indeed. I get an extra 10 minutes burn time from my light and can easily

recharge between dives, either through the lighter socket or directly from the battery.

I cannot say whether or not it is really kind to the batteries. They are supposed to last through 1000 cycles so I will write a follow-up article in 2003.

Both of these charges are available from Force Electronics or they can probably be obtained from any similar sort of store.

Coming next issue

► "THE SHAFT" - continued

► SITE ACCESS REPORT - part 2

"It does seem to be very good indeed. I get an extra 10 minutes burn time from my light and can easily recharge between dives, either through the lighter socket or directly from the battery."

On Saturday 20 November, a second group of CDAA Penetration Divers who were allowed access to Tank Cave for the first time under the current access arrangements (refer Guidelines Issue 48), was privileged to visit one of the most beautiful and extensive cave systems in the world. Tank Cave comprises of 6km of inter-connecting passages of which most are not completely mapped yet. It is the only known cave of its type in the Mount Gambier region. As many of the remote parts of the cave are still unexplored, the extent of this system is not known. The exploration and mapping of Tank Cave continues by groups of experienced divers implementing the complex procedures involved in systematically "pushing the known boundaries of Humankind".

After signing the appropriate indemnity forms we made our way to the property where the cave entrance is found, in an undulating field surrounded by pine forest that contained some cattle, a windmill and a concrete water tank. The entrance to the dry cave and lake is via a rectangular hole in the ground that is about 2 metres long by a metre wide through 3 metres of limestone to the dirt mound, which is 4 metres below the surface, which leaves a 1 metre gap to crawl around inside the lake entrance area. The dry cave contains some limestone formations.

The divers were divided into 2 groups, with each group accompanied by a landowner liaison officer. Each group planned an intended course using the maps provided to them. We were basically allowed to plan our own dives as long as we kept to within the main passages, that no jumps to minor passages (which took great restraint) were to be made and the usual "turnaround"

constraints regarding air rules were observed.

Equipment used on this dive is mandatory for penetration level diving. All divers used high capacity tanks. Most divers wore dry suits and some used side mounted tank configurations. The lake is about the size of a bath tub, and it is from here a blue and white line enters the water to commence its voyage through the labyrinth. Once past the entrance restriction, which is similar to the entrance restriction in Englebrechts West (except there's about four consecutive restrictions), the cave opens to a large room

with clear water in contrast to its entrance passage. In the passages I saw, the nature of cave seems to change every 50 metres. Sometimes the passages will narrow and take on the appearance of sections of Engelbrechts West cave, then only to widen to 5L250 type dimensions. The depth of the passages vary also. All along the way we could spot small side passages intersecting the main passage beckoning to be explored.

A special thanks on behalf of everyone who can now dive this site should go to the people who helped open it. Tank Cave has opened new frontiers for

responsible cave exploration in the Mount Gambier region.

First timers in Tank Cave: Rob Boucher, Gary Bush, Richard Servadei.

Acting Landowner Liaison Officers: Paul Arbon, John Dalla Zuanna.

Mapping: Phil Prust, Richard McDonald.

Eligible divers wishing to dive Tank Cave must apply in writing to:

CDAA Tank Cave Diving

4 Rosella Street,

Modbury Heights, S.A. 5092.

Access conditions apply. See Guidelines 48 for further information.

"The exploration and mapping of Tank Cave continues by groups of experienced divers implementing the complex procedures involved in systematically pushing the known boundaries of humankind."

"THE SHAFT" – THE BOTTOM IS REACHED

by Andrew Wight

The Shaft is perhaps the best known underwater geological feature in South Australia's South East. Just a few kilometres from the small township of Allendale East on a dairy farm owned by the Ashby family is one of the world's largest underground lakes.

