



Safety Flash

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IMCA Safety Flash I2/03

September 2003

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learned from them. 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 IMCA's Secretariat 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.

This safety flash includes updated information on two incidents, previously reported via safety flashes 08/03 and 11/03. The earlier reports have been deleted from those flashes, which are available for download from the members-only website or on request from the IMCA office.

I Near-Miss Involving Diver's Neck Dam (08/03)

Keywords:

We were recently provided with and issued details of a 'high potential' near-miss incident involving failings in a saturation diver's personal protective equipment. This information was issued as part of safety flash 08/03 under the heading 'Near Miss Involving Divers Neck Dam'. Feedback from equipment manufacturers has highlighted the need to make certain clarifications as it was felt that the wording of the flash may have been misleading.

Divers were in saturation, with one diver in the bell carrying out bell checks and two divers dressed and making final preparations prior to entering the bell. One diver was placing his neck dam over his head when he heard 'something' fall. Suspecting something untoward, he removed the neck dam to inspect it in detail. He observed that two of the four retaining screws in the rear hinge tab plate (at the back of the neck dam) were missing (with one screw $\frac{3}{4}$ out and the other secure). The screw $\frac{3}{4}$ out would not tighten and it was found, on close examination that the thread had stripped. The other screw was checked and found to be okay. The neck dam was locked out to technicians and the supervisor for further inspection and investigation.

An inspection highlighted the following findings:

- ◆ The neoprene sleeve to the neck dam had not been fitted according to company procedures;
- ◆ The retaining lug was loose and about to fail;
- ◆ Of the four retaining screws, all of which should be in position and tight, two were missing completely and one was missing its locking washer and was loose;
- ◆ Specialist adhesive (company procedure) had not been applied to the screws;
- ◆ The tapped hole, which should have held the missing screw, was found to have a stripped thread;
- ◆ The neoprene neck dam had not been positioned/fitted as per the company's procedures;
- ◆ It was obvious that the screw had been forced through the neoprene material, as there were neoprene 'plugs' found in the base of each screw hole. Any torque applied to the screws would have given a false indication of tightness.

The root causes were identified as:

- ◆ Unauthorised maintenance (neoprene neck dam not fitted as per company procedures);
- ◆ Failure to follow or understand company procedure that only technicians trained in dive hat maintenance are allowed to carry out work to dive hats and associated equipment (and/or a failure to properly communicate the company procedures to the workforce).

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The company involved has identified the following corrective actions:

- ◆ Briefing of divers that only authorised personnel are to carry out repair and maintenance on diving hats;
- ◆ Display of signs on entrances to the hat maintenance workshop to the effect that 'only authorised personnel are to carry out repair and maintenance on diving hats and neck dams';
- ◆ Display of signs on hat and neck dam storage racks in the hat maintenance workshops to the effect that 'only authorised personnel are to carry out repair and maintenance on diving hats and neck dams';
- ◆ Control stock of spare/replacement neck dams – now held under lock and key so that only hat maintenance technicians have access.

The previous safety flash stated that placing of the neoprene directly over the rear hinge tab retaining plate was an incorrect procedure. Members should note that this statement should have clarified that this method of fitting the neoprene was incorrect only in that it was not in compliance to the member company hat maintenance procedures and this statement was not intended to imply that other methods of fitting the neoprene neck dam practiced by and in accordance with other member companies established hat maintenance procedures or procedures issued by manufacturers/suppliers were therefore incorrect.

2 Regulator Fire (11/03)

Keywords: Ignition

This incident was originally included in safety flash 11/03, but the flash is being reissued in the light of additional feedback on the recommendations previously given. The earlier version has been removed from safety flash 11/03.

A member has recently experienced two oxygen regulator fires. In both cases the regulators were completely dialled in when pressure was applied from the oxygen rack.

The member company provided its workforce with these recommendations to prevent recurrence:

- ◆ Ensure the oxygen cylinders or banks are firmly secured;
- ◆ Inspect the cylinder valve for oil, grease and damage to the valve handle. Do not use the cylinder if oil or grease or a damaged valve is found;
- ◆ Momentarily open and close the cylinder valve prior to attaching the regulator. This dislodges any contaminants that are present and would otherwise enter the regulator;
- ◆ Carefully inspect the regulator for oil, grease or damaged parts. Do not use a regulator with oil, grease contamination or broken parts;
- ◆ Check that the regulator has the correct pressure rating and gas service for the cylinders being used;
- ◆ Attach the regulator to the cylinder and secure tightly;
- ◆ Stand so that the cylinder valve is between you and the regulator. Slowly and carefully, open the cylinder valve until the maximum pressure registers on the high pressure side. Then open the cylinder valve completely to seal the valve packing;
- ◆ Adjust the low pressure side adjustment screw to the desired pressure and check the system for leaks.
- ◆ When temporarily shutting down the system:
 - Secure the valve on the cylinder;
 - Open the valve on the downstream equipment – this will drain the system;
 - Close the valve on the downstream equipment and then turn the adjuster screw counter clockwise to release the pressure on the adjusting spring;
 - Check the gauges after a few minutes for verification that the cylinder valve is completely closed.