Australian Speleological Federation Inc. (ASF)

Sump Free Diving Code of Practice

(Adopted 2020)

DEFINITION

Free diving or breath-hold diving is diving using a single, held breath. This Code of Practice covers the situation when this method of diving is used to pass through water-filled passages in an overhead environment, i.e. sumps, which are water-filled passages that do not have a vertical access to an air surface.

(ASF Cave Diving Code of Practice covers diving in an overhead environment using breathing gas supplies.)

PROTECTING THE CAVE

Divers shall adhere to the ASF Code of Ethics and Conservation, the ASF Minimal Impact Caving Code, and the ASF Caving Safety Guidelines.

Divers shall minimise damage to the cave when free diving.

METHODS AND CAUTIONS

1. Free diving is a potentially dangerous activity and must be treated with respect.
2. If there is higher than normal water level, a dive may become considerably longer than expected or the line may end before an air space is reached.
3. When the water is disturbed by a diver, a clear sump may silt up. This will reduce visibility, sometimes to zero. This will make the next diver's passing, or the return trip, much more difficult.
4. Air trapped in roof pockets should not be breathed as it may be foul or may be at a pressure higher than surface.
5. Hyperventilation to try to increase oxygen levels does not work! Hyperventilation increases the risk of blacking out and reduces oxygen availability. It is better to use a thirty second relaxation period prior to a dive.

LINES

1. Fixed lines shall run continuously between air spaces.
2. Fixed lines shall be firmly secured at each end above normal water level and well clear of any overhead projections.
3. Under no circumstances shall a free end of line be left unsecured.
4. Lines, whether permanently fixed or temporary, may be floating or non-floating. However, they must have a breaking strain exceeding 500 kg so the diver can use them as a hauling aid. They should be thick enough to be easily held. Lines used by cave divers are usually too light and too thin to be used.
5. Some cave environments, especially those with a high flow rate, will require a more substantial line and which must be replaced more frequently.
6. Generally, only one fixed line should be used or left in any water-filled passage.
7. In the case of a divided passage where both sections are negotiable, a second line is preferred to there being an underwater junction in the lines. This second line should be well separated from the first line and should lead from the closest air space.
8. Any intermediate tie-off that is used to avoid the line pulling into narrow restrictions must be easy to negotiate to avoid loss of direction or entanglement in zero visibility conditions.

9. When free diving into sumps with no fixed lines, there shall be a continuous line from the diver leading back to the start of the dive. The diver may lay this line using a reel or it may be paid out by a surface party. In both cases the line or reel must be secured to the diver.

COMPETENCE AND EXPERIENCE

1. No person should free dive in a cave unless competent in another water-related activity e.g. snorkel diving, surfing.
3. If a person has no experience with free diving in caves then a training program should precede their first free dive.
4. Before undertaking their first in-cave dive, a free-diver should be competent in the following:
    a. Follow line through underwater obstacle course.
    b. Using blackout mask to simulate silting.
    c. Practise using and not using aids.
    d. Practise use of signals.
5. Consider the competence of the other party members in the party before diving.
6. Consideration must be given to a call-out procedure for rescue by skilled cave divers if overdue free-divers do not return or are trapped by raised water levels.

EQUIPMENT

1. Lights must be waterproof to the intended depth of the dive.
2. A second source of light should also be carried by divers.
3. A diving mask is beneficial. Goggles should only be used in the place of a mask for very shallow ducks or dives, as the diver cannot fully compensate for the change of pressure that occurs with increased depth.
4. A snorkel should not be used or attached to the face mask strap for free diving. It may have an application for moving along water-filled passage only where there is overhead air space.
5. Fins are beneficial as they increase the diver's stability and propulsion whilst underwater. They may not be beneficial for short or restrictive free dives.
6. Wetsuits, semi-drysuits and drysuits can be used to provide insulation to reduce body heat loss when immersed in water.
7. When using a wetsuit, semi-drysuit or drysuit (or other buoyant device), a weight belt should be used to help the diver maintain neutral buoyancy.
8. Hooks, or opening clips, or carabiners without locking gates, should not be used to attach equipment to the diver as they increase the risk of entanglement.

SIGNALS

1. A method of signalling the next diver should be determined if a party of cavers is to pass through a sump.
2. If no other signalling method is to be used, the following line signals should be adopted:
    a. One slow tug repeated every 10 seconds until acknowledged. To be used to signal 'sump clear' or in reply, 'I'm ready to enter sump'.
    b. Two slow tugs repeated every 10 seconds until acknowledged. To be used to signal 'stay put - I am returning' or in reply 'I will stay put'.
    c. Three or more fast tugs - 'I need help'.
3. When paying out line to a free-diver, the line should be paid out in response to a continuous pull and taken in if the line goes slack.