

Safety Flash A12-06



Issued: 08th May 2012

Subject: Electrical shock incident due to incorrectly earthed equipment

Incident

Whilst conducting routine inspections of the Engine Room supply fan dampers, two engineers received an electrical shock when they touched the housing of the auxiliary generator supply fan.

An investigation concluded that the supply fan housing unit was not earthed and when the insulation of the electrical appliance failed, the cabinet was 'live'. The supply fan operates at 440VAC/3 Phase @ 30 amps. The measured difference between the supply fan housing unit and hull was 128 VAC. Consequently the earth leakage was not detected by the vessels earth leakage monitoring system. Further inspection of the vessels electrical equipment identified similar discrepancies with some electrical equipment and cabinets.

Furthermore, what is not well known is the medical condition that can result from an electrical shock. This condition is called myocardial infarction. In order to detect myocardial injury after electrical shock, the patient should be transferred to a medical facility and undergo an echocardiogram (ECG) as soon as possible. The engineers did report to a medical facility and undergo an ECG. They were discharged a short time later with no abnormalities identified.

Lesson Learnt

Vessel management should include an inspection of all fitted electrical equipment and cabinets, ensuring that they are correctly earthed in accordance with SOLAS 2009 – Regulation 45. *Precautions against shock, fire and other hazards of electrical origin.*

Any personnel who has received an electrical shock, should be conveyed to the nearest medical facility and undergo an ECG.

References

Further information about myocardial injury can be found at www.cardiologyjournal.org and SOLAS 2009 – Regulation 45. *Precautions against shock, fire and other hazards of electrical origin.*