



The London P&I Club

# STOP Loss

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## Cyber Risk

A new area of vulnerability for the maritime industry

The risk of cyber-attack is potentially the biggest threat to both Shipowners and their ships as the use of information technology spreads into all areas of the business. A Ponemon Institute Research Report in 2015<sup>1</sup> found that cyber losses increased by 14% over the year and against 39 benchmarked organisations calculated that the mean annualised cost for such organisations was £4.1m per year (ranging from £628,423 to £16m).

### Financial and data risk

For shipping companies, this type of loss is currently faced by the “back office” part of the business – accounting, payments and banking. Financial data, crew information, and counterparty confidential material are all vulnerable to hacking, and there is increasing regulation in this area – principally by the EU which will require companies to take precautions and

report loss of data. Good cyber hygiene, up-to-date firewalls, penetration testing and staff training are routinely deployed to counter this threat.

Even then, risk will continue to be presented by third parties, such as port agents, whose computer systems may be vulnerable to attack and whose staff receive little training. Several recent cases have shown how easily

such systems can be hacked resulting in the use of spoof emails to divert payments to a fraudster’s account. Basic precautions, such as making telephone calls to verify payment instructions go a long way towards preventing frauds of this nature.

### Physical risk

Where the risk is less well understood is the physical risk to the ships themselves. We have found that this is particularly the case for traditional ship owning companies and their fleets. Although it might be said that the risk is currently low, cyber-attacks potentially pose a serious risk to the overall operability of a ship because of the increasing use of IT onboard, even where there is no single network controlling numerous systems and where internet connectivity is low. Examples of such technologies in common use are the Automated Identification System (AIS), Electronic Chart Display & Information System (ECDIS), Global Navigation Satellite System (GNSS) and E-Navigation Systems (E-Nav). Main and auxiliary propulsion systems rely increasingly on computers to operate efficiently.

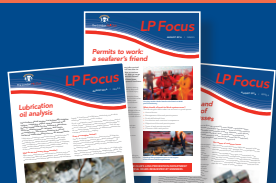
Although cyber-attacks can occur deliberately, it seems that currently the risk is principally from inadvertent introduction of viruses and the like into key systems. For example, a crewman charging a mobile phone from a USB port in the ECDIS system



<sup>1</sup> Click here to view report

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caused a virus to render the system entirely inoperable. An expensive mistake. The ship's maintenance and propulsion systems are exposed to the same hacking/malware risks and the consequences of cyber-attacks might be potentially severe if key systems are lost at crucial times. All successful attacks incur significant expenditure to fix.

The number of cyber-attacks that have caused physical damage are still, thankfully, rare. There are a number of reasons for this but currently it seems to be the general invisibility of shipping to the general (hacking) public and the number of far easier targets for cyber criminals. But we have heard instances of pirates manipulating GPS data to lure ships off course; pirates hacking ship management systems to identify which ships are sailing without armed guards; and the hacking, by drug runners, of a terminal's container management system so they could monitor and control the movement of containers in which drugs were hidden to avoid detection.

As the "internet of things" is adopted by shipping such that ship's systems are centrally controlled, connectivity with the shore is continuous and maintenance and diagnostics

increasingly done via USB ports in equipment, the risk will only increase. The rise in the amount of cyber-crime is, on any view, shocking and shipping will be targeted as other sectors improve their security. It is time therefore for shipping to consider these issues proactively.

### The way forward

As with any operational issue, it is a matter of applying tried and trusted risk assessment methodology. Consider the risks, weigh the consequences and put proportionate steps in place to reduce that risk. The difference from the usual types of marine risk is that IT and cyber are outside most marine professionals' experience and so help has to be sought from experienced IT consultants. Training will be key as it is the ship's crew inadvertently introducing a virus into equipment or clicking on a bad link that is currently the highest risk. But if risk assessment is thorough, crew are trained and vigilant, and thought has been given to how to respond to an attack, then ships and shipping companies will be better protected when the cyber-criminals turn their attention to your company.

**Philip Roche**

Partner, Norton Rose Fulbright LLP



## LP Focus

Members will recall from *StopLoss 66* that the Club has introduced a series of Loss Prevention safety updates titled *LP Focus*. These examine various areas of operations where good practice could minimise potential exposure to accidents and claims.

This extension to the range of guidance has been produced in conjunction with TMC Marine Consultants who are a leading firm of international marine consultants. The next three issues of *LP Focus* cover the following subject areas:

- Issue 4: Lubrication oil analysis
- Issue 5: Permits to work
- Issue 6: Causes and prevention of container losses

Container losses continue to feature in the Loss Prevention discussion forums of both the Club and the International Group. It is hoped that the notes will assist Members in their day-to-day operations.

Lubrication oil analysis is a vital engine room routine and the engine room is an area of the ship's operations which deserves greater emphasis and can be easily overlooked. It is the Club's aim to continue to address key engine room operations from a Loss Prevention perspective.

The final set of notes in the second series analyses the permit to work system and considers its proper administration and scope.

