



## **CAVE DIVERS' ASSOCIATION OF AUSTRALIA**

(Incorporated in South Australia)

# **INFORMATION BULLETIN**

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

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CONTENTS

	Page
1.           Introduction	1.
2.           Sink Holes in Mount Gambier Area	2.
3.           Categorization of divers	2.
4.           Obtaining Permission to Dive	4.
5.           Equipment Requirements	6.
6.           Emergency Procedures	7.
7.           Useful addresses	8.

INTRODUCTION

The CAVE DIVERS ASSOCIATION OF AUSTRALIA (C.D.A.A.) was formed in September 1973, following the tragedy of a series of diving accidents in the freshwater sinkholes and caves of the Mount Gambier region of South Australia: accidents which resulted in several fatalities. At this stage, all holes in the Mt. Gambier area, both on private and government - controlled land, were on the verge of being closed to all divers. The C.D.A.A. was formed in an attempt to keep the holes open by providing a united front for all cave and sinkhole divers, to promote safe diving and to act as a self-regulatory body for the control of cave and sinkhole diving.

The C.D.A.A., a voluntary and non-profit organisation incorporated in South Australia is now, in conjunction with the South Australian government, attempting to ensure that divers who dive in the freshwater sinks and holes in the Mt. Gambier region are in fact experienced and competent enough to do so. Thus far, the C.D.A.A. has been successful in keeping the holes and sinks open. Such control and promotion of the sport by experienced people interested in it is preferably to control and restriction by legislators with little knowledge or appreciation of the sport. Authorities have so far accepted self-control of the sport by divers, but the C.D.A.A. still requires the support of divers to maintain its responsible position as representative of cave and sinkhole divers throughout Australia.

While the C.D.A.A. was initially formed to prevent either closure of the sinkholes or government control of diving in the Mt. Gambier area, the Association primarily provides an essential forum for promotion of education in all forms of cave diving throughout Australia. The aims and objectives of the C.D.A.A. include the advancement and development of all cave and sinkhole diving, the promotion of safe methods of cave diving and the exploration, research and mapping of underwater cave systems, not only in the Mt. Gambier region, but throughout the whole of Australia.

D.J. McIvor

President

Cave Divers Association of

Australia. 1977



2. SINK HOLES IN THE MOUNT GAMBIER AREA.a. CATEGORIZATION OF HOLES:

All popular diving locations in the Mount Gambier area have been categorized according to the type of hole as follows:-

CATEGORY ONE: Sinkhole or open cave without caves.

- Ewens Ponds
- Baby Blue
- Goolders
- Hell Hole

CATEGORY TWO: Sinkholes with caves leading off.

- Piccaninnie Ponds
- Eloh Elap
- Black Hole
- One Tree
- Ten - Eighty
- Sisters
- Scrub Hole

CATEGORY THREE: Water filled caves.

- Allendale East
- Pines
- Max 'R' Hole
- Bullock Hole
- Shaft
- Fossil Cave

b. LOCATION OF HOLES:

The location of the popular holes are marked on 'BROADBENTS' MAP NO. 212. The addresses of the controlling authorities for each of the holes are included in Section 7. of this Information Bulletin.

3. CATEGORIZATION OF DIVERS

C.D.A.A. Certificates will be issued to Category 1, 2, and 3, corresponding to the categorization of holes.

CATEGORY ONE:Pre-requisites

To have filled out an application form for C.D.A.A. membership and have included:-

- a. Membership Fees
- b. Evidence of completion of a basic scuba diving training course.
- c. Evidence of 20 logged dives which include 2 night dives and 5 dives to 20m.

CATEGORY TWO:Pre-requisites

- (1) To have satisfied all the requirements of Category One.
- (2) To have logged 5 hours of fresh water diving to Category One standard, with 5 of these dives to 30 metres.

CATEGORY ONE AND TWO THEORY REQUIREMENTS:

Answer a paper on diving in general, and fresh water diving specifically.

The syllabus for the theory test will be generally as follows:-

(1) Physics and Physiology of SCUBA diving.

- a. Boyle's Law and related pressure problems
- b. Dalton's Law
- c. Air Consumption

(2) Diving Illnesses.

Causes, symptoms, treatment and factors which increase susceptibility to diving illnesses, with particular reference to the following:-

- a. Bends
- b. Nitrogen Narcosis
- c. Gas Toxicity
- d. Pulmonary Barotrauma

(3) Practical Diving.

- a. Diving safety laws
- b. Specific fresh water diving problems
- c. Ability to plan a safe dive
  - (i) General dive plan
  - (ii) Low visibility dive plan
  - (iii) Silted out dive procedure

- (4) Plan a four man dive to 30 metres in a sinkhole with known silting problems, including in the plan all equipment required and all other details.

