

Negative pressure injury to a diver

Safety Flash Published on 2 October 2001 Generated on 28 January 2026 IMCA SF 12/01

A Member has reported this recent incident, concerning negative pressure when breaking containment in subsea pipework.

What happened?

During diving operations on a subsea manifold in 140 msw, work was being undertaken to install additional four inch pipe spools in a well bay, to enable connection of a well to the manifold. The spools had been transported to the vessel with wooden blind protectors on the flange faces to prevent impact damage. These did not have pre-drilled vent holes and were to be replaced onboard the vessel with standard donut protectors. However, two assemblies were apparently overlooked and were subsequently deployed subsea with the unvented wooden blinds still in place.

At the time of the incident, the diver had manoeuvred the spool piece close to its final position, removed the tie wrap and then attempted to lever the wooden blind off the flange face using his knife. It appears that the blind then imploded, due to the build-up of negative pressure, pulling the diver's hand through the blind and into the spool, causing a fracture to the arm and dislocation of the thumb, bruising and swelling.

Our Member's investigation revealed the following:

Initial investigations indicate that a number of the existing checks and controls in the company procedures and safe working practices failed because they had not been adhered to:

- The actions documented in the project risk assessment to check blinds for vent holes were not systematically closed out;
- The assembly was overboarded with the wooden blind in place and this went unnoticed;
- The diver should not have attempted to lever the blind off the flange face; nor should he have placed himself in front of the flange.

Conclusion

While this safety flash is concerned with a negative pressure incident, it is important to recognise the seriousness of any incident involving uncontrolled pressure (positive or negative) when breaking containment in subsea pipework. These incidents inevitably have a high potential for injury and have,

in the past, led to diver fatalities.

IMCA Safety Flashes summarise key safety matters and incidents, allowing lessons to be more easily learnt for the benefit of the entire offshore industry.

The effectiveness of the IMCA Safety Flash system depends on the industry sharing information and so avoiding repeat incidents. Incidents are classified according to IOGP's Life Saving Rules.

All information is anonymised or sanitised, as appropriate, and warnings for graphic content included where possible.

IMCA makes every effort to ensure both the accuracy and reliability of the information shared, but is not be liable for any guidance and/or recommendation and/or statement herein contained.

The information contained in this document does not fulfil or replace any individual's or Member's legal, regulatory or other duties or obligations in respect of their operations. Individuals and Members remain solely responsible for the safe, lawful and proper conduct of their operations.

Share your safety incidents with [IMCA online](#). Sign-up to receive Safety Flashes [straight to your email](#).