



## **THE CDAA STANDARDS AND PROCEDURES MANUAL** **DEEP CAVERN Course Standards**

This is the Deep Cavern Course that will be required to be used as of the 1<sup>st</sup> June 2007. All previous Drafts (1-20) and Cavern/Sinkhole Course outlines should now be replaced. The Course is a compilation of papers presented by the Cavern/Sinkhole Advisory body, and notes from Barrie Heard, Stan Bugg, John Vanderleest and Linda Claridge taken at the Instructor Meeting. A document was presented by John Vanderleest to the Directors containing a précis of the information gathered from the Instructor meeting incorporated with his findings whilst acting as the Instructor Advocate. The final document covered input in regard to our legal and insurance liabilities.

***The following is the final course outline put together in regard to the previous documents and in response to further input from the Directors and other interested members, which has included all current CDAA Instructors. ...Thanks to the many Instructors who contributed.***

The Directors aim is to bring the previous Cavern/Sinkhole Course up to a standard that can be comparable world wide. It was felt by many members and Instructors that the previous course was falling behind as it was first published in 1998. The two names resulted in confusion about whether there were one or two courses.

History has shown that the CDAA has been at the forefront previously in its' teaching material and methods and presents this new draft to meet that criteria.

This document is Step 1 "Course Standards" which once finished will be followed by "Instructor Course Notes" then by "Student Course Notes" and by the student workbook and exams.

1. The Deep Cavern Course will be a "Stand alone" course and no longer able to be broken down into two courses.
2. Removal of the need for a diving medical examination only a medical statement (if answered in the negative will not require any further action)
3. Attention has been given to phase in the mandatory use of twin tank systems with a compliance date of 2008 for all training.
4. Entry level requirements :



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- Have been raised or returned to the level they were at before the introduction of the 1998 outline.
  - Are now comparable to other deep and technical courses.
  - Are now recognised for all other training agencies certifications.
  - Lessen the risk to CDAA Instructors using their Training agency Insurance to teach a dive course that takes students to 40m by requiring higher entry level certification, and more experience. Instructors should be aware that they need to be qualified to teach to 40m.
5. Decompression diving, which has often been the normal post course procedure for most sinkhole dives will now be allowed at the Instructors discretion, dependant on the qualifications of students and the Instructor.
  6. Acceptance of the fact that we (CDAA) teach “deep diving” and therefore require the equipment and pre training to take part in the course.
  7. The requirement for Instructors to meet certain time limits and skills in training, with recommended times that the student and Instructors are aware of.
  8. The emphasis on pool work rather than cavern for initial training, thereby allowing a six to one ratio in a pool. This will help protect the site environment. It provides for initial training for students around Australia before traveling to Mt Gambier, the Nullarbor or other approved sites to complete their course. This also gives the students a chance to alter gear setup after initial pool session if required.
  9. Hopefully the removal of “quick” courses by only allowing two dives (whether training or site) a day. Making it an advantage to use a pool or cavern site prior to starting the Cavern Training Session on another day.
  10. Removing the amount of skills required on a student’s possible first dive in a Cavern and putting them into other training dives.
  11. The addressing of valve shutdowns and exchanges of regulators to allow for proper training and skill development for independent twin systems and isolation manifolded systems. Instructor workshops to be arranged.



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12. Ability to now safely take students to 30m for their first sinkhole dive before going to 40m on the following sinkhole dive, similar to other deep courses that require a progressive step learning process.
13. Allowance made for site selection by making the skills that were once interchangeable in Sinkhole dives 2 and 3 now fixed but more user-friendly for different sites.
14. The suggested name for the course is “Deep Cavern Diver” It is close to the same Standards as other training agencies who have a deep limit such as PADI, NAUI, NSS – Cave Diving Section and NACD.
15. Equipment requirements, it was noted after feedback that a couple of Instructors were not following CDAA Regulations in regard to manifolded tanks, by allowing a short primary hose to be used on courses. A 1.5m hose as voted on at the Instructors meeting will be the minimum length allowed with a suggested length of 2m.
16. Suggested breakdown –
  - Day 1 and 2
    - A) Theory (12 hours minimum). Thorough emphasis on access requirements for each site as members’ knowledge of this is often lacking leading to problems with landowners. Attention given to Indemnities and permits.
  - Day 3
    - A) Gear critique
    - B) Practical Skill session – Land Drills
    - C) Controlled water training session (pool/cavern) (2 hrs min)
    - D) Exam and review
  - E) Day 4 –
    - a. Cavern training session one
    - b. Climbing session
    - c. Cavern training session two
  - F) Day 5 -
    - a. Sinkhole training session one
    - b. Skill assessment dive
  - G) Day 6 -
    - a. Sinkhole training session two
    - b. Sinkhole training session three



