

IMCA Safety Flash 24/16

September 2016

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learnt from them. The information below has been provided in good faith by members and should be reviewed individually by recipients, who will determine its relevance to their own operations.

The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat (imca@imca-int.com) to your internal distribution list for safety alerts and/or manually submitting information on specific incidents you consider may be relevant. All information will be anonymised or sanitised, as appropriate.

A number of other organisations issue safety flashes and similar documents which may be of interest to IMCA members. Where these are particularly relevant, these may be summarised or highlighted here. Links to known relevant websites are provided at www.imca-int.com/links. Additional links should be submitted to webmaster@imca-int.com.

Any actions, lessons learnt, recommendations and suggestions in IMCA safety flashes are generated by the submitting organisation. IMCA safety flashes provide, in good faith, safety information for the benefit of members and do not necessarily constitute IMCA guidance, nor represent the official view of the Association or its members.

Focus: Fire

The three incidents in this safety flash all deal with fire or the potential for fire. The first covers an engine room fire on a vessel, which led to a fatality. Amongst the identified causes were a failure to properly assess risk.

The second incident covers the risk of fire arising from welding in 'no hot work' zones – a practice that members are clearly still encountering.

The third incident deals with a fire in the accommodation which was caused by an overheating laptop computer.

1 Fatal Engine Room Fire on Suction Dredger Arco Avon

The UK Marine Accident Investigation Branch (MAIB) has published a report into a fatal fire in the engine room of the suction dredger, *Arco Avon*, in August 2015.

A fire broke out in the engine room while the vessel was loading a sand cargo approximately 12 miles offshore. The vessel's third engineer was badly burned in the fire and later died as a result of his injuries. As a consequence of the fire, which was extinguished following activation of the CO₂ smothering system, the vessel lost all power and remained at anchor with its dredging equipment partially deployed for 9 days until it could be taken under tow and delivered to a repair facility.



The MAIB investigation concluded that:

- ♦ The third engineer was attempting to repair a failed fuel pipe when fuel, under pressure in the pipe, ignited;
- ♦ No one else on board was aware of a failed fuel pipe or that the third engineer had apparently decided to repair it;
- ♦ The third engineer was using a portable angle grinder to access the repair site and had underestimated the risk of doing so;
- ♦ Possible contributing factors to the third engineer's underestimation of risk were that he had neither carried out a formal risk assessment nor sought a permit to work before starting the repair.

The full MAIB report can be downloaded [here](#).

Members may wish to review the following:

- ♦ [IMCA SF 10/14](#) – All the incidents in this safety flash cover fires in engine room spaces;
- ♦ [IMCA SF 12/14](#) – Incident 1 – *Engine room fire*;
- ♦ [IMCA SF 08/15](#) – Incident 4 – *Fatalities: engine room fire caused by fuel spray ignition*.

2 Near Miss: Welding in NO HOT WORK Zone

A member has reported a near miss incident in which welding was discovered which had clearly taken place in a 'no hot work' zone. The welding was discovered during pre-sail departure checks of the main deck. The Chief Officer noticed dogging plate welds securing a half-height container had been welded on to a 'no hot work' zone on the deck.



The above figure shows Welds on 'no hot-work' zones



Clearly identified RED 'no hot-work' zones

Our members' initial finding was that the task was not properly planned or supervised, allowing sea-fastenings to be welded on to a 'no hot-work' zone.

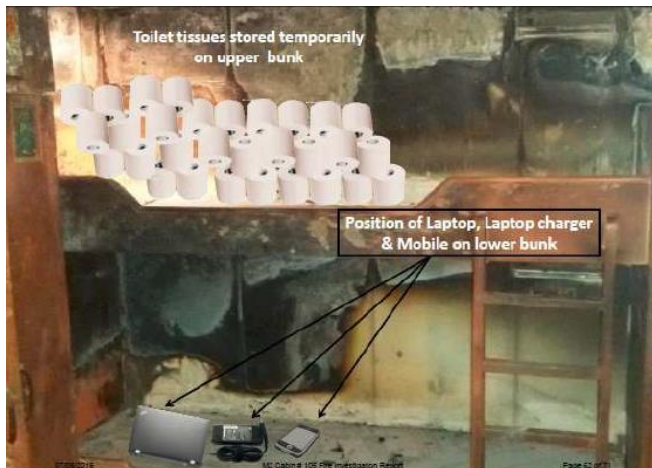
Members may wish to refer to the following incident (search word: *hot work zone*):

[IMCA SF 08/15](#) – Incident 1 – *Near miss: hot work in no weld zone*.

