

IMCA Safety Flashes summarise key safety matters and incidents, allowing lessons to be more easily learnt for the benefit of all. The effectiveness of the IMCA Safety Flash system depends on Members sharing information and so avoiding repeat incidents. Please consider adding safetyreports@imca-int.com to your internal distribution list for safety alerts or manually submitting information on incidents you consider may be relevant. All information is anonymised or sanitised, as appropriate.

Fires and fire risks on vessels

1 Fire in incinerator and exhaust fan motor

What happened

An incinerator was being routinely operated by its designated operator. After the last garbage parcel was inserted into the chamber, the operator noticed flames and smoke coming out of the exhaust pipe and ash removal door. The bridge was immediately informed via radio. The operator left the room, and activated the emergency stop and the hi-fog system. The fire alarm was sounded and the crew mustered. While the fire teams responded to the fire in the incinerator, multiple fire sensors located in the casing and engine room were activated automatically. Fire fighters went to the engine room and found the exhaust fan motor from the incinerator on fire. The fire was extinguished by dry powder extinguisher.

What went wrong?

The exhaust fan holding bolts were found broken inside the casing.

Investigation confirmed that the fire was caused by overloading the incinerator with plastic and thereby creating excessively high temperatures. This led to overheating of the exhaust fan which created an imbalance of the fan and consequent failure of the bolts.

Actions/lessons learned

- ◆ The manufacturer's recommendations for maximum loads for the incinerator chamber, in terms of type and amount of waste, should be displayed at a conspicuous place near the incinerator;
- ◆ Further documented training/familiarization for the operators;
- ◆ Segregation of waste as per garbage management plan.

Members may wish to refer to

- ◆ [Fire In Incinerator Exhaust Gas Manifold](#)
- ◆ [Galley Fire: Failure To Follow Stove/Oven Installation Instructions](#)

Applicable
Life Saving
Rule:



Bypassing
Safety
Controls



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2 Smouldering fire in tumble dryer

What happened

A tumble dryer was in operation when the heat within the machine exceeded its safe operating level resulting in items of laundry inside the machine overheating and generating smoke.

A crew member smelt smoke in the laundry and established it was coming from the tumble dryer. The tumble dryer was switched off and then opened and at which point the laundry items ignited due to the ingress of air. The fire was quickly extinguished using a nearby fire extinguisher, the bridge was informed and a fire team mobilised to confirm the area was safe.

What went wrong?

The fire was due to a build-up of dust/residue inside the exhaust ducting between the tumble dryer and secondary filter, causing the safe operational limits of the machine to be exceeded.

Further investigation established that the heat sensor, a safety feature designed to protect the machine from overheating, had failed.

Actions/lessons learned

- ◆ **If you see or detect a fire, raise the alarm! Never investigate further or tackle the fire unless it is safe to do so;**
- ◆ Ensure that all tumble dryer filters and exhaust systems are regularly cleaned;
- ◆ Ensure that the design of the tumble dryer filters and exhaust ducting enable full access to the tumble dryer and exhaust ducting. Consider whether additional access hatches need to be installed to improve access;
- ◆ Check of the safety sensors within the tumble dryers and consider installation of a secondary safety sensor as back-up;
- ◆ Confirm that heat and smoke detection in laundry rooms is suitable and sufficient.

Members may wish to refer to

- ◆ Fires in tumble dryers: www.imca-int.com/alerts/search-safety-flash/?swpquery=tumble%23
- ◆ [Auto-ignition of laundry items](#)
- ◆ [Near miss: potential fire – overheating of oil in deep frying pan \[issues with temperature sensor\]](#)
- ◆ [Fire in incinerator exhaust gas manifold \[issues with temperature sensor\]](#)



Laundry Room with tumble dryer in the background (Dust from smouldering laundry can be seen on the floor)



Inside tumble dryer (Dust from smouldering laundry can be seen inside)

3 Fire in a safety locker

What happened

A small fire occurred in the safety locker of the changing room. The safety locker was used to store various safety items including among others: an Aldis-lamp spare battery in its carton packaging, a spare stainless steel wire coil for the rescue boat, a Holmes (lifebuoy) light filled with regular batteries and various other safety items packaged in carton boxes. During rolling of the vessel, the steel wire fell from its position and came in contact with the spare Aldis battery. This created a short circuit and caused high temperature/sparks. As a result the Aldis battery and the steel wire coil were damaged and some of the carton boxes were slightly burned. The smoke triggered the fire alarm and the fire team responded immediately. Although the damage was limited to the above, the consequences could have been much more serious under slightly different circumstances.

Applicable
Life Saving
Rule:



Energy
isolation



What went wrong?

The materials within the safety locker sparked a fire in combination with each other. The specific combination and cause of the fire is quite unusual but it can still cause a fire.

The storage of the materials, although at first sight was safe and sufficient, did not take fully into account the fire triangle principle.



Actions/lessons learned

- ◆ The surroundings of stored materials should be taken into account when considering fire risk;
- ◆ Beware of the combination of stored items which may cause development of sparks and/or heat;
- ◆ As far as is practical, always remove batteries from any device in storage;
- ◆ Check existing stores in light of lessons learned here.