The Shaft has always been regarded by cave divers in Australia and overseas as one of the "holy grails" of diving. The cave entrance lies in a cow paddock and is nothing more than a man hole sized opening in the middle of nowhere. On first inspection most people would write it off as just a grubby little hole not worth diving, but looks are deceptive and what lies below is an underground chamber comparable in size to the Melbourne Cricket Ground.

The chamber is filled with the purest of fresh water and is crystal clear, the visibility infinite, the only limit to seeing is the power of the lights the diver carries. From the surface of the lake you look straight down 35m of water to a pile of rubble placed there by the farmer clearing his paddock. Perhaps he thought he might fill this mighty hole in!

The Shaft has long been the obsession of many cave divers for its size, water clarity and from a special feature that determined its name. During the summer months when the sun rises overhead towards noon, the penetrating rays are directed down the opening of the cave and form an amazing "shaft" of brilliant sunlight piercing the depths below like a blue laser beam. For years, divers would patiently wait above the hole for their turn to play in the light of the Shaft below. Like players on a huge stage divers would hang suspended in water as clear as the air above and swim in and out of the shaft of light.

During the 60's and early 70's, hundreds of divers would make a pilgrimage to the

Ashby property to dive the famous shaft and the "bottomless" cavern below. The reputation of diving here had spread far and wide and the visitors book at the Ashby's reads like the who's who of diving. Photographers from America, England and Japan all travelled to the sleepy township of Allendale East to dive the Shaft.

TRAGEDY

The Shaft had now become more than a place to experience the thrill of the clear water and the shaft of light. It had become the ambition of many divers to see how deep they could descend into the cave and perhaps find the end or the bottom of the cave.

In the worse cave diving tragedy in Australia's history on the 28th May 1973, four experienced divers lost their lives in the Shaft. A group of divers from NSW planned to do a very deep dive in the Shaft. The plan was for 8 divers to descend to a depth of 60 metres where they would continue their exploration of the cave. A vertical shot line was rigged from the surface to the top of the

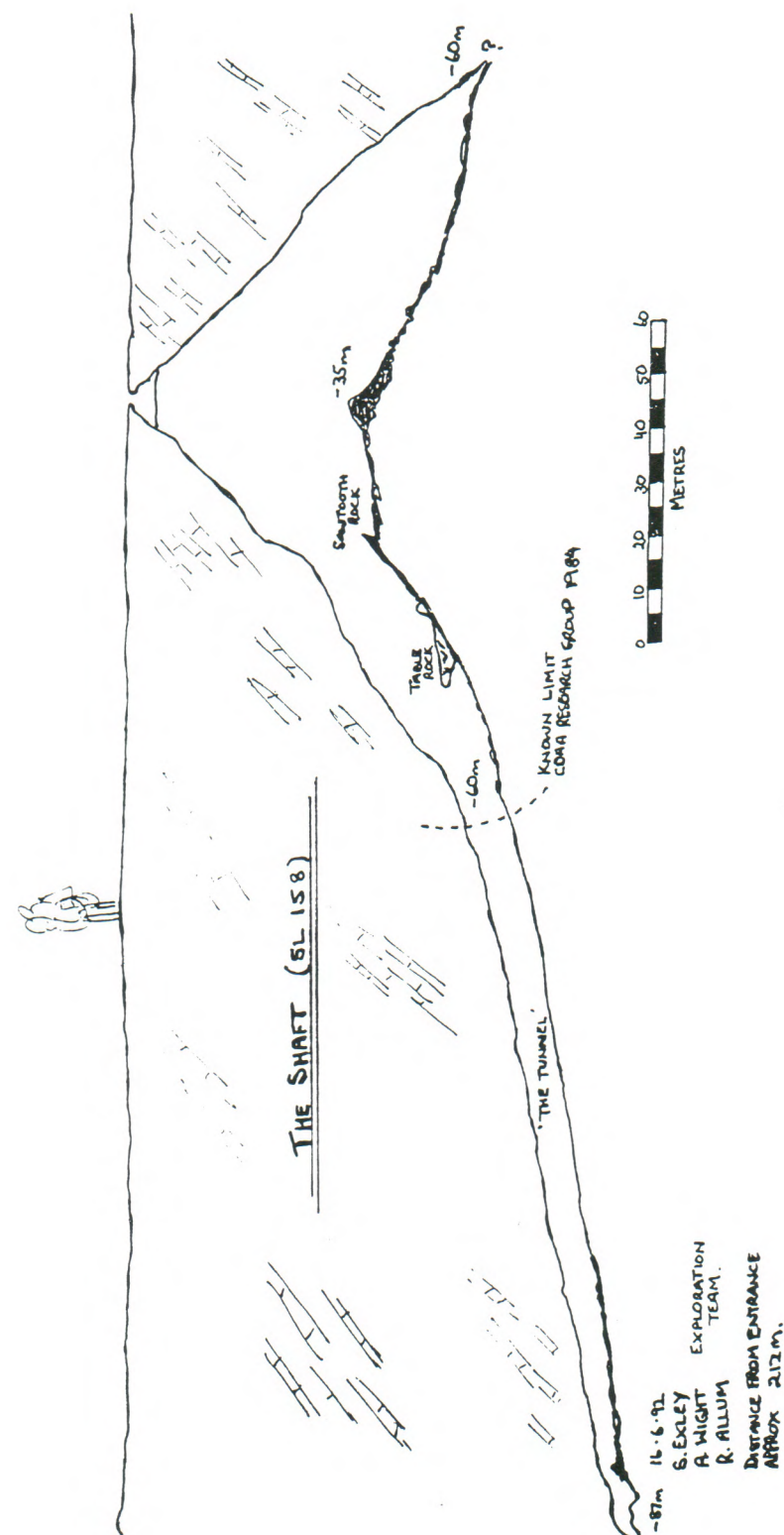
rock pile 35 metres down. The team chose not to use a guideline as they thought this would become entangled in the jagged rocks below.

