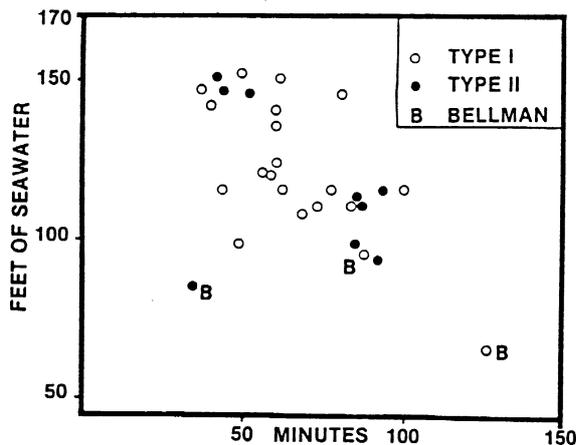


FROM THE MEDIC'S LOG

Dick Clarke

Four years of surface oriented air diving from a North Sea multi-service vessel, involving 3,933 man/dives, resulted in 29 cases of decompression sickness. The accompanying figure indicates exposures that produced DCS, supporting the popular contention that USN Standard Air Decompression Tables are particularly suspect in the 120-150 foot range.

AIR DIVING DECOMPRESSION SICKNESS PROFILES



Depths ranged from the splash zone to 170 feet, with an average dive profile of 95 feet for 80 minutes. An overall incidence of 0.7% compares favourably with the US Navy figure of 1.25% (Berghage 1981), particularly as the latter's average profile was a no-decompression one!

A comparison of decompression tables showed that the Standard Air Table produced 21 cases (14 Type I, 7 Type II) in 3,404 dives for 0.6%, against eight cases (6 Type I, 2 Type II) on the USN Surface Oxygen Table for 1.5%.

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SWEDISH COLD SURVIVAL TEST

The Swedish Navy has reported an interesting cold survival test in a "lost bell". The survival equipment is listed as follows:

1. Water tight plastic bag, for items 2-6.
2. Thermal insulation underwater, consisting of jacket and trousers in synthetic fur. This equipment is also used in the Navy's constant volume diving suits.
3. Towels
4. Underwear, allowing for good transfer and distribution of humidity (often used as underwear for winter

sports).

5. Gloves, in synthetic fur.
6. Hood, of the same material as the underwear.
7. Packaging for items 8-18 made of rubberized canvas with lacing that makes it possible to compress the equipment.
8. Survival bag (sleeping bag), with 10 cm polyester/wool insulation. The sleeping bag is provided with a zip along the length of one side and has a fixed hood with a neck seal.
9. Plastic bag, that is pulled over the sleeping bag and prevents it from becoming wet.
10. Jacket with hood, made of the same material as the sleeping bag.
11. Urine collection bags (2), in plastic with liquid absorbent material which allows the diver to urinate without having to leave the bag.
12. Socks, in the same material as the sleeping bag.
13. Alarm clock. Timekeeper with alarm bell which runs for 1 hour.
14. Diving watch, pressure tested to 300 metres.
15. Plastic flask, with 1 litre of water.
16. Torch.
17. CO₂ scrubber, gas heater type DUI Hamilton, consisting of oronasal mask, head harness, saliva collector and container for CO₂ is absorbent. The equipment is designed so that the heat and humidity in the divers' exhaled gas is accumulated in the absorbent at the same time as the CO₂ is removed from the gas.
During inspiration this heat and humidity is reutilised, heating the inhalation gas to a comfortable level.
A certain amount of heat is also added as a result of the chemical reaction in the absorbent when the CO₂ is absorbed.
To prevent the absorbent canister from being cooled it is carried between the jacket and the sleeping bag which also adds a certain amount of heat in the sleeping bag.
The size of the absorbent canister (weight of absorbent 1.8 kg) is suited to allow the container to be carried comfortably. The "dead space" is negligible for a grown person at rest, even though the inhalation and exhalation gases pass the same way through the CO₂ absorbent, a necessity in order to reutilise the heat.
18. Extra absorbent canisters (3).
After the survival test the number of containers has been increased to 3 which gives added margin for extra time as well as variations in the capacity of the absorbent.
19. A net is stretched across the bell as an extra floor, which protects the divers from the cold diving bell walls and from wet diving gear stored under the net. The net prevents the hatch from being blocked and gives the best possible lying comfort as it is made of wide non-water absorbing straps.