

IMCA Safety Flash 13/09

September 2009

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learned from them. The information below has been provided in good faith by members and should be reviewed individually by recipients, who will determine its relevance to their own operations.

The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information on specific incidents you consider may be relevant. All information will be anonymised or sanitised, as appropriate.

A number of other organisations issue safety flashes and similar documents which may be of interest to IMCA members. Where these are particularly relevant, these may be summarised or highlighted here. Links to known relevant websites are provided at www.imca-int.com/links. Additional links should be submitted to webmaster@imca-int.com

I Use of Pre-Mixed Nitrox Gases

An incident has been brought to IMCA's attention where premixed cylinders or quads of nitrox gas may not have had the necessary oxygen content to sustain safe diving and the cylinder or quad may not, in fact, have contained the mix that was indicated on the label and/or accompanying paperwork.

In a recent near-miss incident, a contractor was conducting diving operations using third-party-supplied cylinders and quads of premixed nitrox via a dive control panel arrangement that fortunately included in-line gas analysers.

In a situation where the nitrox mix should have had a 36% oxygen content, during the operational monitoring process the contractor chose to immediately suspend diving operations when a reading of 32% oxygen content was observed by the panel operator and supervisor. Further tests were conducted which verified that the nitrox gas supplied was not the correct gas mix for safe diving operations.

During subsequent testing of both the cylinders and quad contents, an oxygen content of approximately 15% was observed in some cylinders, a percentage well below that specified and at a level where a serious incident could have resulted. Since there is an obvious increased risk of decompression sickness when the oxygen content of the nitrox mix required is less than the oxygen content specified in the decompression tables being used, attention to detail is critical. In this instance it was only the vigilance of the contractor that detected the problem before an incident occurred.

The following lessons may be drawn:

- ◆ The mix of the gas should be clearly specified to any third party supplier and knowledge of their quality assurance system known and understood before an order is accepted for operational use;
- ◆ Cylinders and quads delivered from third parties should have their gas content analysed after delivery and certainly before first use on site;
- ◆ The use of panel mounted in-line gas analysers has proved to be extremely beneficial in this case;
- ◆ Particular attention should be paid to individual bottles within their racks as any bad mix could dilute easily into the pack and not be found. If such a bottle were utilised as a single source for supply it would be particularly dangerous.