The group of 8 divers quickly descended to their planned depth of 60 metres to then start their exploration. Just before this point was reached, one of the divers began to feel unwell and signalled that he was returning to the surface, the other divers indicated that they would continue with the dive.

By the time the returning diver reached the surface three more of his companions had also returned but four divers including the only woman in the party were still deep below. A search for the missing divers was conducted but they found nothing except a

Continued on Page 20

"Like players on a huge stage divers would hang suspended in water as clear as the air above and swim in and out of the shaft of light."



SKETCH BY
ANDREW WIGHT
14.6.91
ASF GRADE 2.

torch and a camera which belonged to one of the four missing below.

The police and ambulance were called and further searches were conducted but none of the four bodies were seen. It took 9 months before the first of the bodies were found by well known diver Terry Cummins and a film crew he was diving with at the time in the Shaft. What they saw or how deep they had been was unclear but one fact remained that the Shaft was very deep and the deaths would cause the cave to be closed to divers for the next 16 years!

The tragic accident in the Shaft fuelled the desire in every cave explorer to find the secret of this magnificent cave that drove four very experienced divers to their deaths.

AUSTRALIA'S DEEPEST CAVE DIVE

Sheck Exley is regarded by his peers as one of the world's finest cave divers and holds numerous world records to his credit including the deepest dive in a cave in Mexico where Sheck descended 265 metres on a solo dive using a special array of mixed gas. Exley's deep diving exploits have made him one of the most knowledgeable divers in the world on deep mixed gas diving.

Sheck had arrived in Australia in June 1992 to go on a cave diving lecture tour with myself and wife Liz. No visit for such a high profile cave diver would be complete without a trip to the "Mount". We had planned that after our Melbourne lecture and on the way to Adelaide, that Liz and I would take Sheck diving in Mount Gambier. It was only natural that Sheck wanted to dive "The Shaft" as it is one of our most famous cave dive sites. The other attraction was that I had discussed my ambition of one day diving the Shaft on mixed gas and exploring Australia's deepest underwater cave. Sheck was happy to help by providing the necessary training in the weeks prior to our trip to the Mount to safely use mixed gas on a deep cave exploration.