Members may wish to refer to

- ◆ [LTI: Severe burn from short circuited Li-Ion battery](#)
- ◆ [‘Routine’ task, non-routine result: Batteries stored sideways leak battery acid](#)
- ◆ [Near-miss: Fire axe falls out of cabinet, almost hits a fireman’s toes](#)
- ◆ [Near miss fire – epoxy overheating](#)
- ◆ [Three fires](#)



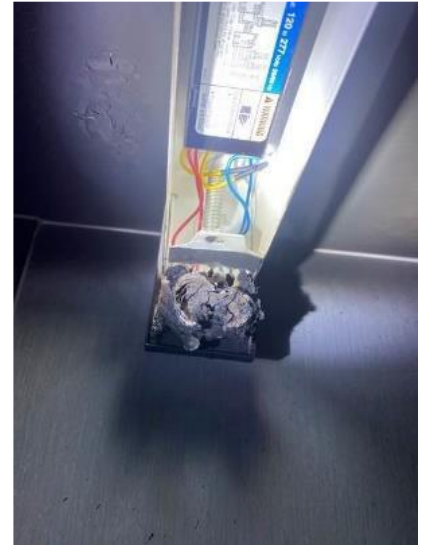
4 Cabin fire caused by light fitting overheating

What happened

A vessel experienced a minor fire in the bathroom of an unoccupied cabin due to a light fixture failing/shorting. A crew member who was resting in another cabin nearby, smelt something odd and investigated. When he got near the unoccupied cabin, he noticed a little smoke coming out of the door vent. He opened the door and noticed the smoke was coming from the cabin's bathroom door vent. He cracked the door and saw the toilet lid was burning. He left the cabin, grabbed the closest portable extinguisher, put the small fire out then immediately notified the Bridge.



Showing damage to wall in bathroom



Bathroom ceiling light fitting

What were the causes?

The fire started when the ceiling light fixture overheated due to an internal failure/short at the bulb connection point. Due to the overheating, the light's plastic cover melted and dripped onto the toilet lid, setting it on fire, which then scorched the wall.

Actions/lessons learned

- ◆ Have regular inspections of unoccupied cabins and other spaces; if possible and appropriate, electrically isolate such spaces. Ensure everything is powered off including lights. Consider locking all unoccupied rooms once they have been inspected and rendered safe from potential fire sources;
- ◆ Ensure that portable fire extinguishers and all other types of firefighting equipment are always kept in place in their designated stations in operable condition and ready for immediate and effective use;
- ◆ Inspect all cabin light fixtures by removing covers/shrouds to identify any noticeable signs of deterioration/corrosion, etc., or other issues of concern. Remedial actions should be left to the engineers; crew members should not attempt to remedy such concerns themselves;
- ◆ Finally, highlight the one thing that prevented this scenario from resulting in a much worse incident was the crew member who became uneasy when he smelled something odd and checked it out.
- ◆ **If you see signs of or an actual fire, raise the alarm! Never investigate further or tackle the fire unless it is safe to do so;**

Members may wish to refer to

- ◆ [Diver helmet hat light](#) [*strong smell of smoke was investigated*]
- ◆ [‘Routine’ task, non-routine result: Batteries stored sideways leak battery acid](#) [*Crew...noticed a smell, and investigated*]
- ◆ [Near-miss: burnt out electrical socket](#)

5 Two incidents with electrical installations with potential for a fire

A member reported two incidents involving failure of electrical equipment, leading to, or potentially leading to, fire hazards.

Incident 1: Earth fault and potential fire hazard

What happened

Whilst fault-finding an earth fault on the 240v mains system on a vessel, the engineers came across a pair of mains sockets installed above the galley fridge / freezer space. This space was not ventilated. These mains sockets were discovered to be heavily soiled by the fat residue that had drifted into this space from cooking in the galley.

Applicable
Life Saving
Rule:



Bypassing
Safety
Controls



Grate removed showing space above the unit



Fat residue on the top surface of the fridge freezer



Fat residue accumulation on the power sockets

What were the causes

The fat residue was the immediate cause of the earth fault. This was clearly a potential fire hazard caused by the fat dripping down into the mains sockets.

Causal factors identified were:

- ◆ Design flaws in the fitting of mains sockets in such a location;
- ◆ Ineffective extraction of fat fumes from the galley;
- ◆ Failure to clean the area around the mains sockets;
- ◆ Unclear / Inadequate instructions for galley maintenance.

Actions/lessons learned

- ◆ The entire area was cleaned comprehensively once the sockets were isolated and locked/tagged out;
- ◆ The sockets were inspected and replaced if necessary, and testing conducted;
- ◆ Checks to be made of difficult to access areas, high up areas and such in galleys to ensure nothing similar could occur elsewhere.

Members may wish to refer to

- ◆ [Galley electric shock – uncontrolled portable electrical equipment](#)
- ◆ [Near miss: burnt out electrical socket](#)
- ◆ [Near miss: potential fire – overheating of oil in deep frying pan](#)

Incident 2: Minor Electrical Fire in the Engine Room

A fire alarm was activated from within the machinery space, and on investigation, a minor fire was noted on the deckhead at the port side exhaust fan junction box. Given the limited size of the fire, it was tackled with a dry chemical powder extinguisher.

What were the causes

Heating was caused by a breakdown in continuity in a terminal block inside a plastic junction box mounted on the machinery space deck head. The cable possibly suffered breakdown at the termination, or the connection in the terminal block joining the supply to the consumer had weakened, leading to reduced continuity (increased resistance) and consequent heating of the wires.



Port Side exhaust fan ducting



Fire spread to cable conduit

Actions

- ◆ Check physical and electrical condition of connections for high load or continuously running equipment;
- ◆ All terminations to be checked as a matter of routine during forth planned maintenance.

Members may wish to refer to

- ◆ [Fire in engine space on crew transfer vessel \(CTV\)](#)
- ◆ [Fire in wheelhouse on offshore renewables crew transfer vessel](#)
- ◆ [Near-miss: burnt out electrical socket](#)

For more information, please contact @imca-int.com