



CMAS

CONFÉDÉRATION MONDIALE
DES ACTIVITÉS SUBAQUATIQUES

WORLD UNDERWATER FEDERATION

CMAS Night Diver Standard and Instructor Handbook

**Version 2010/11
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SECTION I (Standards and Requirements)

1. Training Overview

The intention of Night Diving Specialty Training is to impart the candidates with the knowledge and skills to enable them to undertake night diving in a safe manner.

2. Training Objectives

To provide the candidates with:

- A. The necessary wherewithal to prepare and plan a night dive.
- B. The skills to use the special equipment and hand signals required for night diving.
- C. The practical application of emergency practice in these dives.

3. Application Conditions

1. Minimum age : 15 age
2. Certificate level : CMAS Two Star Diver Certificate or an equivalent certificate
3. Number of course dives : 2 (First dive can be done before the theoretical course, but the last one must be completed after theoretical courses)
4. Other : Valid medical for diving fitness according to the concerning requirements of the national federation

4. Maximum Trainee / Diver Ratios

1. 1st Dive : 4 Students to 1 Instructor
2. 2nd Dive : 4 Students to 1 Instructor

If instructor has an assistant, then 2 more people may be included in the group.

Note: Assistant level is minimum 3-Star CMAS Diver

5. Specialist Instructor / Assistant Qualifications

Specialist Instructor:

- a) Certificate level : must be CMAS 2-Star Instructor or 3 Star Instructor.
- b) Experience : must be active instructor of the national Federation.
must have at least 200 recorded dives and at least 20 recorded Night dives.

Assistant:

- a) Certificate Level : At least CMAS 3-Star Diver
- b) Experience : must have at least 100 recorded dives in total
must have at least 4 recorded night dives.

6. Training Special Conditions

Limitations:

1. Instructional Dives can be completed in two days.
2. The maximum depth is 20-meters for training dives.
3. Dives must be done during sunset.
4. During the dives, night dive specialty instructor must accompany the divers.

Diving Equipment - Additional to standard diving equipment:

1. It is highly recommended that all taking part in these dives wear:
 - i. Alternative air breathing systems.
 - ii. A knife and/or line cutter and Instructors carry an underwater slate and pencil.
 - iii. Must have an underwater light, and Instructor and assistants must carry two.

Other Equipment/Material:

- Surface Marker Buoys, luminous markers for entrance and exit locations.
- First Aid Kit including oxygen and fresh drinking water.
- Communication equipments (telephone, radio).

Others Conditions:

- Training dive should only take place in waters that are known well by the Instructors, with and maximum current of half-a-knot.
- Dive durations must be within the Safety-Stop time for the planned depth.

Supervision:

- During these training dive:
 - i. Trainees must be under the direct supervision of an Instructor at all times.
 - ii. Surface cover i.e. shore marshal, must be maintained throughout the dive.
 - iii. First aid equipment and emergency communications must be on hand, at all times, with right competent people ready to call the emergency services and apply any necessary first aid treatment.

Emergency Plans:

- The organisers of the training event must prepare a Risk Analysis (RA) and the prepare plans to deal with those issues highlighted by the RA.
- The detailed plan must be communicated first to the Instructors and First aiders and then to the Trainees.
IMPORTANT: All must have full knowledge of the plans and facilities.

7. Trainee Success Criteria

Upon completion of the course candidates must be able to demonstrate their ability to:

- i. Prepare a RA for a night dive and the produce a dive plan for the project.
- ii. Apply skills required for a safe night dive, including drift-diving and associated issues.
- iii. Apply all underwater night dive signals.
- iv. Correct control their buoyancy during the dive, during the ascent and at the Safety-Stop.
- v. Comply with all aspects of the buddy system before, during and after a night dive.
Note: This should all be achieved without undue stress,
- vi. Successfully complete and oral or written examination.

8. Minimum Training Duration

1. Recommended number of theoretical lectures : 2
2. Minimum duration
 - 2.1.1. Theoretical course : 2 hours
 - 2.1.2. Practical : 2 Night dives
3. Minimum number of dives : 22 recorded dives on course completion.

