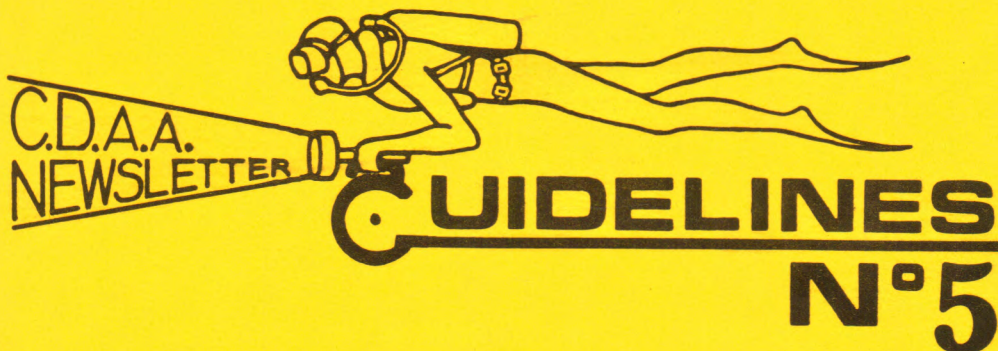


Registered for posting as a publication category B



## **CAVE DIVERS ASSOCIATION OF AUSTRALIA**

(Incorporated in South Australia)

C.D.A.A.

P.O. Box 2161 T

G.P.O. Melbourne. 3001

C.D.A.A.

P.O. Box 290

North Adelaide 5006



# GUIDELINES

NEWSLETTER OF THE  
CAVE DIVERS ASSOCIATION OF AUSTRALIA INC.

No:5, September, 1980

\*\*\*\*\*

## CONTENTS

CATEGORY 3 TEST	1
REMINDER OF ANNUAL GENERAL MEETING	1
HELL'S HOLE SPECIAL TRIP	1
TESTING DATES	1
NATIONAL PARKS NEW ADDRESS	1
A RICH MAN	2
DECOMPRESSION TABLES	2
DYSBARIC OSTEONECROSIS AND THE SPORTS DIVER	3
CAVE DIVING IN AUSTRALIA	6
PROPOSED CHANGES TO THE CONSTITUTION	7



1.

## REMINDER OF ANNUAL GENERAL MEETING

### Saturday 27th September

1. Category 3 Test will be held at Piccaninny Ponds at 9.00 a.m. Applications in writing to South Australia or Victoria State Testing Officers.
2. ANNUAL GENERAL MEETING at C.W.A. Hall, Mount Gambier - time 7.30 p.m.

### Sunday 28th September

Plans are being made for a special trip to Hell's Hole for those of you who wish to visit it and dive. Ian Lewis will organise the trip and arrangements will be made at the Annual General Meeting on Saturday Night. Hell's Hole requires a 20-metre climb in and out, and ladders and safety ropes will be supplied, but do not expect to be hauled back up. You must be fit and competent with climbing. Photographers are welcome, as the huge sinkhole is spectacular and climbers on the long ladder make a dramatic photo. Transport will be in your own vehicles, but some passengers can be catered for.

### TESTING DATES

Cat. 1 & 2 - Victoria will be held at the Oakleigh Pool, 8th November, 1980. Please contact Al Jolliffe.

### NATIONAL PARKS NEW ADDRESS

The new address for the National Parks and Wild Life Service has been changed to Box 1046, Post Office, Mount Gambier, S.A. 5290.

2.

## A RICH MAN

A rich man spent a lot of money on underwater scuba equipment, buying every gadget he saw.

While deep underwater, he saw a man who had no equipment. He couldn't understand it. So, he took out his special underwater writing set and he wrote a message asking how the man did it without any gear.

The man grabbed the pen and wrote back:

"You idiot! I'm drowning!"

## DECOMPRESSION TABLES

The question is frequently asked, "What decompression tables are recommended by the C.D.A.A." and to date there has been some confusion. To clarify this point, the C.D.A.A. follows the recommendations of the Standards Association of Australia in providing for alternative approved decompression schedules e.g. R.N., R.A.N., and O.S.N. Decompression Tables. This allows you the diver, the flexibility to choose your own tables, however we stress the importance of understanding fully the correct method of using these schedules.

To assist in this matter, the C.D.A.A. is publishing a paper describing the various tables and their correct usage. Note:- this paper in no way attempts to compare the difference between tables but rather to explain their correct methods of operation.

This paper will be free on request to all C.D.A.A. members - contact your state office. (To save time, enclose stamped, self addressed 9 x 4 envelope.)

Russell Kit  
(President)



### DYSBARIC OSTEONECROSIS AND THE SPORTS DIVER

"Dysbaric Osteonecrosis is an occupational disease of divers which is being detected more frequently in both sports and commercial divers. Until more information about the cause is known, treatment is largely unsatisfactory, and prevention of all decompression sickness is the best method of avoidance." (Thomas et.al. p.74)

This disease occurs in persons who breathe air under pressure. It can lead to a disabling arthritic condition due to the collapse of bone around a joint.

Dysbaric Osteonecrosis is thought to develop due to the formation of inert gas bubbles, or other agents, blocking blood vessels supplying living bone. These "starved" areas of bone may subsequently die and collapse.

The disease is associated with the same factors that predispose a diver to decompression sickness (bends). Some of these factors include:- inadequate decompression, previous decompression sickness and age (30 years and over). However, unlike the bends which can last up to 7 days, Dysbaric Osteonecrosis usually takes years to become apparent and its effects are irreversible.