The plan was for a party of five divers consisting of Sheck, Liz, Ron Allum, Phil Prust and myself to do a trimix (Helium, Nitrogen and Oxygen) to a planned depth of 100 metres! I wanted to ascertain if the cave was deeper than 100 metres as speculated by many cave divers and to recce the cave for a possible major exploration push later in

the year.

The planning for the dive was meticulous, and having Sheck with his many years of mixed gas diving in caves was certainly a privilege. Sheck, Ron and myself were to "push" the cave whilst Liz and Phil would act as deep back up staying at 60 metres on the roof of the cave as we descended down the main tunnel.

Each diver wore a set of twin Sherwood Genesis 100s and an additional Genesis 100 filled with our special deep mix (trimix gas) for the dive beyond 60 metres. We would be using decompression tables designed by Sheck and we planned a 20 minute bottom time at 100 metres. The reason we chose to dive on trimix was that it is easy to mix and would give us a narcotic effect worked on an equivalent air depth of 189 feet for a dive to 300 feet.

The deep mix was a 14% oxygen mixture which would also help limit the effect of oxygen toxicity on our deep dive.

Continued next issue ...

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CAVES, CARBON DIOXIDE & YOU - Part 2

by Gary Smith

Published with permission from the Australian
Speleological Federation (A.S.F.)

Continued from previous issue

Simple Methods of Testing for CO₂

A naked flame is a simple method of measuring the relative percentages of CO₂ in the cave atmosphere. At 1% a lighted match will go out. At 1.5% a match head when struck on a match box will fizz but not light the match. At 4% a lighted candle will go out. At 6% CO₂ a carbide lamp will go out.

What to do when encountering CO₂

A test should be made as soon as foul air is suspected and if a match will not strike or burns only briefly, all members of the party should immediately exit the cave in an orderly manner without panicking. Inexperienced cavers in the group should be especially watched and guided to the entrance.

When undertaking vertical pitches in caves suspected of foul air the first person down should make thorough checks for CO₂. Besides carrying ascenders, a safety belay is a wise option in the event that the first person down may be overcome when suddenly descending into an area of high concentration. A safety belay should be mandatory with all pitches where a ladder is more than just a hand-hold.

Cavers should only enter areas of foul air during special circumstances, such as search and rescue operations, exploration and scientific work. Under these circumstances special precautions should be taken to ensure the safety of the group. For more information regarding safety precautions refer to ASF Cave Safety Guidelines.

Conclusion

By now you're probably bewildered as to whether the carbon dioxide in caves is harmful to you. The best advice is that if you have any of the common side effects, carry out a simple match test. If this indicates a high level notify the party leader and the group should vacate the cave.

Carbon dioxide, when treated with respect, is no worse than the other dangers in caves such as infections of cuts and

abrasions, histoplasmosis, hypothermia, equipment failure, becoming wedged in a tight squeeze, trapped or drowning by rising flood waters, sustaining injury from a loose rock dislodged overhead, and losing your footing or grip on small climbs. Despite the seemingly endless list of possible dangers, caving is still safer than driving a motor vehicle, which most of us take for granted.

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Santa's MAGIC CAVE

"Can we please dive in your cave?"
HO, HO, HO!!!



CDAА DUTY STATEMENTS

SOUTH-EAST REPRESENTATIVE

Responsible to: General membership. Matrix responsibility to National and Business Directors.

Position currently held by: Phil Argy.

Overview: To be a liaison with Government and Property Landowners under the supervision of the National Directorate. To represent the Association and Directorate at a local level.

Duties:

- 1) To be part of the Landowner Liaison Committee.
- 2) Monitor site access safety and security on a regular basis.
- 3) To act as a liaison with all landowners.