SECTION II (Training Program)

Illumination systems and lights that will be used in night diving and their properties:

All divers must have own their own lights
 Main light – must be strong
 Reserve light –can be smaller
 Their batteries must be new or recently charged.
 Alkaline batteries have longer life
 It must have a strap to fasten it to the wrist
 Rechargeable batteries are more economical
 Flashing lights are for fastening to the cylinder or buoy or boat, but can be blinding to other divers
 Chemical lights
 Washing with fresh water after diving
 Not opening when it is wet
 Retaining the batteries outside when they are not used

Care of underwater lights:

Follow the maker's recommendations.
 Wash in warm fresh water after all dives.
 Maintain the correct battery charge.
 Keep all O-Rings free of dirt, dust and hairs – Keep lightly lubricated with silicon-grease.

Planning for Night Dives:

- i. For unfamiliar dive sites, you should get information from those who had dived in the area before you and dive the site in the daylight to gain familiarity. Determine the current/tide conditions for your planned dive. Ensure your planned route is clear of fishing nets and other conditions that may cause difficulty at night.
 - ii. The site should be marked-out before the night dive commences to identify the entry and exit points.
 - iii. Avoid entry and exit points with sharp and/or dangerous surfaces.
- These issues are in addition to the normal day time planning issues.

Advantages of carrying out Night Dives from a Boat:

Entrance and exiting from water is may be easier from a suitable boat. Additionally, a boat can follow the lights of the divers whilst underwater. This make providing back-up emergency action quicker, provided those onboard are appropriately trained and equipped.
 The entry point, when using a boat, should be marked with a shot-weight, line and buoy, which may be used by straggling divers whilst wait to be picked up.

Important Issues in Night Dives:

As with all dives your equipment and the emergency equipment must be checked for functionality before the dive.
 Ensure that you inform others, on shore, of your plans. This includes your planned exit time and the location of your dive.
 If you dive from a boat or land, nominate a shore marshal as lookout.

Stress:

Stress of diving dark surroundings can be a tipping point of disaster. Ensure that everyone in the party is comfortable with the dive arrangements and be sure anyone who is too stressed can stand down without fear of adverse comment.

How to cope with stress in night dives:

Dive in places that are well known to the group.
 Dive in the company of a trusted person.
 Dive within your limits.
 Call the dive off if you feel too uncomfortable.

What to do when diving light fails:

Carry a reserve light.
 Tell your buddy.
 Terminate the dive if a replacement light is not available.
 Carry a whistle to attract the attention of surface tenders.

What to do when you lose your Diving Partner during Diving:

If for some reason you can't immediately find your buddy . . .

- Don't panic.
- Stop what you are doing.
- Take a moment to reflect and follow the following steps:
 1. Listen for the sound of bubbles.
 2. Turn a full circle looking both up and down.

3. Ascent a few metres and do the same again.
4. Try to attract your buddies attention by tapping on your dive cylinder with the handle of your knife.

Often it is simply a matter of time; give it a minute. If you still have not established contact:

1. Ascend to the surface in a controlled manner at no more than 10m/min, make a one minute stop at three metres.
2. Always make that safety-stop . . . It helps limit and control micro-bubbles.
3. Once at the surface look for your buddy by turning 360°. If you both follow this simple procedure you will find each other. If your buddy is still missing tell someone on the boat or shore and terminate your dive.

What to do When you Lose Direction in Diving:

Make use of air bubbles, they always travel up
 Make use of your compass.
 Terminate the dive and ascend to surface together with your buddy

How to Enter Water from Shore or Boat in Night Diving:

In addition to standard practices, controlling and retaining a reserve diving light.

From a Boat:

Complete buddy & bubble checks as normal
 Check some night dive signals
 Checking the operation of all lights (ensure you have new or fully charged batteries).
 Check the entrance is clear by using your torch.
 Use the standard procedure to enter the water.
 Follow the Shot-line down with your buddy.

From the Shore:

Checking the area that will be entered before hand
 Complete buddy & bubble checks as normal
 Checking the operation of all lights (ensure you have new or fully charged batteries).
 Check the entrance is clear by using your torch.
 Use the standard procedure to enter the water.
 Ensure a light is left on the shore for direction finding on returning

How to reach the Diving Area that is Far from Shore in Shore Diving:

Take a fix on the lights that may be a reference source on the shore.
 Place a light as a reference source on the shore.
 Take a bearing with ones compass.
 Fin out to the required location

Descending during a Night Diving:

Turn on the lights
 Check buoyancy
 Check dive buddy
 Direct the light towards the bottom
 Make signs with light

Ascending during a Night Diving:

Use the reference light on the shot line or anchor rope
 Check the surface with light
 Check ascent rate on your gauge.
 Ascend together with your buddy
 Carry out a safety-stop.

