

IMCA Safety Flash 08/07

August 2007

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

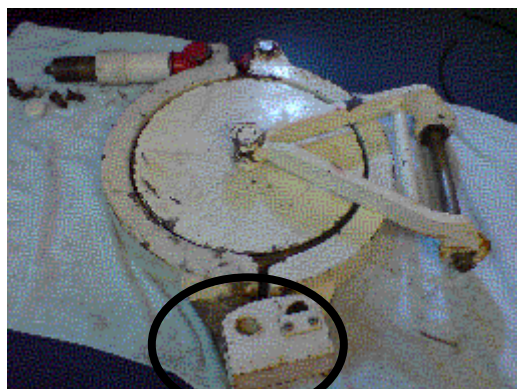
I Failure of Welding on Hyperbaric Rescue Chamber Medical Lock Door Assembly

A member has reported that a weld failed on the medical lock door assembly of a hyperbaric rescue chamber. The incident occurred during a pressure test of the system and an employee sustained serious injuries after being struck by the displaced medical lock door.

A report commissioned by the company, conducted by an independent metallurgical laboratory, identified that the welds in the bracket could have failed at any time due to there being less than 1 mm of weld remaining. This was partly due to corrosion of the metal and partly due to poor welding.

It was calculated that a downward force of 10-20 kg would have been sufficient to cause the weld to fail. The full penetration weld within the bracket was only 0.8-1.0 mm thick at best and the supporting fillet weld had no fusion along one of its lengths.

These pictures show the hyperbaric rescue chamber medical lock door assembly and the positioning of the C clamp retaining bracket, the second picture clearly indicating a weld feature that failed whilst in operation.



Medical lock door assembly



C clamp retaining bracket (after failure)

The company's findings were as follows:

- ◆ The C clamp retaining bracket was never regarded as being a load bearing or critical component and as such was never included in routine checking or inspection of the assembly.
- ◆ At the time of installation of the assembly the engineering, certification or inspection regimes were not as stringent as they are now.
- ◆ It is recommended that all load bearing components within a dive spread are thoroughly inspected for signs of corrosion or damage.