CATEGORY ONE AND TWO PRACTICAL REQUIREMENTS:

Practical tests for Category One and Two are carried out in a swimming pool and include the following:-

- (1) Demonstrate neutral buoyancy at 3m. (ie. shallow water decompression stop).
- (2) Demonstrate use of a buoyancy compensator by maintaining a set depth underwater, changing it, and surfacing correctly.
- (3) Demonstrate in-water knowledge of standard hand signals.
- (4) Demonstrate ability to follow a line and negotiate various obstacles while mask is blacked out.
- (5) Demonstrate ability to buddy breathe from a single hose regulator whilst following a line.
- (6) Demonstrate the ability to use a reel and tether line correctly while swimming with a buddy without a face mask.

TESTING PROGRAM - CATEGORY ONE AND TWO:

All candidates will be tested in both practical and theory to Category 2. standard, but will be issued with a Category 1. card.

On completion of the requirements for Category 2., update of card may be applied for without further testing, provided the application is within 12 months of the original test.

Note: \* All candidates must be financial members of the C.D.A.A. prior to the testing date.

\* Candidates must supply and wear all diving gear including depth gauge, contents gauge, watch, knife etc., for the practical test.

CATEGORY THREE:Pre-requisites

- (1) To have satisfied all the requirements of Category Two.
- (2) To have logged 20 fresh water dives to Category Two standard, with 5 of these dives to 35 metres.

Theory Tests

- (1) As for Category Two, however more thorough knowledge is required.
- (2) Planning a Category Three dive.
- (3) Procedure for minimising silting and action to take when silting does occur.

Practical Tests

Category Three practical tests are all carried out in Mount Gambier and are similar to the Category Two tests except that they are more extensive with a much higher standard required. Also, the tests are conducted in a sink hole rather than in a pool.

4. OBTAINING PERMISSION TO DIVE:

The issue of a C.D.A.A. certificate does not imply the holder of the certificate has automatic access to sink holes and caves.

The Association has full support of Government Departments, and most property owners recognize the C.D.A.A. certificate as the only one by which permission will be given to dive in caves or sink holes. However, in the case of private property it is at the discretion of the property owner as to whether permission will be granted to dive, irrespective of whether a C.D.A.A. certificate is held or not.

(a) Private Property.

As most of the caves and sink holes in the Mount Gambier area are on prime farming land, access to them is limited to the times when the property is not being worked in the vicinity of the holes, and only then if it is convenient for the property owner. It is strongly recommended that the property owner be contacted at least two weeks prior to the intended dive, requesting permission and stating the desired time and date of access requested, also the size and qualifications of the intended diving party.

A STAMPED SELF ADDRESSED ENVELOPE SHOULD BE ENCLOSED FOR REPLY.

If the reply is favourable then it is recommended that the property owner be phoned prior to the dive, confirming permission and seeking any information such as access for vehicles and precautions with fences, gates and stock.

At all times a C.D.A.A. certificate must be carried to enable verification of claims made with respect to qualifications. It is most unlikely that access to any hole on private property will be gained unless the intending divers present C.D.A.A. certificates to the landowner.

While on the property it is essential to carry out these instructions fully and to ensure that cars remain on tracks, litter is collected, gates that have been opened must be closed immediately the party passes through, and disturbance to stock must be minimised.

It is required that the property owner be informed of the safe withdrawal of the diving party and is thanked for allowing access.

(b) Piccaninnie Ponds.

Piccaninnie Ponds is controlled by the "National Parks and Wildlife Service" and a diving permit will be issued by the Ranger on personal presentation of a Category 2. C.D.A.A. certificate valid until the following 30th June. Annual renewal of the Piccaninnie Ponds permit can be obtained on written application to the Director of National Parks and Wildlife Service, Box 1782 G.P.O. Adelaide.

Address of the Ranger in Mount Gambier is:-

35 Canavan Road, Mount Gambier, S.A. 5290 Phone Mt. Gambier 25 1121

(c) "Holes" on Wood and Forest Land.

Divers presenting certificate cards will be given permission to enter Forest Reserves and dive in a stipulated sinkhole if their certificates carry the correct category qualification as overstamped by the C.D.A.A.

It is suggested that intending divers telephone the relevant District Forest Office beforehand to ensure that staff authorized to give permits are available.



5. EQUIPMENT REQUIREMENTS:

The following equipment is strongly recommended to dive Category 1,2, and 3 sink holes and caves.

Category One.