How to Establish Communication during Night Dives:

Drawing the attention of diving partner by:

- Knocking their cylinder
- Touch
- Signalling with you torch in a vertical up & down motion.

How to Make Hand Signs:

Use of a lit torch to highlight your standard hand signals.
 Use the torch to give standard light signals:

- OK at night: Draw a large slow circle with a lit torch.
- Diver to Diver light signal: Something wrong at night, Large rapid up and down movements with a lit torch.

Compass Use in Night Dives:

- Use the luminous display of the compass
- Taking bearing and angle calculation with compass
- Turns with Compass
- Shore reference lights
- Finding direction with night natural references

Exam can be held before the practical lessons. Successful trainees can be admitted to the training dives.

Practise Dives

1st Dive: Recommended depth is between 6 meters and 15 metres.

By the end of this dive, trainees should be able to:

- Perform night diving depending on the light of lamps as getting used to darkness.
- Develop the direction finding skill
- Apply the signals correctly
- Carry out maintenance of lights, their use in a healthy manner.

Before diving, requirements that should be fulfilled:

- Trainee should assist the diving preparation. They can help with the preparation of the safety cylinder.
- Conditions of pre-diving should be cared out as normal.
- Necessary briefing of pre-diving should be completed.
- If shore diving is being carried out, the brief should account for waves striking the shore and entry and egress.
- Check the equipment fittings under light.
- Check that all lights (main and reserve) are working.
- Start diving by fastening the main light to your arm.

Briefing should cover:

- Evaluation of conditions
- Facilities in diving area
- Use of lights in underwater
- Underwater signs
- Signs given by light
- Boat or shore reference lights
- Approach techniques and position of approach
- Exit techniques and position
- Start ascent on reaching a cylinder pressure of 50 Bar.

Diving preparation:

- Preparing the emergency procedures
- Assigning the diving partners
- Reminding of control issues before diving
- Locating reference lights
- Controlling diving partner
- Repeating the reserve air supply utilization skills
- Locating the emergency cylinder at 5 meters.

During diving, requirements that should be fulfilled:

- Taking bearing with compass on the surface
- Descending by directing lights towards bottom
- Taking position by checking the ground with lights
- Giving OK sign by determining group leader and diving partner
- Getting used to ambient conditions by observing the surrounding for 2 minutes
- By using compass and natural reference
- Not clouding the bottom conditions by maintaining necessary buoyancy while swimming.
- Arriving at the Exit point and starting to exit.
- Making a safety stop next to safety cylinder at 5mt depth.

Debriefing should cover:

- Evaluation of the performance of students
- Discussion of general flow of diving
- Talking about the living life at that region
- Communication of the information that is required in recording diving

2nd Dive: All safety parameters as stipulated for the first dive plus:

Recommended depth is between 8 meters and 20 meters.

By the end of this dive, trainees should be able to:

- Descent in controlled way using the bottom structure or descent rope as a visual reference
- Make correct signs with lamp light
- Maintaining the buddy system
- Go and return a distance of around 25 meters in the bottom by using compass.

Before diving, requirements that should be fulfilled are as before.

Briefing should cover same items as before.

Diving preparation as before.

During diving, requirements that should be fulfilled as before plus:

- Observing underwater creature life in the diving area
- At the end of diving, returning to boat or shore by using compass and natural references

Debriefing as before: Recommended schedule

- Theory
2 classes for 2 hours during Weekdays
- Practice
Successive 2 days in terms of obtaining more reliable results (i.e. weekend)

Training materials to give trainees:

- For using theoretical lectures in the classroom: Class notes
- For studying at home: Above (Recommended literature list can be submitted)

Training materials to be used by instructor:

- The text and training presentation, prepared by Federation
- Recommended literature by the federation
- Video and slides supplied by the Federation

III. Knowledge Review and Skill Evaluation

1. Theoretical Knowledge:

A written evaluation should be done and kept at the end of theoretical class.
If an exam is done, it should be multiple-choice exam.

2. Practical Skills:

If there is a doubt about whether the trainee has the necessary skills to begin, then a control dive should be done before the training commences.

IV. Issuing of recognition material

At the end of training, corresponding recognition material must be given to successful trainees

- CMAS double-sided card.
- Wall certificate in A4 format.