Value: To have a central contact for any business arising in or around the S.E. area, that is in direct concern of the Association.

RECORDS OFFICER

Responsible to: General membership. Business Director.

Position currently held by: Glen O'Connell.

Overview: To maintain the current level of records held by the Association, and continually update and review these existing records regularly.

Duties:

- 1) Receive, sort and re-address all mail forwarded from P.O. Box 290.
- 2) Receipt & post all cheques to Treasurer.

- 3) Update all members records including: renewals; courses; print & prepare new cards

- 4) Prepare members listings for Government, Landowners and Directors as required.

- 5) Prepare address labels for Guidelines and all mailouts.

Value: Focus for the records accountability of the Association to ensure the necessary maintenance and level of communication.

MANUALS & INSTRUCTOR PACKAGES CO-ORDINATORS

Responsible to: Business Director.

Position currently held by: John Vanderleest (VIC), Max Marriott (SA)

Overview: To be responsible for the postage of all manuals and packages necessary for all CDAА courses.

Duties:

- 1) To maintain stock levels of all manuals

(both the binder and information section) and packages.

- 2) To also post the above to instructors as they are ordered.

- 3) To receipt & post all cheques to Treasurer.

Value: To allow all CDAА courses to run smoothly by maintaining the availability of all necessary stocks.

CDAА NEWS

MANUALS & INSTRUCTOR PACKAGES

All manuals and instructor packages are now being managed by John Vanderleest (03) 416 9370 (Vic.) and Max Marriot (SA).

LAST CAT.4/PENETRATION CROSSOVER PROGRAM

The Directorate have approved the running of one more crossover/in-water education program. This activity will be conducted on the weekend of 19/20 February 1994 at Mount Gambier. All suitably qualified members apply to the Standards Director, in writing, no later than 31 January 1994. All enquiries to Standards Director only.

SITE CLASSIFICATIONS

More and more often we are hearing of dive sites in areas outside S.A. that have no definite cave or penetration rating. If you know of a site that:

- (a) you would like to know how to classify; or
- (b) you would like someone in the Association to assist you in classifying the site; please contact Chris Brown or Lisa Bernasconi.

CDAА RAFFLE WINNERS

First Prize: Alan Carmody, Lyndoch, S.A.

Second Prize: Kathy Jolley, Mt Gambier

Third Prize: David Paget, Balmoral, NSW

Use one and you may wonder what you ever did without it ...

The original DIVE RITE Cave Diving Reels are now available in Australia.

Professionally made using one piece injection moulded spools and anodized alloy frames. Each DIVE RITE reel comes with line and handy gear clip.

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INSTRUCTORS' CORNER

PROOF OF INSURANCE

Instructors that do not have proof of insurance cover for the appropriate "cave diving level of instruction" will not be able to instruct at that level after 1 Jan. 1994.

TRADING POST

FOR SALE: Dive Rite Wings B.C. system. Comprises wings, back plate & deluxe harness with pocket & line cutter. Ideal for twin tank setup. Approx. 60lbs lift. In excellent condition. RRP \$750. Sell for \$530.

Dive Rite enclosed reel with injection moulded spool. Clear see-through enclosure & approx. 100m line. In excellent condition. RRP \$200. Sell for \$125.

Tony Davis Ph: (03) 781 3820.

