MAIB REPORTS

Norman Arrow
Towards the end of May the British Marine Accident Investigation Branch (MAIB) issued a report into accidents occurring to a high speed ferry in March and August last year.

On 31\textsuperscript{st} March 2010, the UK-registered high speed ferry Norman Arrow was damaged when she struck fixed fendering in Portsmouth International Port while attempting to move between berths. Five months later, on 29\textsuperscript{th} August, Norman Arrow was again damaged when she struck a mooring dolphin as she approached her berth in Le Havre. There were no injuries, but after both accidents the vessel had to be taken out of service and repaired in dry dock.

The accidents occurred as a result of an inability to manoeuvre the vessel as intended in the strong winds encountered. Contributing factors included the lack of operational procedures for manoeuvring in port with respect to limiting wind speed and relative direction, and the use of tugs. Another factor was that the vessel’s design restricted the ability of personnel on the bridge to see objects near to the vessel. It was found that there was poor bridge ergonomics, ineffective bridge team management and use of equipment and, furthermore, there was MCA’s difficulty in assessing whether the visibility from Norman Arrow’s manoeuvring station met the requirements of the High Speed Craft Code.

Norman Arrow is one of the largest high speed craft in the world, and these two accidents in relatively quick succession underline the potential difficulty of manoeuvring such light-displacement, high-sided craft at slow speed in confined areas and strong winds. The accidents also highlight the need for flag and port states to fully take into account changes in vessel design when determining operating limitations. It was learnt from the Synopsis to the MAIB Report that after the first accident, recommendations were made to the MCA, Louis Dreyfus Lines, and Portsmouth International Port, which were aimed at improving the vessel’s safe operation, particularly in port. In view of these recommendations, and the actions identified by the MCA’s formal investigation undertaken following Norman Arrow’s accident in Le Havre, it is understood that no further recommendations have been made.

Ever Excel
A few days before the above report was received MAIB had issued a report into the death of an engineer in a British-registered container ship last year. On 21\textsuperscript{st}
April 2010 the Chief Engineer on board the UK registered container ship *Ever Excel* was killed when he became trapped between the top of the ship’s passenger lift and the edge of the lift shaft.

*Ever Excel* was alongside in Kaohsiung, undergoing a preliminary environmental compliance inspection, which required that the pit of the lift shaft be checked for oil residues. The Second Engineer was unable to open the lift shaft doors to gain access to the lift pit and the Chief Engineer intervened to resolve the problem. Without stating his intentions, the Chief Engineer entered the lift car, climbed through an escape hatch to reach the top of the lift car, and closed the hatch behind him.

The Second Engineer reset the lift controls, incorrectly assuming that the Chief Engineer had taken manual control of the lift from on top of the lift car. The Chief Engineer had not, and the lift was returned to its normal automatic operating mode. The lift moved upwards at its usual operating speed and trapped the chief engineer against the door sill of the deck above, asphyxiating him. It is not known exactly what the Chief Engineer intended to do, but it is likely that he was looking at the back of the lift shaft doors to establish how the locking mechanism worked.

Investigation found that all the safety barriers that could have prevented the accident had been ignored, reset, or circumvented. Risks associated with lift maintenance and inspection had not been considered. Apparently this was the third fatal accident in an eight-month period on board ships operated by Evergreen Marine UK Limited (EMU). One crewman was killed in *Ever Elite* and another in *Ever Smile* in occupational accidents. EMU sent specific instructions and procedures to the ships immediately following the accidents; however, the underlying safety issues were not addressed.

According to the MAIB Report investigation found that, although EMU’s safety management system was compliant with the international standard, there were serious failings in its implementation. Few risk assessments were completed, safe systems of work had not been established and work permits were not used appropriately. Communication between crew and shore management was ineffective, and underlying problems were not identified.

It is understood, further, that the MCA has assisted EMU in developing its system of risk assessment and operating procedures and that EMU has subsequently developed additional training in safety awareness and lift maintenance, and has sent further instructions to its ships on safe working.
In conclusion, a recommendation has been made to the highest levels of EMU’s management to recommit to establishing a “just safety culture” within a robust safety management system. MAIB’s Report concludes with a list of considerable improvements set out along with future plans to improve safety. In conclusion Evergreen Marine (UK) Limited was presented with a series of recommendations to demonstrate its commitment as mentioned above.

Yeoman Bontrup

In what appears to have been a busy May MAIB also issued a flyer to the shipping industry regarding a radiation hazard identified following a fire in the vessel Yeoman Bontrup.

On 2nd July 2010, a fire was discovered on the vertical cargo conveyor belt of the self-unloading bulk carrier Yeoman Bontrup while the cargo hopper was being repaired. The crew tackled the fire from the conveyor tunnels under the holds, but it quickly spread throughout the cargo handling area and into the accommodation. The fire also spread into the engine room by heat transfer through the bulkheads and via an open connecting door, and then to the steering gear compartment which contained a number of hydraulic systems as well as stocks of oils, greases, and ship’s-use chemicals. There, the fire caused a large explosion that blasted the entire poop deck into the air and onto the funnel deck. Fortunately, there were only minor smoke inhalation and bruising injuries.

This fire was most likely caused by hotwork repair debris falling from the cargo hopper at the top of the tower into the flammable side curtain of the vertical conveyor belt.

The flyer then went on to introduce radioactive isotopes. Silometer devices, containing radioactive Cobalt 60 isotopes, were fitted to the cargo hopper to detect excessive build up of cargo in the self-unloading system. The silometers had not been used for ten years, and the outer shells of the source containers were in an extremely poor condition. However, the radioactive isotopes inside them were still active. During the fire, the lead shielding around one of the radioactive source containers melted, exposing the radioactive source container itself.

The onboard risk assessments did not include the risk of exposure to gamma ray radiation, and the Safety Management System did not provide any guidance on inspecting the silometers or safety precautions to be taken. Consequently welding operations regularly took place in the hopper area without any precautions being
taken to warn or protect the personnel involved. It is understood that when the fire broke out none of the firefighters or salvors was warned of the potential hazard and inspectors and surveyors investigating the cause of the fire were consequently exposed to low levels of radiation when they inspected the cargo hopper area. Fortuitously, the source containers were not breached; had this occurred the fire could have spread radioactive particles throughout the surrounding area, generating a severe risk to health.

As automation in ships has increased, so has the use of radiation sources in control devices. This is especially so in bulk carriers and dredgers. While the Ionising Radiation Regulations 1999 apply to radioactive equipment ashore in the UK, and there are clear instructions for handling cargoes containing radioactive sources, currently there are no international regulations specifically governing radioactive sources used in ship’s equipment. Consequently, the MAIB has recommended the flag state to submit proposals to the IMO to introduce standards for management of radioactive sources for use in the marine environment.

The flyer concluded with some safety lessons. Where appropriate, ship owners and managers should ensure their Safety Management Systems provide comprehensive guidance for the control, use, inspection, maintenance and disposal of radiation sources fitted to their vessels to ensure that risks of exposure to radiation are minimised. The lessons continued by saying that such guidance should include the potential risk to health from exposure to radiation resulting from an accident such as a fire or collision. In conclusion the lessons advised that emergency plans should ensure that the presence of radiation sources is brought to the attention of attending emergency services so that the radiation risk is given due consideration.