The sports diver is in a higher risk category than the service diver, for unlike the latter, he or she, has not had decompression tables developed specifically for them. "The decompression schedules have generally been developed with experienced, conditioned subjects who range from 19 years to 45 years of age and meet military standards of physical fitness. Increasing age and body weight increases one's susceptibility to decompression sickness." (Wert et.al. p.494)

Navy divers are selected because their physiology is more tolerant of the stresses encountered in diving. When navy divers dive, their dive profiles are preplanned and monitored by surface personnel. Decompression facilities and trained medical personnel are close at hand.

Despite these precautions both U.S. and U.K. navy divers incur a bend rate of about 1% (Miles, 1962). Navy divers using U.S. Navy repetitive dive schedules have a 15% bend rate. (Acott, 1980.)

The incidence of Dysbaric Osteonecrosis among R.N. divers is 5%. It can be seen from comparison of R.N. rates that divers do not need to experience bends symptoms to develop Dysbaric Osteonecrosis. Other surveys reveal much higher Osteonecrosis rates among divers from other countries:-

Polish divers	7%
Japanese commercial divers	50%
German commercial divers	55%
Bulgarian divers	65%
Chinese commercial divers	80%

(Edmonds et.al. 1976)

It seems that prolonged exposures to breathing high pressure air is a major cause of Dysbaric Osteonecrosis. While this seems to be generally so, the disease has been recorded in persons with only one exposure to compressed air breathing. Furthermore, Osteonecrosis has been seen in caisson workers who have worked at depth equivalents of only 12m (39ft) of sea water. (Edmonds et.al. 1976)

Back to the sports diver. How many of us would be deemed to be fit navy divers? Is your back-up system on a parallel with either the R.N. or the U.S. Navy? And how often have you heard of "others", "pushing the tables".



There is a trend amongst Australian divers to use U.S. Navy decompression tables because they allow more bottom time, less decompression time, and allow deco. credit for time spent on the surface between dives. If these tables are used correctly, then they could be safer than the R.N. tables, for Mount Gambier diving. Instructions with the U.S. tables stipulate that if a dive is particularly cold or physically arduous then the diver must go to the next deepest depth increment AND to the next longest time interval. (Edmond et.al. p.378, 1976) Therefore in Mount Gambier (cold water) decompression for a dive to 100 feet for 25 minutes should be calculated as if it were for a dive to 110 feet for 30 minutes. The diver, therefore, would be required to stop at 10 feet for 7 minutes, instead of doing a non-decompression dive.

To minimize the risk of Dysbaric Osteonecrosis, and, of course, the bends, a very conservative table should be adopted by sports divers. The Royal Navy Physiological Laboratory tables (1972) were developed partly because of the realization that longer decompression times are required to avoid Dysbaric Osteonecrosis, and because sports divers do not always come up to service fitness standards. The R.N.P.L. (1972) tables have longer deco-stops, shorter bottom times down to a depth of 130ft or 40 metres, and slower ascent rates (15m/min or 49ft/min) than do either the R.N. or U.S. tables.

Because sports divers have limited facilities and because they may not always be "fit to dive", it would be in our interests to look at being more conservative than most dive tables advise.

Keith Evans

## REFERENCES

Dr. Chris Acott, Speaker at "Diving Seminar" organised by S.A. Fisheries Department, 29th May, 1980.

Edmonds C., Lowry C., and Pennefather J., Diving and Subaquatic Medicine Diving Medical Centre, Sydney, 1976.

Miles S., Underwater Medicine (2nd Edition) Staples Press, London, 1962.

Thomas R., and McKenzie B., The Diver's Medical Companion. Diving Medical Centre Monograph.

Werts M., and Schandelmeier N., The Underwater Handbook. (Shilling C.W., ed.) Plenum Press, New York, 1976.

## CAVE DIVING IN AUSTRALIA

The new book "Cave Diving in Australia" is now available at most leading dive shops or from the authors. This professional publication covers clearly and in detail all the information related to Category Testing for the C.D.A.A. and about Mount Gambier diving in general. Clear maps and diagrams make the book indispensable to cave divers. Nearly half the stock of 1000 has gone in ten weeks, so obtain yours while they last. Orders to Ian Lewis or Peter Stace, C/- Box 460, Post Office, North Adelaide, S.A. 5006. Price is \$6.50 per copy and 50¢ postage.



PROPOSED CHANGES TO THE CONSTITUTION

Some amendments will be necessary to make C.D.A.A. membership requirements more flexible, in response to requests from members and outsiders. The changes allow for Prospective Membership, for those who do not possess Category qualifications but joint the C.D.A.A. to obtain them.

## AMENDMENTS TO SECTION 6 "MEMBERSHIP":

- . line 3 "...... deemed to be a Prospective Member ...."
- . delete paragraph C.

Following this, insert the following paragraphs -

"Any Prospective Member shall be deemed to be a Diving Member upon:-

- a. having passed to the satisfaction of the Committee or C.D.A.A. recognised examiner, any tests or courses approved by the Committee as being mandatory to obtaining Diving Membership.

## AMENDMENTS TO SECTION 7 "MEMBERSHIP FEES":

- . delete paragraph (b). Substitute -
- b. "The prescribed fee must be paid before any form of membership is granted to intending members."
- c. remains as stated.
- . insert d) "If the prescribed fee is paid by an intending member in April, May or June, they are considered to be financial until 30th June in the following year."

AMENDMENTS TO SECTION 21 "VOTING"

- . delete (a). Substitute -
- "Each financial Diving Member (not Prospective Members) shall have one **vote** at any General Meeting or Annual General Meeting of the Association".