*LP Focus* documents are in PDF format and can be downloaded from the Club's website at: <https://www.londonpandi.com/loss-prevention/lp-focus/>



## Mooring stations



**The Club continues to note the regularity with which Club-appointed inspectors record negative findings in and around the ship's mooring station.**

The most common findings are:

1. Lack of anti-skid deck paint in key areas
2. Lack of hazard marking of protruding objects and platforms
3. Low awareness of the dangers of snap-back zones

With respect to anti-skid coatings, the Club would recommend that ship's officers conduct a risk assessment of their mooring stations to establish the best location for such areas. The Club also recommends the use of the prescribed additive to the deck paint, which can usually be found in the ship's Coating Technical File. Good surface preparation is key to a long life as it is a widely-held belief that 70% of premature coating breakdown on ships is attributable to poor surface preparation.

Hazard markings make trip hazards more visible, and officers should also not overlook dangers at head height when conducting a risk assessment of a mooring station.

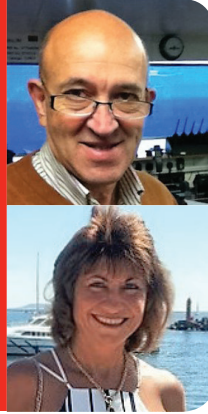
Poor awareness of snap-back zones continues to feature as a regular negative finding on Club inspections. Inspectors appointed by the Club are required to determine the awareness of ship's crews who are involved in mooring operations as a part of the inspection questionnaire. The intention is for the inspectors to speak directly to ship's crews when making their assessment.

The Club is always pleased to note occasions where the best practices section of the form records that ship's crews are engaged in 'toolbox' meetings prior to operations, crew are encouraged to consider each individual mooring operation, and specifically the planned mooring arrangement, in good time.

Also, the latest (2015) edition of the Code of Safe Working Practices for Merchant Seaman makes clear reference to a particular industry-wide confusion over the area of snap-back zones being marked on the deck. The 2015 edition states: "26.3.3 – The painting of snap-back zones on mooring decks should be avoided because they may give a false sense of security."



Captain Guy Webster



# Club Inspector

Josefina Jofre

**Nortica Marine was founded in 2004 as a totally independent and British-owned marine services consultancy by Master Mariner, Captain Guy Webster, and legal professional Josefina Jofre in Montevideo Uruguay.**

Providing marine and legal consultancy services to P&I Clubs, underwriters, lawyers and Shipowners in the South American region, support was provided for marine casualty claims along with ship survey and inspection services, particularly for the London P&I Club.

In 2014, operations were transferred to Marseillan in France and Stockholm, Sweden.

Captain Guy Webster, who started his career at sea in the mid-1970s, is an accredited offshore ship, OVID and CMID inspector and full member of the International Institute of Marine Surveying (IIMS).

His seagoing career spanned all ranks from Deck cadet to Master aboard various ship types including; LPG, petroleum and chemical tankers, container ships, bulk carriers, general cargo and passenger ships.

Further experience was gained as pilot and acting harbour master in the UAE. He was responsible, as ISM manger for a UK ship management company, in obtaining one of the first DOCs issued for a ferry operation in 1996. He worked as a staff surveyor for consultancies Noble Denton and Global Maritime then law firm Ince and Co in

London. He then joined London Offshore Consultants as Vice President of their Houston Office until 2004 prior to founding Nortica Marine.

Experience of surveying self-elevating jack up units resulted in being asked to review and provide input to the OVID inspection format developed for jack-up rigs by OCIMF in 2015.

Captain Webster maintains: "There is no substitute for experience when carrying out a survey. Common sense, good seamanship and reasonableness are equally as important as a detailed knowledge of international rules and regulations."

Josefina Jofre, with a legal background and 35 years of experience in managing client relationships, explains: "In the past 12 years, Nortica Marine has been successful thanks to its attention to key client benefits – rapid response times, excellent value-for-money services and flexible, yet global coverage – as well as recognising the importance of high professional standards, integrity and excellent communications. Furthermore, the ability to survey and produce reports in Spanish, Portuguese, French and Swedish forms an important part of the services we can offer. Our services are totally independent and we are not linked to any agencies, brokers or classification societies. Our aim is to develop long term positive working relationships with our clients."

## ACCIDENT INVESTIGATION WORLD ROUND-UP

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

### Hamburg MAIB – United Kingdom

*Hamburg* grounded on the charted New Rocks shoal because the bridge team did not recognise that their ship was approaching the New Rocks buoy from an unsafe direction. Contributing to this lack of awareness were significant shortcomings in the conduct of navigation onboard *Hamburg*, which were compounded by a lack of teamwork between the officers on the bridge. While the master was evidently under a degree of stress following the grounding, appropriate post-grounding actions were not taken.

[Click here to view report](#)

### Oslo Wave SAIA – Sweden

A ship's cargo crane collapsed into a cargo hold during cargo operations as a result of the limit switch being bypassed, allowing the boom to operate at a low angle; where insufficient cable remained on the drum to carry the combined weight of the crane boom and load.

[Click here to view report](#)

### WES Janine and Stenborg BSU – Germany

The report considers the collision of two anchored ships at Brunsbuttel and concludes that distraction, and therefore the manner in which the watch was performed on both ships, was the principal cause of the collision.

[Click here to view report](#)

### BW Havfrost AIBN – Norway

During inspection of cargo tanks in dry dock, a manhole was found open and the cover had fallen down onto the tank top and required recovery. During this work, one crew member fell down the manhole onto the tank top and tragically lost his life. The AIBN found that the lighting conditions, combined with the failure to cordon off or place guardrails around the maintenance hatch, were factors that contributed to the ordinary seaman's fall.

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