

MAIB SAFETY BULLETIN 1/2004

Near lethal use of CO₂ onboard the fishing vessel

Elegance

30 miles north-west of the Shetland Islands

30 January 2004

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This document, containing Safety Recommendations, has been produced for marine safety purposes only, on the basis of information available to date.

The Merchant Shipping (Accident Reporting and Investigation) Regulations 1999 provide for the Chief Inspector of Marine Accidents to make recommendations at any time during the course of an investigation if, in his opinion, it is necessary or desirable to do so.

The Marine Accident Investigation Branch (MAIB) is carrying out an investigation into the engine room fire onboard *Elegance* that occurred on 30 January 2004. The MAIB will publish a full report on completion of the investigation.

Stephen Meyer
Chief Inspector of Marine Accidents

Press Enquiries: 020 7944 3232/4691; out of hours: 020 7944 4292

Public Enquiries: 020 7944 3000

INTERNET ADDRESS FOR DFT PRESS NOTICES:

<http://www.dft.gov.uk>

Background

At 2300 on 29 January 2004, *Elegance*, a twin rig 23.92 metre trawler sailed from Scrabster to fishing grounds 30 miles north-west of the Shetland Islands.

The vessel had been towing her twin rig gear for about 3 hours when the skipper saw smoke coming from the outlet of the engine room exhaust ventilator. He went to the engine room immediately, where he discovered a fire. The skipper attempted to isolate the fuel systems, but without success. He then transmitted a "Mayday". About 30 minutes into the incident, he tried to operate the fixed CO₂ system. However, this failed because the system had been badly maintained, and the crew's knowledge of the operating procedures was, at best, superficial. At about this time, smoke from the engine room began to reduce, and the skipper was under the impression that CO₂ had been successfully discharged. A short time later, he, together with the ship's engineer, entered the engine room to see if the fire had been extinguished.

In this case, the fire died out without the use of the CO₂. However, the outcome could have been very different, and this case highlights the need for effective maintenance and testing, and knowledge of how to use the system.

Even more importantly, the skipper and ship's engineer were unaware of the potentially lethal dangers they faced when they re-entered the compartment. Had the CO₂ system been successfully discharged, the engine room would still have contained dangerous levels of CO₂ at this time, and it is highly likely that the decision to enter could have resulted in the death of both men.

Safety Recommendations

Skippers and crews are reminded that the Regulations require that all crew onboard UK registered fishing vessels have completed the compulsory one day “Fire Prevention and Fire-Fighting” training course. This course can be arranged by contacting SEAFISH on 01482 327 837.

In the event of a fire in the engine room, skippers and crews should ensure that they are fully conversant with the operation of the remote controls for the isolation of fuel oil, hydraulic oil and ventilation systems from the space. They must also have a good understanding of the operation of fixed CO₂ fire extinguishing systems.

In particular:

1. Whenever it has been necessary to release CO₂ into the engine room to extinguish a fire, ventilation of the space should not be resumed until it has been confirmed that the fire is out and the space has sufficiently cooled to prevent re-ignition.
2. Thereafter, entry into a space that has contained CO₂ should only be attempted by personnel using breathing apparatus. If breathing apparatus is not carried on board, and it really is impossible to wait for assistance from ashore, entry should only be attempted when the space has been thoroughly ventilated with clean air, and all residues of CO₂ have been removed. It is strongly recommended that this should include the need to obtain expert advice from ashore before any attempt at re-entry is made.

Additionally, all fishing vessel skippers and crews are recommended to:

1. Ensure remote controls for fuel oil and hydraulic pumps, quick closing fuel oil valves and closing devices for ventilators, emergency stops for ventilation fans and CO₂ fixed fire-fighting systems are tested regularly and maintained in good order.
2. Ensure clear instructions for operating CO₂ extinguishing systems are displayed near the distribution control valves and near the gas cylinders.
3. Ensure audible alarms for warning personnel within the engine room, that the CO₂ fire extinguishing system is about to be operated, are regularly tested and maintained in working order.