CDAА INSTRUCTORS

INSTRUCTOR	Cavern	S'hole	Cave	State	Telephone (h)
Ron Allum	•	•	•	NSW	(02) 398 4610
Stephen Arnel	•	•		VIC	(055) 26 5230
Bill Bernhardt	•	•	•	VIC	(03) 725 9716
Chris Brown	•	•	•	SA	(08) 269 5793
Marilyn Boydell	•	•		WA	(09) 349 5646
Stan Bugg	•	•	•	VIC	(03) 379 8791
Greg Bulling	•	•	•	SA	(08) 265 4978
Gary Bush	•	•		WA	018 318 837
Paul Cavanagh	•	•	•	NSW	(02) 804 7888
Terry Cummins	•	•		NSW	(02) 417 2800 (w)
John Dalla-Zuanna	•	•	•	VIC	(055) 62 9583
Ian Gothard	•	•		VIC	(03) 486 1810
Glen Harrison	•	•	•	SA	(08) 386 3237
Barry Heard	•	•	•	VIC	(056) 27 5511
Alan Jolliffe	•	•	•	VIC	(03) 874 7669
Nick Jones	•	•		VIC	(03) 282 4502 (w)
Simon Jones	•	•	•	WA	(09) 344 4343
Max Marriott	•	•		SA	(08) 47 3360
John McCormick	•	•	•	VIC	(03) 579 0570 (w)
Richard McDonald	•			SA	(08) 278 1829
Warrick McDonald	•	•		VIC	(03) 579 2600 (w)
Richard Megaw	•	•	•	SA	(08) 344 1733
Hugh Morrison	•	•	•	WA	(09) 409 9807
David Ogilvie	•			NSW	(02) 417 2800 (w)
Tony Richardson	•	•	•	VIC	(03) 754 6163
John Vanderleest	•	•		VIC	(03) 416 9370
Des Walters	•	•	•	NSW	(060) 25 3506
Bob Wealthy	•	•	•	VIC	(03) 789 6389
Liz Wight	•			NSW	(02) 428 2176
Frank Ziegler	•	•	•	VIC	(055) 26 5288

ODD SPOT

Upon arriving late for a recent CDAА promotions day, the CDAА representative gave his excuse which involved some goats and a smashed windscreen!

It appears that whilst using a company van to transfer a few goats to help keep the grass down in the yard, one rather excitable beast (not the CDAА representative) head-butted the windscreen, consequently causing some damage!

Who cares if it's not true – it beats the old excuse of "I slept in"!

CDA A SITE ACCESS

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

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

SITE	LEVEL	OWNER	ACCESS DETAILS
MOUNT GAMBIER - SOUTH AUSTRALIA			
Ewens Ponds	Nil	DENR P.O. Box 1046 Mount Gambier (087) 35 1177	Groups of 6 or more, phone/mail to Dept. of Environment & Natural Resources (DENR). Smaller groups, no need. Ponds usually closed 1 Sept. - 30 Nov. yearly (phone to check). Indemnity form to be completed.
Horse & Cart Tea Tree	CN CN	Peter Cunningham PO Box 643, Mt Gambier 5290	By phone or mail, 1 week prior. Ph: (087) 38 4003
Little Blue (Baby Blue)	S	Port MacDonnell	Little Blue - permission not required - must carry card.
Allendale	C	Port MacDonnell	Obtain key from Mt. Gambier Tourist Information Centre.
Gouldens 2 Sisters Fossil	CN CN C	DENR P.O. Box 1046 Mt Gambier 5290	Contact DENR by phone/mail prior to diving. Stay out of Gouldens when pump is operating. Indemnity form to be completed. Ph: (087) 35 1177
Ela Elap One Tree	S S	Mr. Peter Norman Private Bag 67, Mt Gambier 5290	By phone or drop in before diving. Accommodation also available. Ph: (087) 38 5287
Swim Through	C	Valerie Earl C/- PO Allendale 5291	Currently CLOSED pending new access arrangements.
Piccaninnie Ponds	S	DENR P.O. Box 1046, Mt Gambier 5290	Permit holders by phone. Be aware of delicate vegetation. Indemnity form to be completed. Ph: (087) 35 1177
Hells Hole Pines Mud Hole	S C C	Primary Industries S.A. (Forestry) PO Box 162 Mt Gambier 5290 (087) 24 2759	Contact Primary Industries S.A. (Forestry) by mail or phone to arrange permit. Collect permit from Regional Office, Jubilee Hwy. Mt. Gambier. No diving on total fire ban days. Permits will ONLY be issued Mon-Fri between 8.30am-4.30pm.
Kilsby's	S	Landowner leased to S.A. Police	Contact Peter Girdler. Restricted access conditions apply. (Refer Guidelines 47.)

