THE RISKS OF TECHNICAL DIVING

There is no escaping the fact that technical diving involves a higher level of risk than recreational diving. Unless we accept this fact, sooner or later we will be caught out by one of these risks. The intelligent technical diver acknowledges these risks and ensures he does everything he can to reduce them.

The risks stem from a number of factors. These are primarily related to the depth, duration and restrictions of the dives we carry out. In addition some of the techniques we use are designed to reduce some risks but potentially introduce others.

Technical diving almost inevitably involves decompression diving. This in itself introduces a significant risk. Many divers would shudder at the thought of cave diving. The idea of a solid rock ceiling preventing a direct ascent to the surface is too much to deal with. Yet these same divers will quite happily incur a significant decompression obligation.

A stage decompression dive introduces a 'virtual overhead', although there is no physical barrier above us there is a virtual barrier introduced by our decompression ceiling. We cannot break this ceiling without risking decompression illness.

Running out of breathing gas is one of the other major risks. Poor planning, entanglement, equipment or other failures can lead the ill prepared diver to a situation where they do not have enough gas to complete their decompression schedule. This leads to the unenviable decision of whether they should head for the surface, blowing off their remaining decompression stops and risking DCI or whether they should complete their decompression schedule but drown through lack of gas.

In order to accelerate their decompression schedule, and as a result reduce the gas volumes required, technical divers usually use a rich Nitrox mix as a decompression gas. Although this can reduce the above risks it also introduces additional risk. The use of rich Nitrox mixes significantly increases the risk of Central Nervous System (CNS) Oxygen Toxicity.

In addition the loss of a deco gas, for example due to a faulty regulator, means that the decompression schedule can no longer be accelerated. This may extend the decompression schedule to such an extent that the divers remaining gas supplies are now no longer sufficient to complete the required decompression.

In many cases these three risks are interconnected. A diver may elect to use 100% Oxygen in order to accelerate their decompression and reduce the amount of decompression gas required. By reducing these two risks they may however have increased the risk of CNS Oxygen Toxicity.

The technical diver also faces the risk of entanglement or entrapment. In itself this is not too much of a problem but the additional time at depth required to escape from the entanglement may lead to an increased decompression schedule or even worse may lead to the diver running out of backgas in their main cylinders. This results in the situation where the only available gas, their decompression gas, is toxic. Again, this is a situation we want to avoid.

Extended decompression schedules can also lead to increased risks. In cold water the diver may become so cold that the effectiveness of their decompression is affected. As the diver becomes colder the body diverts blood away from the extremities and towards the core. This can result in insufficient off-gassing from the extremities and an increased risk of DCI.

During extended decompression stops the divers may drift a considerable distance. If the dive site is near a busy traffic area then there is a risk that they will drift into the path of other vessels. If the weather is foggy or the dive boat does not spot the divers they may become lost.

It is clear that any sensible technical diver must take into account all of the risks they face and ensure that wherever possible they are reduced. Knowing when the risks on a particular dive are too great and knowing when to call a dive is one of the most essential skills for any diver.