Stop Loss

The London P&I Club

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Coal cargoes – expert guidance

Common problems associated with the transportation of coal in bulk include self-heating and flammable gas (i.e. methane) release. Self-heating can lead to fires and the production of carbon monoxide (CO), whilst methane release can lead to an explosive atmosphere being generated in the hold.

Self-heating

Self-heating normally occurs in localised hot spots within a bulk cargo, and temperature measurements are unlikely to identify problems. However, when coal self-heats it produces CO, so measuring the concentration of CO is the most effective method to identify a self-heating cargo. The atmosphere in each cargo hold should be monitored, at least on a daily basis, for CO, hydrogen sulphide (H_2S), oxygen (O_2) and flammable gas (LEL-methane). If the holds are being ventilated, then ventilation should be stopped at least four hours prior to gas measurements being taken.

When to ventilate

The International Maritime Solid Bulk Cargoes (IMSBC) Code requires that the holds are ventilated for 24 hours after loading. However, unless expressly instructed to the contrary, coal cargoes should not be ventilated following this 24-hour period as unnecessary ventilation could promote the coal to begin to self-heat. Once a self-heating reaction has started, further ventilation will provide oxygen which will exacerbate the self-heating and could lead to ignition of the cargo.

Only if the LEL levels begin to rise should ventilation be considered, and only for the minimum period necessary to remove any accumulated methane. As detailed in the IMSBC Code, if LEL levels reach 20% or more, then the ventilation should be maintained continuously (except for the purpose of gas monitoring). If the LEL-methane continues to rise after ventilation has been carried out continuously for a period of 24 hours, or if CO levels begin to rise, then the advice of an expert should be sought as a matter of urgency.

If there is a fire or high levels of CO, the ship should:

- Close hatches and all ventilation to the holds
- Ensure all spaces adjacent to the holds are checked prior to entry and that no-one enters confined spaces without confirming that it is safe to do so by checking the atmosphere inside
- Consider boundary cooling of the affected holds and locate the nearest ports of refuge
- Notify Owners and the P&I Club without delay
- Provide Owners and the P&I Club with all temperature and gas monitoring records for the voyage

continued on p2 ↓

ECDIS implementation
p/3

Ship inspection Programme
p/4

Accident investigation world round-up
p/5

Coal loading

Coal barge

Coal hold

The IMSBC Code provides mandatory requirements for the loading and carriage of coal. Of particular note are the following:

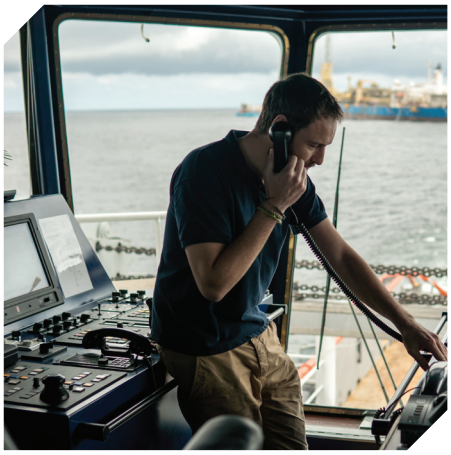
1. The cargo declaration should state whether the cargo has a history of self-heating and whether it has a tendency to emit methane (for Indonesian coals, self-heating is almost always encountered).

2. Coal should not be loaded if its temperature exceeds 55˚C; this is especially important for self-heating coal as temperature above 55˚C is indicative that the coal is already at an advanced stage of self-heating. Although not required by the IMSBC Code, an infrared thermometer can greatly assist the crew in checking the surface temperature of the cargo prior to and during loading.

Despite the risks associated with the transportation of coal cargoes, the majority of ships carry coal without incident. Adhering to the requirements and recommendations in the IMSBC Code greatly reduces the risk of fire. Hawkins have many years of experience in assisting Owners and P&I Clubs to prevent an incident from becoming a major casualty. If the Master only allows cargo below 55˚C to be loaded, and regularly checks it during passage, then problems can be identified at an early stage and prevented from escalating.