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### **Cavern Site Definition**

A Cavern site is defined as body of water which has a maximum depth of 20 metres, slight overhangs, near vertical ascents and where daylight is always visible (eg limestone caverns, dams, flooded quarries, lakes etc). The maximum penetration allowed is 40 metres from the surface.

### **Sinkhole Site Definition**

A Sinkhole site is defined as a body of fresh water which can have large passages (no restrictions too small for two divers to swim adjacent to each other) and which exceeds 20 metres in depth. The maximum linear penetration allowed is 60 metres from the surface. The CDAA recommends a maximum depth of 40m on air.

### **Deep Cavern Course**

The Deep Cavern Course is the amalgamation of skills and knowledge necessary to safely dive in Cavern and Sinkhole rated sites. Training covers areas that may have zero visibility and the potential for unlimited visibility. A maximum depth of 40m is recommended.

### **Course Overview**

The aim of this course is to develop the minimum skills and knowledge for deep cavern diving including the planning, organising and the procedures, techniques and problem solving required in a variety of cavern and sinkhole diving situations.

This training program may be conducted by CDAA teaching status Deep Cavern Instructors.

### **Pre requisites**

Before commencement of a CDAA Deep Cavern diver training program the candidate must:

1. Hold an Advanced Open Water level recreational SCUBA diver award (or equivalent certification that covers a deep dive, night dive and navigation) and been qualified as a Open Water diver for a minimum of 12 months. The deep, night or navigation dives may have been gained post course in some cases where a training agency does not have an equivalent AOW and it is up to the Instructor to evaluate if a students logged dives meet the criteria.
2. Have logged a minimum of 25 dives (post Advanced Open Water level recreational SCUBA diver award or equivalent) totaling a minimum of 20 hours, including at least two night dives and five dives deeper than 25 metres



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3. Be a minimum of 18 years old.
4. Complete a NSTC diving medical statement and a liability release and assumption of risk form or equivalent. If a positive answer is on the checklist on the medical statement a complete diving medical is required.

### **Ratios**

The instructor to student ratio is:

Swimming Pool Training:	6:1
Cavern Site Dives:	4:1
Sinkhole Site Dives:	4:1
Skill Assessment Dive	2:1

A CDAA teaching status Deep Cavern Instructor must be in underwater visual contact with students at all times.



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### **Theory**

A minimum of twelve hours structured theory is required covering in detail the following topics:

1. CDAA History
  - Formation
  - Structure
  - Site definitions
2. Natural History
  - Cave types
  - Flora and fauna
  - Conservation
3. Equipment Considerations
  - General and Specific considerations
  - Modifications
  - Gear Critique
4. Buoyancy and anti-silting
  - Body position and trim
  - Propulsion techniques
5. Communications
  - Visual and Tactile
6. Reel and Guideline use
  - Commonly used terms
  - Guideline procedures
  - Surface support lines
7. Gas Management
  - Gas consumption
  - Gas planning, calculating personal breathing rates
  - Problem solving
  - Factors affecting breathing rates
  - Isolation Manifolds, shutdowns
  - Independent systems
8. Physiological Considerations
  - Hypothermia



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- Nitrogen Narcosis
  - Gas Toxicity
9. Decompression
- DCI
  - Computer use
  - Table use (different ones) software packages
10. Access Procedures
- Landowner relations
  - Site information
  - Correct access protocols for each site commonly dived
11. Dive Planning
- Planning stages
  - SADDDD
12. Emergency Procedures
- Loss of visibility
  - Lost line
  - Lost diver
  - Entanglement
  - Out of gas
  - Cylinder valve “roll-offs”
13. Hazards
- Silt
  - Darkness
  - Disorientation
  - Cold
  - Overhead environment
  - Confinement
  - Debris
  - Entry/exit
  - Depth
14. Accident Analysis
- Essential rules and Case Histories