3 Fire in Vessel Accommodation – Overheating Notebook Computer

A member has reported an incident in which there was a fire in the accommodation of an offshore support vessel. The vessel systems were unaffected by the fire and there were no injuries caused by the fire or the subsequent

actions to extinguish the blaze. Damage was limited to the walls, ceiling, furniture and furnishings of the cabin in which it occurred.



Location of fire



"Re-enactment"

Sequence of events:

19:00 – Catering crew finished shift;

19:15 – 19:20 (approximately) – Notebook computer observed left on the bunk bed in cabin, with the lid closed;

20:15 – Fire alarm sounded from the cabin which had been vacated at approximately 20:00. Upon the alarm being raised the Bridge despatched the AB/crane driver who was on deck to check on the reason for the alarm. Door to the corridor was opened and the corridor was found to be full of smoke – this information was relayed to the Bridge. Bridge personnel activated the general alarm and mustered all personnel. The accommodation ventilation air conditioning was shut down as per standard operating procedure in the event of a fire;

20:19 – 20:31 – Fully dressed fire team attended to the fire. The door was checked for excessive heat and upon opening the door to the cabin it was discovered that the fire was by now mostly heat and smoke; the air ingress caused by the door opening had caused the fire to flare up. Dry powder fire extinguishers were used to tackle the blaze and was extinguished in a matter of seconds. A second fire team did not attempt to locate the wall mounted fire hose cabinet in the alleyway because of the thick smoke, so a fire hose was run from the fire pump supplied connection on the port side of the main deck to provide boundary cooling for the room and the corridor. Nearby vessels and installations were contacted to provide assistance;

20:31 – Bridge were notified that the fire was extinguished;

20:33 – The Chief Officer and 2nd Officer checked the cabin, and adjacent cabins, for hot spots. Ventilation of the cabins had begun in order to clear the smoke. The remains of the notebook computer were seen, still on a bunk, along with the power supply.

Our members' investigation revealed the following:

- ♦ The occupant of the cabin had borrowed the notebook computer and was not an experienced computer user;
- ♦ The notebook computer had been fully charged when he turned it on so he didn't plug it in to charge it;
- ♦ It appears that the notebook computer was inadvertently turned on whilst laying on a bunk bed, and this reduced the efficiency of the cooling fan which caused the computer to overheat;
- ♦ The integrity of the scene, with regard to investigation, was necessarily compromised after the incident;
- ♦ The remains of the notebook computer were at the heart of the fire, but had been rendered almost totally unrecognisable after being subjected to the fire and the water spray – distinctly heavy burning to the mattress and the wood underneath was evident at the notebook computer location;

- ♦ The remains of the computer along with other debris were scraped up, removed and subject to further water cooling to prevent the possibility of re-ignition;
- ♦ The bunk curtain also caught fire and this allowed the flames to track up onto the top bunk which was unoccupied. There were flammable items kept on the unoccupied bunk including toilet paper which also caught fire. The two bunks and mattresses were damaged, as were bunk curtains and adjacent wall and ceiling panels.

The **root cause** of the incident appears to have been:

- ♦ Leaving the notebook computer lying on the bedding would have decreased the efficiency of the cooling fan and caused the notebook to overheat;
- ♦ The cabin was left unoccupied with electronic equipment inadvertently left powered on;
- ♦ Toilet rolls were left on the top bunk, this easily combustible material will have ignited and burnt very quickly.

Our member took the following **corrective** actions:

- ♦ Checked of all cabins to ensure that there were no electrical/electronic items which might cause a similar incident;
- ♦ Safety flash was issued and Toolbox Talk was held to emphasise the dangers of leaving electrical items charging unattended. Also, stating that care should be taken to ensure that fans and cooling vents are not compromised on electrical equipment;
- ♦ Signs (stickers) to be posted next to all cabin sockets stating that *“No electrical items are to be left charging while unattended. Fans and cooling systems of Electrical Equipment not to be obstructed while in use or charging”*;
- ♦ Vessel inductions to be revised to include electrical safety – a do’s and don’ts list will be developed;
- ♦ Personal electrical equipment used in cabins will need to be inspected and approved by the electrical technical officer (ETO);
- ♦ ETO to conduct regular unannounced inspections to ensure that there are no electrical hazards present in the cabins;
- ♦ Extension cables and sockets to have surge protection and some form of overload or ground fault protection such as an RCD.

Members may wish to refer to the following incidents (search words: *charger, battery, fire*):

- ♦ [IMCA SF 16/08](#) – Incident 1 – *Laptop battery fire and explosion*;
- ♦ [IMCA SF 17/14](#) – Incident 2 – *Lithium battery pack explosion*;
- ♦ [IMCA SF 16/16](#) – Incident 5 – *Mobile phone charger failures*.