Paul Willis
Senior Associate

Hawkins
Leaders in forensic investigation



ECDIS implementation

The London P&I Club recently joined forces with London Offshore Consultants (LOC) to produce an *LP Focus* pdf publication entitled *"Is your ECDIS contributing to safe navigation or introducing risk?"* A copy can be viewed or downloaded by clicking **here**.

The driving force behind the publication was the amount of negative findings recorded during ship inspections in connection with ECDIS. The Club introduced an ECDIS section as an addendum to the Safety of Navigation Section in early 2017, and has noted the increasing number of negative findings that are attributable to how the introduction of ECDIS on ships has been managed.

It has become evident that a strong management of change policy at the heart of a Safety Management System (SMS) reduces the likelihood of such issues arising. The more common findings are:

1. No ECDIS content in the watch handover checklist
2. Bridge watch keeping officers demonstrate a lack of familiarity with manual position fixing method employed by the unit in question
3. Lack of GPS positon cross-checking
4. Lack of understanding of the safe application of deep contour, safety depth, shallow contour and safety contour
5. SMS has not been revised to include ECDIS

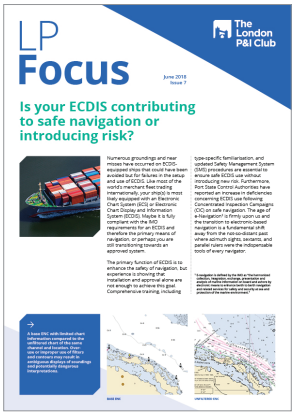
The introduction of ECDIS can easily be assumed to be a simple introduction of beneficial technology. Indeed, it is a powerful navigational tool which when well managed and in the hands of well trained and motivated users can bring various enhancements to navigation safety.

However, managers should ensure that the users of such systems, while potentially experienced navigators, will need to be able to apply vital navigation skills such as manual positon fixing and parallel indexing in the ECDIS environment.

While the skills of an experienced navigator can be presumed, familiarity with the electronic method of applying the ECDIS equivalent cannot. The importance of type-specific quality training cannot be overstated in ensuring that the incumbent staff can perform their fundamental navigational tasks.

Also, the 'at a glance' constantly updated nature of a GPS position, making progress along a planned course line in ECDIS (while a useful feature) can encourage the watch keeping officer to neglect to cross reference the satellite derived positon with visual and radar fixes.

A well-structured SMS policy and a good quality type-specific training programme are encouraged to avoid navigational safety shortcomings caused by the introduction of technology which ought to enhance safety.



LP Focus
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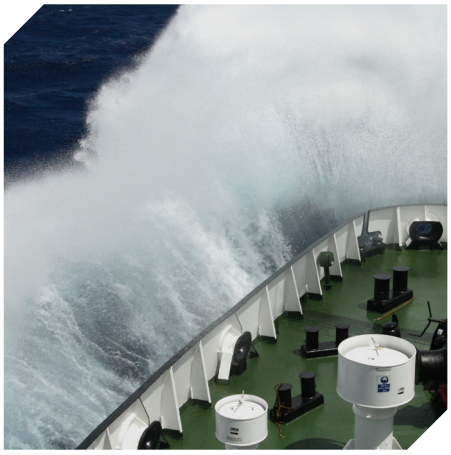
SHIP INSPECTION PROGRAMME



Captain's rounds

The Club's Ship Inspection Programme is aimed at the assessment of third party liability risks on entered ships on both the mutual and fixed premium products.

Many findings identified during a ship inspection are easily detectable by the ship's officers and crew. It is relatively rare that findings are latent.

With increased commercial pressure upon the Master of a ship, some simple and potentially 'old-school' habits often fall by the wayside. For instance, we consider that one of the most useful tools for maintaining a quality operation and safe working environment is the weekly Captain's rounds.

In considering this, first revisit the true prerequisites for the position of Ship's Master – experience and superior certification. The Master is the overseeing eye, carrying enhanced responsibility for all shipboard activities coupled with the role of motivating as the ship's focal point.

Not all ships' operational programmes allow for regular 'Sunday Routines' – but when an opportunity exists, an hour spent touring the ship with the Chief Officer can allow the Master to detect housekeeping issues as they develop.

