

International Polar Diving Workshop Proceedings

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RECOMMENDATIONS

Polar diving experience has shown that buoyancy control is the primary differentiating skill affecting safety and science.

THERMAL PROTECTION

1. Pre- and post-dive thermal and hand protection must be carefully managed.
2. Adequate thermal protection must be provided to tender(s) and standby diver(s).
3. The effect of cold on DCS risk is not fully understood. However, the diver should be kept warm throughout the dive and external heat application and heavy lifting should be avoided during the immediate post-dive period.

EQUIPMENT

4. It is important that continued data be collected on the performance of regulators, buoyancy compensators and drysuits in polar conditions and be accessible to scientific diving programs.
5. Regulator model revisions require field experience or independent lab testing validation prior to adoption for polar diving use because it cannot be assumed they will perform as well as earlier successful models.
6. Owing to the tendency for scuba apparatus to free-flow under polar conditions a minimum of two independent regulator systems is recommended for diving in overhead environments; divers must be proficient in switch-over procedures.
7. A second-stage isolation valve used in conjunction with a first-stage overpressure relief valve should be further considered as a method to independently and rapidly manage regulator free-flow.
8. To minimize the possibility of regulator free-flow proper pre- and post-dive care should be followed. Proven methods include ensuring that regulators are kept warm and dry prior to diving and minimizing regulator breathing prior to immersion. The purge valve should not be activated prior to immersion, upon entry or during the dive.

OPERATIONS

9. A drysuit must be used with a buoyancy compensator for polar diving in general. It is recognized that conditions may exist in which the diver would be more at risk with the buoyancy compensator than without one. In such cases a buoyancy compensator will not be required.
10. A tethered diver, who is deployed to work independently, must be equipped with full face mask, voice communications to the surface and redundant air supply.
11. During pack ice diving operations tenders must constantly monitor changing ice conditions to ensure rapid diver exit.
12. A recompression chamber should be within a traveling distance that is concomitant with the risks associated with any particular diving operation. Where no recompression chamber is available then the risk must be managed in a way that reduces the potential for decompression illness significantly. Sufficient oxygen must be on site as an emergency diving first aid treatment.
13. Generally, divers under ice should be tethered by life lines. It is recognized that conditions may exist where high visibility and lack of currents obviate the need for tethers.
14. Appropriate measures for safeguarding all personnel from predatory mammals (e.g., polar bear, leopard seal and walrus) must be considered and implemented.
15. Diving under ice requires additional gas management considerations.

TRAINING

16. Divers in polar regions should be proficient in the use of drysuits, thermal insulation strategies and weighting and should be highly experienced with the particular system and equipment they will use.
17. When lifelines are used divers and tenders must be trained and proficient in their use.
18. A polar check-out dive is essential to determine competency.