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### **Equipment Requirements:**

Minimum equipment requirements include:

1. Suitable exposure suit.
2. Mask and fins.
3. Small sharp line cutting device.
4. Watch or bottom timer or computer.
5. Depth gauge if not using a computer.
6. Buoyancy Control Device (must be in addition to the exposure suit).
7. Twin cylinders minimum capacity 2200 litres.
8. Two regulator first stages each with one second stage attached, one of which has a hose that is at least 1.5 metres in length (recommended length 2m).
9. One primary and two back up lights, each capable of lasting the duration of the dive.
10. Submersible decompression tables available for dive planning if not using a dive computer.
11. Pencil and slate (or wet notes).
12. Two submersible pressure gauges (SPG) if using an independent system. (Only 1 required if using an isolation manifold.)
13. Primary cave reel with a minimum of 100m of line\*
14. Spool or small jump reel recommended for lost line searches – not mandatory.

*\*Instructors may provide reels and guideline as well as orientation line(s) and tether clips, or request that candidates supply their own.*

### **Assessment**

CDAA courses are performance based and require students to meet certain criteria for each session. Continuous assessment of the performance based criteria is made by the instructors throughout the course.

Certification can only be issued after:

1. Students have successfully completed the Deep Cavern Diver Exam and a review of the exam with the Instructor covering any wrong answers until the Instructor is convinced the student understands the questions that were answered incorrectly.
2. Successfully met all of the performance-based requirements for each dive. (Dives to be completed after theory and exam and exam review.
3. Quality assurance forms must be completed by each student before final certification is issued; this is to be done by the student on the CDAA web site or by email.
4. Completion of paperwork consisting of Instructors and students' signatures, dive information, registration payment and photo is mandatory and must be submitted



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by the certifying Instructor to the Records Officer within 14 days of course completion.



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### **PRACTICAL SKILL SESSIONS**

**Land Drills** \*Recommended time 1 hour.

Before commencement of the controlled water training sessions, relevant land drills must be performed and should include:

1. Reel use (in teams).
2. Line placement techniques, including wraps, tuck unders and tie-offs.
3. Reel locking and abandonment.
4. Blackout line following.
5. Tactile signaling.
6. Out of gas procedures/positioning.
7. Valve shutdowns.

\*Recommended times are based on two students to one Instructor. Times will vary depending on the amount of students, their skills, organization abilities and the use of assistants. These recommendations should be taken as a minimum and cover pre and post briefings.



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Note: Following are two options (A) & (B) for the **Water Training Dive** and **Cavern Training Session 1**.

### **Option A**

**If a pool or freshwater area (with pool like conditions) is available, the following option must be used:**

Option A has a **Controlled Water Training Session (A)** allowing for an extensive number of skills and adjustment of buoyancy in twin tanks to be practised with a long bottom time. This is followed by the first **Cavern Training Session (A)** with limited skills to let the student adjust to a new Cavern site. This should reduce possible anxiety and help preserve the site.

### **Option B**

**If no pool is available for training the following option can be used:**

**Water Training session B** in a **Cavern site** instead of a pool /freshwater site elsewhere, this allows less time and less visibility so reduces the number of skills able to be practised in this session. This is followed by **Cavern Training Session (B)** with increased number of skills.



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### **Controlled Water Training Session (A)**

**Site:** Swimming pool, or suitable body of fresh water with pool like conditions, but not a cavern, with a recommended minimum depth of 2 metres. \*Recommended minimum time of two hours.

#### Performance requirements:

At the completion of this controlled water training session students must have:

- Correctly assembled and modified where appropriate, all necessary equipment.  
*Modification to equipment may be necessary to enhance streamlining (eg taping fin straps, or changing to spring heel straps, taping mask straps or changing to Velcro straps, changing regulator hose configuration, attachment of lights)*
- Achieved a satisfactory weighting configuration to demonstrate neutral buoyancy with little or no air in the Buoyancy Control Device or dry suit.
- “S” drill
- Configured their equipment to an extent where appropriate trim was maintained, without undue body movement.  
*Appropriate trim is defined as a horizontal body position with knees bent*
- Become familiar with the use of a guideline and reel by; locking and unlocking a reel, deploying and retrieving line from a reel and making suitable wraps and tie offs with a line.
- Demonstrated mask removal and replacement.
- Demonstrated two fin propulsion techniques.
- Demonstrated even decanting of cylinders by regulator switching if using independent cylinders.
- Demonstrated valve shutdown and regulator switching with a manifolded system.
- Located, secured and breathed from their buddy’s gas source whilst following the line.
- Demonstrated removal of a buddy from entanglement.
- Followed a set line course without a mask.

