Director To You

If Your Breathing Gas Safe?

from John Lippmann
OAM

As well as exerting toxic effects on the central nervous system, carbon monoxide can cause the oxygen levels in our body to fall dangerously low as it bonds to the haemoglobin in our blood more readily than oxygen does.

Carbon monoxide (and carbon dioxide) can be produced by diving compressors if incorrect oil is used and the compressor overheats. In this situation, some ignition can occur within the compressor and the resulting contaminant gases can be pumped from the compressor with the compressed air.

If the compressor is petrol-driven, the exhaust fumes are likely to contain carbon monoxide. It is imperative that the air inlet for the compressor is well away from, and upwind of, the exhaust outlet. It is also imperative that a compressor air inlet is well away from and upwind of any exhaust fumes or smoke, whether from cars, boats or fire.

Although there are filters that can remove carbon monoxide, these are rarely used, especially in less developed countries, so it is essential that the above precautions are taken, as well as regular servicing of the compressor and gas analysis to minimise risk of contamination.

Carbon monoxide is colourless, odourless and tasteless so cannot be detected when breathing from the cylinder. However, if any breathing gas has an 'oily' taste or smell it is prudent to avoid this, even though it may not contain carbon monoxide.

On page 30 of this *Alert Diver* we report on a diving accident that occurred earlier this year in the Maldives. Similar problems have occured from time to time and dive operators must ensure that that they take appropriate preventative measures to ensure the purity of the breathing gas supplied to their customers. Divers must also be vigilant and should refrain from diving if they suspect the purity of the breathing gas.

As occurred in the case reported, divers usually do not suffer noticeable effects of carbon monoxide poisoning until during or after the ascent. The reason for this is that while the diver is underwater, they are breathing oxygen at a higher than usual partial pressure so additional oxygen is being dissolved in the blood and transported to the body tissues. This helps to offset the reduced haemoglobin saturation resulting from the carbon monoxide. However, when the diver ascends and the oxygen partial pressure falls, the effects of hypoxia can occur rapidly, and the symptoms of carbon monoxide poisoning will become apparent.

As you may be aware, DAN Asia-Pacific tries to collect information about diving fatalities throughout this region as part of a larger International DAN data collection and reporting project. The purpose of the project is to report back to divers and the dive industry about problems that have occured, in the hope that similar problems can be prevented in the future.

When we publish this data we remove most identifying information (including any details of the victim, the person reporting the accident, dive operators involved and the exact location) to provide a level of privacy to those involved. Despite this, we have great difficulty encouraging parts of the dive industry, including major dive training agencies, to provide us with this vital information.

We therefore rely on divers and dive professionals in the field to contact us when they are involved in, or hear of, a diving fatality. We use such leads to try to seek further information so that we can compile the data and use it to improve diving safety, for the benefit of all.

In this issue, and in future issues of *Alert Diver*, we intend to publish a list of the regional dive fatalities that we have become aware of in the previous 3-4 months. We encourage all readers to view these and contact us if you know anything about the cases, or are aware of other cases that are not included in our list. With your help we will be able to improve our capture of information and so increase the value of this project to all of us. You can email us or download an Accident Report Form from our website by following the Accident Reporting & Research Tab.

Thanks for your support and Safe Diving,