- Full length wet suit including hood.
- Mask and snorkel.
- Fins, if open heel type, buckles to be covered to minimise snagging.
- Weight belt, sufficient to obtain neutral buoyancy at three metres with vest completely deflated.
- Underwater watch, must be capable of measuring elapsed time.
- Knife, must be worn so as to minimise snagging.
- Depth gauge needle type.
- Tank, if fitted with "J" valve to be taped in downward position.
- Single hose regulator.
- Submersible pressure gauge.
- Dependable diving light (if required).
- Shot line and ladder (if required).
- Buoyancy compensator, oral inflator to be at least ½" diameter, spill point to be above level of armpit, must include pressure relief valve, can be SCUBA fed if required.
- Submersible decompression tables to be carried on all dives over 9 metres.

The C.D.A.A. does not recommend the use of neck straps unless there is a Velcro closure or spring clips on both sides of demand valve.

Category Two.

All equipment as for Category One, plus the following:-

- One dependable torch per diver, preferably 6 volt type.
- Reel and guide line must be used if going into side tunnels.
- Shot line.
- Spare tanks complete with regulators staged at intermediate depths.

Category Three.

All equipment as for Category Two, plus the following:

- Guide line which runs from surface to lead diver, line must be capable of being held and maintained taut by means of a suitable reel.
- Short tether line for second diver to be attached to main guide line.
- Octopus rig, or alternatively pony bottle regulator.
- Two stand by divers complete with all Category 3. equipment.
- Two dependable torches per diver.
- Spare tanks complete tied to guide line.

On all Category 1,2, and 3 dives, a dependable buddy is required who is also qualified to dive; adequate air is to be carried by all divers, and the maximum depth to be dived is 35 metres.

6. EMERGENCY PROCEDURE:

Memorandum issued by the Department of Anaesthesia and Intensive Care - Mount Gambier Hospital.

The emergency Management of Cave Diving Mishaps (Bends, Barotrauma) in the Mount Gambier Area.1. At the scene of the mishap:

- 1.1 The patient on being brought to the surface is given standard emergency treatment for bends (100% oxygen to breathe): coma position: artificial ventilation if necessary.
- 1.2 The patient is evacuated without delay to Mt. Gambier Hospital, in the company of a diver colleague who knows the history of the mishap.
- 1.3 Meantime, other members of the diving party alert Mt. Gambier Hospital (24 2211 or after hours 25 2213). The Royal Adelaide Hospital ("Urgent Line" 223 2855: ask for Intensive Care Unit) should be alerted in the situations where barotrauma or bends have occurred, which might necessitate hyperbaric compression at Royal Adelaide Hospital.

2. At Mount Gambier Hospital:

- 2.1 Medical Staff continue management.
- 2.2 Medical Staff confer with Royal Adelaide Hospital Intensive Care Unit re question of air or road evacuation.  
N.B. Flight preparation (Adelaide) 50 minutes  
Flying time (1 way) 80 minutes

3. If Air Evacuation is Used:

The lowest altitude compatible with safety should be used: the patient should breathe 100% oxygen.

4. At the Royal Adelaide Hospital: existing decompression facilities will be used, with the contingency of integration with R.A.N. equipment they should be adequate.

## 5. Divers are encouraged to report all mishaps to Dr. D. Walker and C.D.A.A. Box 21617 G.P.O. Melbourne, 3001.

6. H.M.A.S. Penguin N.S.W.  
Telephone 02 969 1444 ext. 300  
After Hours 969 3463  
Information regarding emergency decompression procedures.



Depth		Dive duration in minutes until commencement of ascent																											
m	ft.	8	10	11	14	15	17	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	
9	30																												No Limit
12	40																												No stop limit — 135 min.
15	50																												
18	60																												
21	70																												
24	80																												
27	90																												
30	100																												
33	110																												
36	120																												
39	130																												
42	140																												
45	150																												
48	160	10b	10b	10b	15	15	25b	25b	35b																				
51	170	10b	10b	10b	15	15	25b	25b																					
54	180	10b	10b	20b	20b	20b	30c	30c																					
57	190	10b	10b	25b	25b	25b	35b	35b																					
60	200	15	15	25b	25b	25b																							

Maximum depth

For subsequent dives below 10 m (30 ft.) within 6 hrs. decompress for combined durations and greatest depth. Where either dive exceeds 42 m (140 ft.) period becomes 12 hours.

REPEAT DIVES

KEY FOR STOPS															
Depth															
m	ft.	5	10a	10b	15	20a	20b	25a	25b	30a	30b	30c	35a	35b	
9	30	—	—	—	—	—	—	—	—	—	—	—	—	—	5
6	20	—	—	—	5	5	5	5	5	5	5	5	5	5	10
3	10	5	10	5	10	15	10	20	15	25	20	15	25	20	20

DECOMPRESSION TIMES IN MINUTES