**NOTE: This first session is an opportunity to experiment with different weighting and equipment configurations, until the students are able to achieve neutral buoyancy and appropriate trim in a controlled environment.**

#### **Suggested Activity Sequence:**

1. Briefing
2. Equipment assembly/critique/modification
3. In water weighting check
4. “S” drill
5. Trim determination - change configuration/weighting where necessary



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6. Practice reel and guideline use
7. Mask removal and replacement
8. Followed a set line without a mask
9. Gas sharing exercise
10. Fining techniques
11. Valve shutdown and regulator switching
12. Equal decanting of cylinders
13. Entanglement removal from each buddy.
14. Debriefing.
15. Log Dive



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### **PRACTICAL SKILL SESSIONS**

#### **Cavern Training Session 1 (A)**

**Site:** CDAA sanctioned cavern site with a minimum depth of 9 metres. \*Recommended time 1 hr.

Performance requirements:

At the completion of this controlled water training session, the students must have:

- Correctly performed an in-water pre-dive safety drill.
- As a team followed the Instructor who lays the line around the Cavern for site familiarization.
- Effectively deployed and retrieved line from a reel, while following the contours of the floor using a minimum of four wraps, tie offs and tucks.
- Followed a fixed line without a mask for a minimum of 20m
- Achieved and maintained neutral buoyancy and appropriate trim\*
- Demonstrated correct tactile signaling.
- Demonstrated mask removal and replacement.
- Demonstrated two fin propulsion techniques.
- Demonstrated even decanting of cylinders by regulator switching.
- Demonstrated valve shutdown and regulator switching if using a manifold.

#### **Suggested Activity Sequence:**

1. Briefing
2. Equipment assembly
3. Appropriate entry
4. "S" drill
5. Instructor lays line around Cavern with Students following to familiarize students with site  
Rotation through five training exercises (in any order) each diver of the buddy pair having a turn leading with the reel
  - Reel use/line laying
  - Mask removal and replacement
  - Fining techniques
  - Follow fixed line without mask
  - Valve shutdown and regulator switching or equal decanting by regulator switching.
6. Appropriate exit
7. Debrief
8. Log dive



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**Water Training Session (B) (Optional to be used when swimming pool or fresh water site is not available and the training session is done in the same site as Cavern dive 1) Counted as a dive for standards purposes**

**Site:** Cavern that is to be used for Cavern Training Sessions as well. \*Recommended minimum time of two hours.

Performance requirements:

At the completion of this controlled water training session students must have:

Correctly assembled and modified where appropriate, all necessary equipment. *Modification to equipment may be necessary to enhance streamlining (eg taping fin straps, or changing to spring heel straps, taping mask straps or changing to Velcro straps, changing regulator hose configuration, attachment of lights)* Ideally these modifications should have been made before arrival at the site.

- Achieved a satisfactory weighting configuration to demonstrate neutral buoyancy with little or no air in the Buoyancy Control Device or dry suit. (Care shall be demonstrated to preserve the site in regard to maintaining visibility through proper buoyancy control and preserving the site from damage)
- “S” drill
- Configured their equipment to an extent where appropriate trim was maintained, without undue body movement.  
*Appropriate trim is defined as a horizontal body position with knees bent*
- Followed the Instructor around the Cavern as a line is laid for familiarization to the site.
- Become familiar with the use of a guideline and reel by; locking and unlocking a reel, deploying and retrieving line from a reel and making suitable wraps and tie offs with a line.
- Using at minimum of 6 placements the line should be wrapped, tucked or tied by each diver at a constant depth and down a slope.
- Demonstrated mask removal and replacement.
- Demonstrated two fin propulsion techniques.
- Demonstrated even decanting of cylinders by regulator switching if using independent cylinders.
- Demonstrated valve shutdown and regulator switching with a manifolded system.