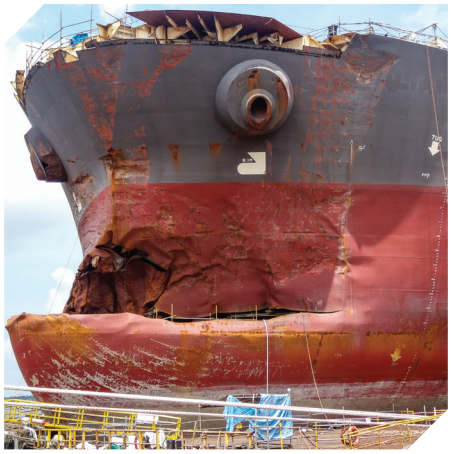
The experienced eye of the Master can not only detect these issues early, but also assist the Chief Officer in populating the weekly job list.

Examples of issues that may slip past the daily team, but be spotted by the Master could include:

- An untidy paint locker with opened and part-used tins of paint lying around presenting a fire risk
- Mooring ropes left uncovered on the mooring drums, open to degradation in sunlight
- The firefighting SCBA locker also being used as a convenient place for crew to store personal daily effects due to it being next to the main deck access to the accommodation
- The untidy mess the bosun's store has been left in
- A broken hinge on the emergency towing equipment locker on the quarter deck
- Slight oil leak on the port windlass
- A perished rubber gasket on the engine room escape hatch

ACCIDENT INVESTIGATION WORLD ROUND-UP

In this regular column, we round up some of the eye-catching accident investigation reports from around the globe:



The London P&I Club

Glasgow Express/Mako ATSB – Australia

On 12 August 2017, the fishing boat *Mako* departed San Remo, Victoria, bound for fishing grounds about three hours away. At the same time, the container ship *Glasgow Express* was passing Cape Liptrap heading north-west. The ship was bound for Melbourne, Victoria, and was maintaining a steady course (299°) and speed. From about 2030 the vessels were on a collision course.

No avoiding action was taken by either vessel and, at about 2246, they collided.

The ATSB found that a proper lookout by 'all available means' was not being maintained on either vessel. The ATSB continues to see collisions between trading ships and small vessels. A common contributing factor has been the failure to use all available means to accurately appraise a situation and the risk of collision.

Click **here** to view report

Islay Trader MAIB – United Kingdom

During the morning of 8 October 2017, the general cargo ship *Islay Trader* began dragging its anchor. The ship's officer of the watch (OOW) attempted to reposition the ship without the assistance of the master. The OOW subsequently became overwhelmed, uncertain of the ship's position and at 0242 it grounded near Margate beach.

Safety lessons:

- the ship dragged its anchor because the length of anchor cable used was insufficient in the tidal conditions experienced
- the chief officer did not monitor the ship's position and was not aware that it had dragged its anchor until alerted by the London Vessel Traffic Service
- the master was not told that the ship had dragged its anchor, and when the chief officer was attempting to reposition the vessel, he became overwhelmed by the situation and uncertain of the vessel's position
- the navigational practices onboard *Islay Trader* were adversely impacted by the pressures resulting from having only two bridge watchkeepers

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Dredger *FRPD 309* TSBC – Canada

The dredger *FRPD 309*, departed a shipyard in Delta, BC, to begin dredging in the Fraser River. During the operation as it was turning and the pipe operator was raising the trailing arms to the deck level, the dredger experienced a blackout. Once power returned, the bridge team was able to quickly reset the electronic equipment that had tripped as a result of the blackout. Approximately two minutes after the blackout, the OOW resumed the turn to port and the vessel continued towards the discharge pipeline location. However, at this time, the two engineers in the engine room were still resetting numerous alarms and both essential and non-essential circuit breakers that had tripped, and they did not have enough time to restore the vessel to normal status before it resumed the voyage.

As the dredger was proceeding to the discharge pipeline location at a speed of approximately 7.2 knots, propulsion was lost; the main engine clutches had automatically become disengaged after the control air pressure fell below 5 bar. The vessel subsequently collided with a tug and barge.

The report's safety messages include a focus on procedures for recovery from a blackout.

Click **here** to view report

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