

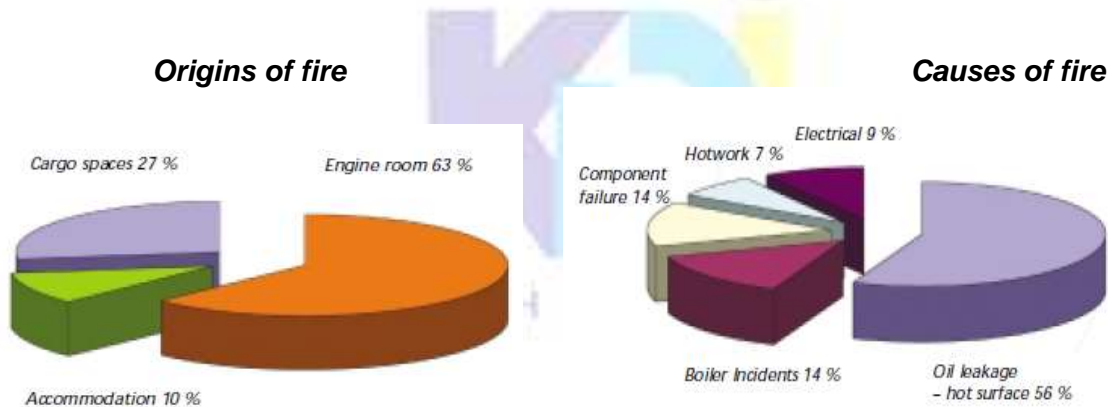
**KISH P & I LOSS PREVENTION CIRCULAR KPI-LP-87-2012**  
***(Engine Room Fires are the main cause of most fires on board)***

According to a study by a reputable organization; nearly "2/3 of all fires start in the engine room ... most of them can be avoided"

The direct cost of an engine room fire can be in the range of 1–4 million USD for a cargo vessel – and much more for a passenger vessel. Off-hire and loss of goodwill adds to this figure and is perhaps the most difficult asset to replace.

Engine room fires also represent a hazard for crew members working in that area and fire fighters. There is also a risk of the fire spreading to other areas of the vessel. Recent incidents such as “Romantica” in the Mediterranean, where the fire damaged the entire passenger vessel, and the sinking of the cruise liner “Sun Vista” off Malaysia, have demonstrated that engine room fires could threaten the safety of the entire vessel.

**According to DNV statistics, a ship-owner operating 20 vessels can expect one major engine room fire every 10 years. Ship management should therefore include a clear policy of how to avoid such incidents.**



Oil leakage hitting hot spots on engines is the most common cause of engine room fires on board ships.

According to casualty statistics, more than 60% of all engine room fires have been initiated by a hot spot.

There is also an impression that fires caused by oil leakage/hot spots are in general more serious than fires caused by other factors.

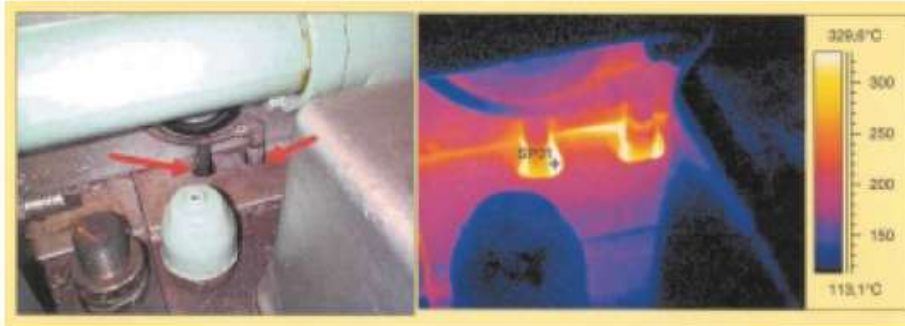
Most lubrication, hydraulic and fuel oils have an auto ignition point above 250°C. If a liquid hits a surface hotter than its auto ignition temperature, the liquid may ignite spontaneously.

Any such hot spot represents an immediate hazard in the case of oil leakage.

The leakages can have many origins; most of which are attributable to lack of proper maintenance. The joints or fittings might not be properly tightened; the flexible hoses may have been damaged or worn; the quality of the piping & connections may not match the desired pressure and or other working conditions & so on.

► **Hot Surfaces:**

Most fuel oils may spontaneously ignite if they hit surfaces with temperatures above 250°C. Class rules require that all surfaces above 220°C are to be shielded or insulated. As commonly noted by inspectors and surveyors, such protection is often impaired under operation. Several methods can be used to detect hot surfaces.



*The picture shows cylinder hoods and engine body (only 100°C) and cut out for sensors (more than 300°C).*

► **Leakages:**

Sources of fuel leakage appear to be randomly distributed between flexible hoses, couplings, clogged filters and fractured pipes. Attention should be paid to installation, location and condition of all these components. It is recommended that oil systems within engine room on ships in operation are inspected periodically also by owner, as an addition to class inspections.



*Flexible hoses should only be installed where necessary to absorb vibrations. Bends on oil hoses, sharper than that shown on this picture, should be avoided.*