**NOTE: This first session is an opportunity to experiment with different weighting and equipment configurations, until the students are able to achieve neutral buoyancy and appropriate trim in a controlled environment.**



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### **Suggested Activity Sequence:**

1. Briefing
2. Equipment assembly/critique/modification
3. In water weighting check
4. "S" drill
5. Trim determination - change configuration/weighting where necessary
6. Followed Instructor around cavern who lays line for familiarisation
7. Practice reel and guideline use
8. Mask removal and replacement
9. Fining techniques
10. Valve shutdown and regulator switching
11. Equal decanting of cylinders
12. Debriefing
13. Log dive



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### **PRACTICAL SKILL SESSIONS**

**Cavern Training Session 1 (B) (To be used when a pool or other freshwater site is not available and the first Cavern dive is done in the same site as the Controlled water training dive)**

**Site:** CDAA sanctioned cavern site with a minimum depth of 9 metres.\*Recommended time 1 hr.

Performance requirements:

At the completion of this controlled water training session, the students must have:

- Correctly performed an in-water pre-dive safety drill.
- Effectively deployed and retrieved line from a reel, while following the contours of the floor using a minimum of four wraps, tie offs and tucks, for a minimum distance of 50 metres
- Follow a fixed line without a mask for a minimum of 20m.
- Demonstrated removal of a buddy from entanglement (each diver).
- Achieved and maintained neutral buoyancy and appropriate trim\* at depth and at 3 metres.
- Demonstrated correct tactile signaling.
- Demonstrated mask removal and replacement at 12m or deeper.
- Demonstrated two fin propulsion techniques.
- Demonstrated even decanting of cylinders by regulator switching if using an independent system.
- Demonstrated valve shutdown and regulator switching if using a manifold.
- Demonstrated gas sharing each diver being a donor and receiver.

### **Suggested Activity Sequence:**

1. Briefing
2. Equipment assembly/critique/modification
3. In water weighting check
4. "S" drill
5. Trim determination - change configuration/weighting where necessary
6. Practice reel and guideline use
7. Demonstrated correct tactile signaling
8. Follow a fixed line without a mask for a minimum of 20m
9. Entanglement exercise
10. Mask removal and replacement



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11. Fining techniques
12. Valve shutdown and regulator switching
13. Equal decanting of cylinders
14. Debriefing
15. Log dive

### **PRACTICAL SKILL SESSIONS**

#### **Cavern Training Session 2**

**Site:** CDAA sanctioned cavern site with minimum vertical depth of 9 metres. \*Recommended time 1 hr.

#### Performance requirements:

At the completion of this controlled water training session, the students must have:

- Correctly donned and doffed all equipment (except exposure suit and weight belt) in water too deep to stand.
- “S” drill.
- Demonstrated fine vertical buoyancy control by ascending and descending to depths determined by the instructor between 1-7 metres.  
*This exercise is done following a vertical line in horizontal trim. No physical contact with the line or excessive fining or hand sculling is not permitted.*
- Demonstrated correct hand and light signals.
- Effectively deployed and retrieved line from a reel for a minimum of 20 metres each.
- Located, secured and breathed from their buddy’s gas source while following the line for 20 metres each diver of the buddy pair having a turn to be out of gas.
- Each buddy pair following the line for a minimum of 20 metres without a mask.
- Independently achieved and maintained neutral buoyancy and appropriate trim\*.

#### **Suggested Activity Sequence:**

1. Briefing
2. Equipment assembly
3. Surface equipment donning
4. “S” drill
5. Rotation through five training exercises (in any order) Exercises can be combined but the distance must remain the same eg. Swimming without mask and using buddy’s regulator would need to be for 40 metres.
  - Vertical buoyancy control
  - Reel use/ line laying for 40 metres
  - Propulsion techniques



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- Swimming without a mask following the line for 20metres.
  - Breathing from buddy's regulator while line following for 20 metres
6. Appropriate exit
  7. Debrief
  8. Log dive

### **PRACTICAL SKILL SESSIONS**

#### **Climbing/Belaying Session**

**Site:** Any appropriate site which offers a vertical drop of at least 5 metres, with top belay anchor points. \*Recommended time 2 hrs.

