



# SAFETY ALERT

## - TECHNICAL No. 22

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### FIXED CO<sub>2</sub> FIRE-EXTINGUISHING SYSTEM DISCHARGE NOZZLES

Following a recent fire on board a UK registered Fishing Vessel, the source of the fire was traced to the battery area, and was possibly caused by shorting of the battery cables/terminals.

The crew took the correct action in closing down the Engine Room and injecting CO<sub>2</sub> smothering gas which effectively extinguished the fire.

Of concern is a report that the discharge nozzles fitted to the distribution piping of the fixed CO<sub>2</sub> fire-extinguishing system were made of plastic. The nozzle in the immediate vicinity of the seat of the fire melted and effectively blocked the piping discharge hole to that nozzle.

MCA guidance stipulates the material requirements for the CO<sub>2</sub> distribution piping, but not explicitly for nozzles, (although this is stated in the British Standard, BS EN 12094, Part 7, for the discharge nozzles).

It is recommended that during surveys particular attention is paid to the discharge nozzles fitted to fixed fire-extinguishing systems, and if plastic ones are found that these are replaced, as soon as possible, with suitable nozzles that shall withstand both the high temperatures generated during a fire and the cold shock caused by the extinguishant as it is discharged, that meet the BS EN 12094, Part 7 standards.

Attached is a photo showing the CO<sub>2</sub> nozzle nearest to the fire (above but inboard of the batteries). It can be seen, from the close-up shot, that the melted nozzle has completely sealed the opening from the CO<sub>2</sub> distribution pipe.

Also included is a photo of two other nozzles taken from the vessel, note that one of the nozzles (in the same position as the one that was completely melted, but on the other side of the Engine Room) shows a considerable amount of melting, the other nozzle was more remote from the seat of the fire and is largely unaffected.

For further information please contact:-

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Melted plastic CO<sub>2</sub> discharge nozzle



Plastic CO<sub>2</sub> discharge nozzle



Melted fire detectors



Seat of the fire in the battery bank cables connections