SITE	LEVEL	OWNER	ACCESS DETAILS
MOUNT GAMBIER - SOUTH AUSTRALIA continued			
Black Hole Ten Eighty Bullock Hole	S S S	Mr. Colin Traeger, Manager, Barnoolut Estate PO Box 12, Mt Gambier 5290 (087) 26 6215	Contact CDA A Records Officer for diving deed THEN mail Booking Form to Colin Traeger 2-6 weeks prior, stating names/qual. of all divers, and time slot - 1pm Saturday, 9am or 1pm Sunday. WEEKENDS ONLY. Closed October-November for shearing.
Max's Hole	C	Mr T. Edwards PO Box 1319 Mt Gambier 5290	Phone or mail 1 week prior to dive. Ph: (087) 26 8277
Shaft	S	Mr & Mrs Ashby	ONLY by contacting designated "guides" who will arrange access. Refer Guidelines Issue 48 (July 1993).
Engelbrechts - East - West	C P	Mt Gambier Council	Obtain key from Mt Gambier Tourist Information Centre. Access agreement must be signed prior to diving.
Three Sisters	P	Millicent Council	Contact Peter Horne or Peter Girdler. Access available for experienced Penetration divers only. Low profile or side mounted independent air systems required. Access agreement must be signed prior to diving.
Idlebiddy (5L250)	P	Primary Industries S.A. (Forestry) PO Box 162 Mt Gambier 5290 (087) 24 2759	Open 1st & 3rd weekend of each month. Only penetration divers who have completed practical in-water cross-over. Phone Forests Clerk for bookings. 4 divers per group per weekend. Collect key from Lady Nelson. Must show permit.
McKay's Shaft	S	Mr. McKay	Contact Phil Argy (087) 23 0879. Small groups of about 4, good ladder climbing & SRT skills required. Access agreement to be signed prior to diving.
Tank Cave	P	Mr.& Mrs.R. Dycer	Apply in writing to: CDA A Tank Cave Diving, c/- 4 Rosella Street, Modbury Heights, SA 5092. Access conditions apply. (Refer Guidelines 48.)
NULLARBOR - WESTERN AUSTRALIA			
Cocklebiddy Murra El Elevyn Tommy Grahams Weebubbie	C P C C	Regional Manager C.A.L.M. 44 Serpentine Rd, Albany 6330	Must apply for permission to dive at least 4 weeks in advance of trip. Ph: (098) 41 7133. Small dive site next to main chamber: Sinkhole
NULLARBOR - SOUTH AUSTRALIA			
Warbla	P	N.P.W.S. Ceduna	Currently CLOSED to all diving subject to draft management policy.

CDAA PRODUCTS

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

BOOKS/VIDEOS

Cave Diving Communications. A new manual from NSS-CDS dealing exclusively with all u/w communications used in cave diving. Including touch, torch & line signals, & use of line arrows & jump reels. A must for all cave diver's bookshelf.

Cave Diving. A Blueprint for Survival. By world-renowned cave diver Sheck Exley, this is a case study of a number of accidents that have occurred in the USA and how to avoid them.

Basic U/W Cave Surveying. The standard publication for anyone remotely interested in research and survey techniques used in water filled caves.

Cave Diving - The Cave Diving Group Manual. Completely new edition from the pioneers of the sport, the British. This is easily the finest reference manual on our sport currently available. Covers every possible aspect including sump rescue solo diving and advanced oxygen and mixed gas theory. Expensive but well worth it.

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

S.R.T. Single Rope Techniques - published by the Sydney Speleological Society. This is the definitive work on all aspects of vertical travel in caves. Should answer most questions on rope work for cavers and cave divers alike.