Performance requirements:

At the completion of this practical climbing session, the students must have:

- Demonstrated basic knot tying, including at least a figure eight, bowline and tape knots or the use of tank tapes.
- Demonstrated correct belaying technique for another person on a ladder climb of at least 5 metres, using an appropriate friction device (eg stitch plate, figure 8).
- Demonstrated correct wire rope ladder climbing technique (up and down), to a height of at least 5 metres, while on belay.
- Correctly worn and used a sit harness and helmet while climbing and belaying.
- Demonstrated correct rope handling techniques.
- Demonstrated correct use of appropriate climbing hardware (eg karabiners).
- Safely lowered and raised a single scuba cylinder to height of at least 5 metres, using appropriate hardware.
- Demonstrated adequate safety precautions at all times.

This session may be conducted at any time but before certification. It is optional to use any suitable location, plus the session may be conducted by another person, experienced in these skills eg climbing instructor.

**THIS SECTION IS TO BE OPTIONAL, IT IS FELT THE ASSOCIATION SHOULD BE TEACHING IT ONLY IF INSTRUCTORS HAVE FORMAL QUALIFICATIONS.**



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### **PRACTICAL SKILL SESSIONS**

#### **Sinkhole Training Session**

**Site:** CDAA sanctioned sinkhole site (divers to reach a maximum of 30 metres and a minimum of 25 metres during deployment of line exercise) \*Recommended time 45 minutes. This dive should be the first for the day as reverse profiles are not as yet approved.

Performance requirements:

At the completion of this supervised dive, the students must have:

- Correctly constructed and installed a vertical orientation line.
- Correctly performed an in-water pre-dive safety drill.
- Demonstrated a controlled descent using an orientation line for reference.
- Demonstrated a controlled ascent, using an orientation line for reference.
- As a team, effectively deployed and retrieved line from a reel demonstrating buoyancy control and trim at depth using wraps, tucks or ties.
- Demonstrated correct communication between team members
- Achieved and maintained neutral buoyancy throughout the dive.
- Demonstrated valve shutdowns and regulator switching or equal decanting and regulator switching.
- Achieved neutral buoyancy and independently hovered at safety stops for a period specified by the Instructor.
- Adhered to maximum depth set for the Site Training Dive.
- Adhered to the dive time as set by the Instructor.

#### **Suggested Activity Sequence:**

1. Briefing
2. Equipment assembly
3. Construction and installation of an orientation line
4. "S" drill
5. Descent following orientation line to planned depth
6. Attachment of guideline to orientation line
7. Deployment of guideline by chosen team leader
8. Suitable placement of line while swimming using wraps, ties or tucks
9. Removal of guideline from orientation line
10. Demonstrate valve shutdown and regulator switching.
11. Ascent with safety stops
12. Exit water 13. Removal of orientation line.14. Debrief 15. Log dive



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### PRACTICAL SKILL SESSIONS

#### Skills assessment dive

**Site:** CDAA sanctioned cavern site. \*Recommended time 90 minutes.

#### Performance requirements:

At the completion of this supervised dive, the students must have:

- Correctly performed an in-water pre-dive safety drill.
- Demonstrated valve shut downs and regulator exchanges
- Demonstrated the ability to signal, respond correctly to allow another diver to remove an entanglement placed in position by the Instructor.
- Demonstrated suitable primary and secondary tie-offs.
- Effectively deployed and retrieved line from a reel, for a minimum distance of 30 metres, while following the contours of the floor. Maintaining neutral buoyancy and appropriate trim, while demonstrating suitable propulsion techniques.
- Correctly secured a guideline, using a minimum of four wraps, and maintaining neutral buoyancy, appropriate trim.
- Removed line previously wrapped around cavern features maintaining adequate tension on the line.
- Successfully completed the following stress management exercise:

***Locked and abandoned a reel a minimum of 30mt from the secondary tie-off. Masks will be removed and handed to instructor, then students will successfully locate, secure and breathe from an alternative gas source supplied by another diver after a simulated OOG and then the buddy pair will return to the secondary tie-off. Exercise to be repeated with each diver supplying the alternative air source.***

- Demonstrated suitable buddy contact throughout the dive, including the use of appropriate hand and/or light signals.
- Demonstrated an appropriate safety stop.



