



Ship Type: All Trade Area: All

Bulletin 473 - 06/06 - Steam Burn Incident in Engine Room - Worldwide

An Australian Transport Safety Bureau (ATSB) investigation has found that a lack of hazard awareness and safety control measures led to the chief engineer on board a bulk carrier sustaining burns to 45 percent of his body. The chief engineer when he was scalded by hot water that unexpectedly sprayed from a steam valve he and a junior engineer were working on.

The engineers were working in the engine room while the ship was at anchor for an expected period of fifteen hours before port entry. While they were dismantling the turbo alternator exhaust steam valve a thousand litres of pressurised hot water unexpectedly sprayed from the valve and onto the chief engineer standing on staging below.



In an effort to escape the hot water spray the chief engineer tried to jump clear of the staging but became entangled in the ropes securing the staging; he had one leg either side of the securing rope and had fallen forward. The report concludes that

- Insufficient time was left between when the steam plant was shut down and the valve was opened up and consequently the exhaust steam system had not completely drained
- The engineers did not fully assess the exhaust steam piping system and the inadequacies in its drain arrangements. They did not take appropriate steps to ensure that the pipe lines on both sides of the valve were fully drained
- A single rope was used to secure the whole of the staging and it was too long for its intended purpose. The rope was led from railing to railing and tied off the ladders as well as the inboard and outboard bearers
- The control measures outlined in the ship's safety management system were not implemented and measures implemented by the ship's engineers did not adequately protect them
- Two previous audits failed to detect that permits were not being used on board the ship for tasks such as steam valve repairs.

The ATSB made the following recommendations

- The ship managers should review the safety management systems on board the ship and her sister ships to ensure they contain adequate control measures for critical tasks such as a steam valve repair
- Ship owners, managers and auditing authorities should review routine safety management system auditing plans to ensure that procedures and control measures that are critical to personnel safety, such as work permits, tag-out systems and safety analysis, are implemented on board all ships
- Training institutions, regulatory authorities and ship managers should consider the implementation of a form of team resource management training for engineers. This training should be aimed at encouraging the implementation of principles and practices consistent with the STCW95 requirements for BRM training of deck officers.

The full report and other incident reports can be downloaded from the ATSB website www.atsb.gov.au.

Source of information: Australian Transport Safety Bureau (ATSB)
Marine Incident Report No. 221
www.atsb.gov.au