DES Emergency Handbook - Revised 1990 edition by Lippmann & Bugg. Printed on waterproof paper this essential first aid manual should be part of every divers' kit.

NSS Cave Diving Manual - The standard reference manual in Cave Diving covering just about every conceivable topic. New edition

Research Handbook for Cave Divers - Peter Horne. Written by our most experienced research diver, the book is a compendium of years of experience from various sources. A valuable addition for those interested in the other side of cave diving.

Wukulla Springs Project. The U.S. Deep Caving Team edited by William C. Stone

The Darkness Beckons - Martyn Farr. The history & development of cave diving.

Deep Diving - Bret Gilliam, Robert Von Maier. An advanced guide to physiology procedures and systems.

Nullarbor Challenge (Video). Produced by Hanger 137. The true story of the exploration of the largest single limestone cave region in the world.

CLOTHING - NEW STYLE

"Anniversary" T-Shirts - long sleeve, Airforce Blue, medium & large only

CDAA T-Shirts - Grey Marle, medium, large, extra large

CDAA Windcheaters - Airforce Blue, medium, large, extra large

(A new range is in the "pipeline", so we're selling the last stock of the new style clothing.)

CLOTHING - OLD STYLE

Windcheaters - red/black logo, white/purple logo, blue/white logo. 18, 20, 22, 24

Polo shirts - blue/white logo, red/black logo. 18, 20, 22, 24

T-Shirts - blue/white logo, red/black logo. 16, 18, 20, 22, 24

CDAA KEYRINGS blue with gold motif, CDAA P.O. Box on back

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

STUBBIE HOLDERS Red with black logo. Foam/plastic shell.

PRICE

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Fully redundant twin bladders, with sepearate inflators and dump system.

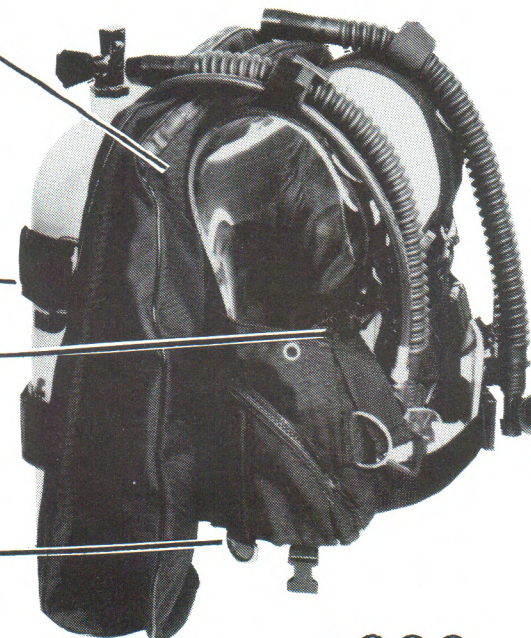
The 7700 Series is manufactured from high-tensile ballistic cloth, which both covers the vest and protects the bladder assembly.

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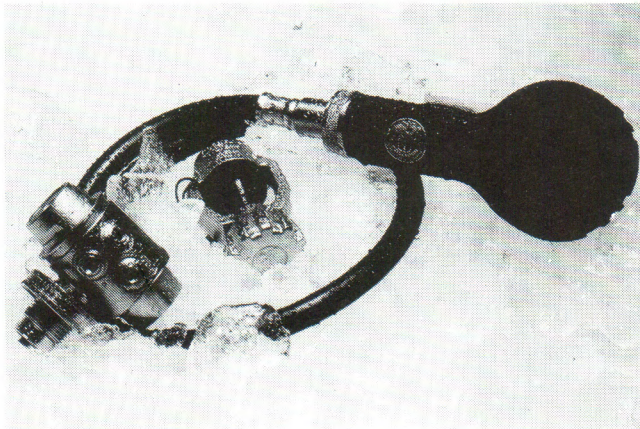


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