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### **Suggested Activity Sequence:**

1. Briefing
  2. Equipment assembly
  3. Suitable entry
  4. "S" drill
  5. Entanglement exercise
  6. Primary tie-off
  7. Secondary tie-off
  8. Line deployment (diver 1, 30 metres\*)
  9. Line placement (diver 1)
  10. Mid water reel exchange
  11. Valve shutdown and regulator exchange
  12. Line deployment (diver 2, 30 metres)
  13. Line placement (diver 2)
  14. Mid water direction reversal
  15. Line retrieval (diver 2)
  16. Line placements removal
  17. Mid water reel exchange (at the midpoint)
  18. Line retrieval (diver 1)
  19. Line placements removal
- 19. Stress management exercise**
- Diver 1 deploys line with appropriate ties for at least 30m
  - The reel is locked and secured.
  - Masks are removed and handed to the Instructor.
  - The Instructor signals who is out of gas and the diver locates, secures and breathes from the buddies regulator.
  - Divers follow the line back to the secondary tie-off.
  - Recover reel.
- 20. Repeat with diver 2 deploying line.**
21. Safety stop
  22. Debrief
  23. Log dive



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### **SUPERVISED DIVES**

#### **Sinkhole Dive 1 Depth between 35-40m**

**Site:** CDAA sanctioned sinkhole site. \*Recommended time 45 minutes.

#### **Performance requirements:**

At the completion of this supervised dive, the students must have:

- Correctly performed an in-water pre-dive safety drill.
- Correctly constructed and installed an orientation line.
- Demonstrated a controlled descent to the maximum planned depth, using an orientation line or feature for visual reference.
- Achieved and maintained neutral buoyancy throughout the dive.
- Adhered to maximum limits set for both depths (must be between 35-40m) and time. Achieved a stable position then removed, replaced and completely cleared the mask, at a minimum depth of 30 metres.
- Deployed the guideline with suitable ties and wraps.
- Demonstrated a controlled ascent, using an orientation line for visual reference.
- Demonstrate safety stops on ascent as directed by Instructor at different depths while maintaining correct horizontal trim and buoyancy.

#### **Suggested Activity sequence:**

1. Briefing
2. Equipment assembly
3. Construction and installation of orientation line
4. Suitable entry
5. "S" drill
6. Descent
7. Attachment of guideline to orientation line
8. Achievement of a stable position at a depth of 35 - 40 metres
9. Mask removal and replacement at 30 metres
10. Deployment of guideline
11. Suitable placement of line while swimming
12. Return to orientation line within specified time.
13. Ascent
14. Safety stops
15. Neutral buoyancy at depths as directed by instructor demonstrating correct horizontal trim.
16. Exit 17. Debrief 18. Log dive



## THE CDAA STANDARDS AND PROCEDURES MANUAL DEEP CAVERN Course Standards

### SUPERVISED DIVES

#### **Sinkhole Dive 2**

**Site:** CDAA sanctioned sinkhole site depth between 30 – 40 metres but should not exceed the depth of the previous dive if on the same day. \*Recommended time 45 minutes.

Performance requirements:

At the completion of this supervised dive, the students must have:

- Demonstrated a safe stride entry.
- Correctly performed an in-water pre-dive safety drill.
- Demonstrated a controlled descent to the maximum planned depth, using an orientation line if not used in the previous dive.
- Completed a narcosis recognition exercise.  
*This exercise can take the form of a memory and/or simple arithmetical test at depth, which is subsequently reviewed during the debrief.*
- Achieved and maintained neutral buoyancy throughout the dive.
- Demonstrated a controlled ascent.
- Adhered to maximum limits for depth and time.
- Demonstrated appropriate safety stops.
- Demonstrated light or tactile signals.

#### Suggested Activity Sequence:

1. Briefing
2. Formulation of dive profile
3. Equipment assembly
4. Stride entry
5. "S" drill
6. Descent to maximum depth
7. Narcosis recognition exercise
8. Light signals on the wall or tactile signals using touch
9. Ascent
10. Safety stop
11. Appropriate exit
12. Debrief
13. Log dive