

Fire prevention on board ships

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Any outbreak of fire on board a ship poses a significant risk to the safety of the vessel and to anyone on board. Unlike a land-based fire, a ship's crew are not able to walk away from a fire at sea and rely upon the local Fire Department to extinguish it. With limited resources, crews may be expected to deal with fire incidents that would test even the most experienced of fire-fighters. Therefore, the safety of the vessel and its crew is dependent upon adequate fire prevention measures to avoid the occurrence of such incidents in the first place.

Often overlooked fire safety concerns on board a ship are those related to accommodation areas. A number of recent fire related claims have been attributed to electrical failures within the crew's cabins.

Electrical failures within crew cabins

The ever-increasing number of electrical appliances used during everyday life means that the number of potential ignition sources within the accommodation area of a ship may have greatly increased since it was first built. As a result, the use of multi-gang extension leads is commonplace. These are often used to compensate for the fact that there are not sufficient socket outlets available within cabins. Extension leads can be easily overloaded if multiple appliances are plugged into them. Depending on the type of electrical load, circuit protection may not always operate in time to prevent a fire occurring. Resistance heating is also a common cause of fires due to poor connections. As current flows through a bad connection, heat builds up which can eventually lead to the start of a fire.

The introduction of cheap, poor quality electrical devices onto a vessel can pose a serious fire risk. With electrical apparatus, it really is a case of '*you get what you pay for*'. Failures of batteries, especially when being charged, are a frequently encountered ignition source. Fires involving [Lithium batteries](#) have recently been well documented.

Preventing electrical failures

A few simple measures can go a long way in preventing fires of this nature, such as:

- Restricting the use of multi-gang extension leads.
- Restricting the use of high current devices (this can be anything that generates heat, e.g. fans heaters or kettles).

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- Considering annual testing of electrical appliances within accommodation areas.
 - Carrying out regular inspections (by a suitably qualified person) of electrical apparatus to ensure it is in good serviceable condition.
 - Immediately removing defective equipment from use/service, when damage is identified.

Engine room fires and preventions

Another area where fires commonly occur on a vessel is within the engine room. Over 50% of fires within the engine room are caused by fuel/lubricating oil leakage onto hot surfaces.

Oil leaks are often due to the failure of pipes and/or associated fittings. These failures can be attributed to a variety of causes including:

- Mechanical fatigue.
- Vibration and pulsations.
- Chafing/fretting.
- Improper securing.
- Damage during maintenance operations.
- Improper repairs.
- Incorrect tightening procedures.
- Poor quality materials.

The International Convention for the Safety of Life at Sea (SOLAS) recommends implementing a comprehensive maintenance regime, by way of a planned maintenance system, which helps to prevent the type of failures that can lead to fuel or oil leaks. In addition, by implementing these standards the likelihood of ignition of oil leaks by hot surfaces can also be reduced. SOLAS (Chapter II-2) requires that any hot surface with a temperature above 220°C must be insulated. This insulation helps prevent the oil coming into contact with the hot surface at the time that initial leakage occurs, therefore eliminating it as an immediate ignition source and providing the crew on board with time to rectify the leak.

In the event of any fire occurring, no matter how small, a detailed investigation should be carried out by a competent person to establish the underlying cause. By identifying how a fire has started suitable preventative measures can be implemented to reduce the likelihood of such an incident re-occurring.

We hope the information in this article is of benefit to Member's in developing the measures needed to further prevent a fire occurring on board. These measures should support the pre-existing implementation of risk assessments and permit to work systems, with reference to hot work and the ongoing practise of good housekeeping. For further assistance please contact our [Loss Prevention team](#).