



DOCUMENT NUMBER

SAFETY FLASH 06/05

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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 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.

1 Hand Grinder Injuries

An IMCA member has reported two recent injuries caused by the use of portable hand grinders.

The first injury was due to the grinder wheel binding onto the weld being worked upon, causing the grinder to 'kick' and deflect into his arm. The grinder's side grip or stabilisation handle had been removed, making it harder to control the device.

The second injury happened when the operator lost control of the grinder as a result of his taking one hand off it whilst it was still turning at high speed. He had taken one hand off the grinder because he was attempting to prevent the pipe on which he was working from falling when it came out of a support stand. The grinding wheel was still turning at high speed and the gyroscopic precessing force acting on the tool was too great for the operator to handle with one hand. This led to the grinder being deflected into his other arm causing an injury.

The company has recommended the following steps:

- ◆ Reminding all persons operating grinders that they should be used very carefully, referring to and following all appropriate rules of operation;
- ◆ Taking time for risk assessment before commencing the job;
- ◆ Ensuring that all risks and issues are discussed in toolbox talks;
- ◆ Ensuring the work piece is very secure and cannot move.

The company also noted that there had been some re-use of grinding discs that had been used subsea. This practice is dangerous, as grinding discs which have been exposed to moisture are likely to de-laminate, causing them to disintegrate at high speed. Thus discs which have been exposed to moisture over a length of time or which have been used subsea should always be discarded.

2 Leaking Oxygen Valve

A member has reported an incident whereby which a diver experienced an oxygen leak from his cutting torch whilst on the seabed in around 27 msw. The leak came out of the torch handle where the oxygen valve housing and the torch handle connected.

The torch was recovered and tested on the surface, where no leaks were observed. The torch was then sent back to the diver, who once again noted a leak at depth. The torch was again recovered to the surface and the dive was terminated.

Upon further investigation it was noted that the fit-up between the oxygen valve housing and torch handle was just tight enough not to leak on the surface, but at depth the ambient pressure was enough to create an oxygen leak past the trigger/torch handle union.

The company involved has made the following recommendations to prevent recurrence:

- ◆ A leak test should be performed topside on all torches prior to placing them into service. If a leak is found, the torch should not be placed into service until the leak has been corrected;
- ◆ If a leak is found coming from the torch handle, the following steps should be taken to correct the leak:
 - Apply hand pressure to the oxygen valve housing/lever assembly as it is set into the handle and tighten one of the set screws while pressure is being applied;
 - Check to ensure that the groove on the oxygen valve housing is in line with the set screw by looking into the torch handle via the opening for the set screw that has not been reinserted, located on the opposite side of the handle.
 - Tighten the other set screw and perform a leak test on the torch. A leak test should be performed topside on all torches prior to placing them into service.
- ◆ The incident and recommendations should be communicated back to the vendors of the torches. Vendors and/or manufacturers to be asked to provide QA/QC documentation verifying that each torch oxygen valve housing has been inspected and is properly seated.

3 Near-Miss: Flooding of a Diver's Helmet

A member has reported a near-miss that occurred during diving operations. A diver's helmet – a Kirby Morgan Superlite 17B – flooded during the dive. Fortunately the diver was only at a depth of 3m at the time, a secondary retention system was fitted and the diver was able to reach the surface without further problems.

The initial investigation found that the helmet had become free of the neck dam yoke at the rear and that the rear hinge tab was separated from the helmet alignment sleeve. Normally, correct alignment of the helmet and neck dam yoke would be characterised by the helmet alignment sleeve being passed through the rear hinge tab. In this instance, the helmet was still connected at the front and was retained on the diver's head via the harness upper link assembly 'earrings' attached to the diver's harness.

The investigation found that the helmet came free because the helmet had not been correctly aligned with the neck dam yoke when the diver was being readied for the water. It concluded that this should have been easily spotted, pointing to the need for review of the final checks conducted immediately prior to the dive commencing.

The company has recommended the following actions:

- ◆ diving supervisors must re-examine their diver dressing process and checks to establish if both self-checks and cross-checks are firmly established and being followed by divers and deck crew;
- ◆ diver equipment checks must be verbally communicated between the diver in question, the person dressing the diver and the diving supervisor. These checks should be logged within the dive logs;
- ◆ divers should be reminded that they are responsible for safety checks of their own equipment, as far as possible. A competent person (normally another diver) must physically check that the hat is installed correctly on the neck dam prior to the diver entering the water.

The manufacturer of the helmet, Kirby Morgan Dive Systems, Inc. has provided the following safety information for proper dress-in procedures, as per its manual for this equipment:

- i) *“Prior to diving with any diving helmet, a competent person must ensure that the mechanisms that lock the helmet on the diver's head, as well as all other helmet functions, are adjusted properly and operating correctly, per the manufacturer's manual. These checks should be logged in the helmet logbook.*
- ii) *Because it is impossible for the diver to see whether the helmet has been latched on correctly, or whether his other equipment has been properly configured, it is essential that a competent person (an experienced tender or another diver) assists the diver in dressing in.*
- iii) *The diving supervisor is responsible for ensuring the diver is dressed correctly prior to entering the water. These final checks are normally carried out by a competent tender or another diver and should be logged in the diving operations (supervisor's) logbook.*
- iv) *Once the diver has entered the water, but before he proceeds with the work of the dive, it is the responsibility of the supervisor to ensure that all in-water checks for the diver's life support equipment are carried out. These checks should be logged in the diving operations (supervisor's) logbook.”*

The manufacturer has also now informed IMCA that it has developed a yoke strap, KMDSI part #505-134 and yoke strap guide, KMDSI part #505-138, which can be retrofitted to all Kirby Morgan Superlite 17A/B helmets. These are now standard issue on all Superlite 17 helmets. These items will help prevent separation of the yoke from the helmet, when properly installed and used. IMCA is also aware that a number of IMCA diving contractor members have provided alternative systems on such helmets which prevent the helmet becoming detached from the diver even in the event of the helmet and neck clamp assembly becoming separated. KDMSI has noted *“However, these items are not a substitute for proper maintenance of KMDSI helmets, or proper pre-dive inspection of the equipment by the dive, tender and the diving supervisor”*.