Improper release of carbon dioxide on board M.V. "YM People" on 27.9.2004 causing four fatalities

1. The Incident

1.1. At about 0900 on 27 September 2004 (time specified in the report refers to ship local time), an improper release of 5,060 kg of carbon dioxide from the CO_2 manifold to atmosphere in the CO_2 room occurred on board the Hong Kong registered container ship named “YM PEOPLE” whilst the ship was 430 nautical miles east of Sri Lanka on a voyage from Singapore to Suez Canal. Four crewmembers inside CO_2 room namely the Master, the Chief Engineer, the Chief Officer and the Third Engineer were suffocated by carbon dioxide and died as a consequence.

2. Findings

2.1. The direct cause of the accident was that the release of carbon dioxide gas trapped in the Manifold of a CO_2 fixed fire fighting system into the atmosphere was not carried out in a safe, well-planned and controlled manner.

2.2. The Chief Engineer showed that he lacked the knowledge to prepare the fixed fire fighting system for inspection and maintenance and might have tampered with the system resulted in accidental release of all 92 cylinders.

2.3. All accidentally activated CO_2 cylinders could not be manually closed because the control gas for activation of 92 bottles of CO_2 cylinders was continuously supplied from the carbon dioxide gas trapped in the Manifold.

2.4. The Company and the crew on board the Ship did not have any previous experience in handling similar situations. They did not appreciate the seriousness of the incident so that the relevant authorities would have been informed and shore assistance sought. Consultation for proper corrective action was found insufficient.

2.5. The Company and the Crewmembers were lack of safety awareness. No effective risk assessment had been carried out by the Company and the crewmembers on board before the release of trapped carbon dioxide gas in the Manifold to the atmosphere.

2.6. The lack of written instructions and guidance from the Company as to how, and under what precautions and conditions, carbon dioxide could be released.

2.7. The other crewmembers were not aware of the hazardous situation they were facing.

2.8. The Company failed to inform the flag Administration and the Singapore port Authority immediately after the accidental release of 92 bottles of CO_2 cylinders.

3. Lessons

3.1. The Management Company should remind their officers of the importance of proper handling of the fixed fire fighting system at all times in dealing with any abnormality that may occur to the system.

3.2. The manufacturer of the fixed fire fighting system should review the operation manual of the system to ensure sufficient warning and instructions are included in the operational manual with regard to the danger of accidental activation of CO_2 cylinders that may result in carbon dioxide being trapped in the manifold.

3.3. A Merchant Shipping Information Note (49/2005) should be issued to promulgate the lessons learnt from this fatal accident, drawing the industry's attention on the importance of proper handling of fixed carbon dioxide extinguishing system particularly to the manual starting-cylinder groups or similar arrangement to prevent re-occurrence of the accident. The officers on board should also be reminded that alteration of the fixed fire fighting system on board should not be carried out unless prior approval is obtained from the Administration.

3.4. The Management Company should be warned that the accidental release of the firefighting medium in the fixed firefighting installation is a very serious matter. The Flag Administration must be informed. A ship should not be operated with an engine room or cargo holds without protection of a fixed fire fighting system.

The bended pipe and the damaged floor insulation material after the accident