

November 2014

## To all Members

### Damage to fixed and floating objects (FFO)

Incidents involving damage to FFO can be very expensive, both in terms of the cost of claims on the Club as well as the potential for damage to a shipowner's reputation. By way of illustration, during the 2012 policy year, the Club dealt with nine FFO incidents each of which involved a claim in excess of US\$ 1 million with the total amount claimed exceeding US\$ 40 million. In the 2013 policy year the Club was notified of five similar incidents, with a total value of US\$ 24 million. In addition to these larger claims, the Club has, on average, handled 275 FFO incidents per year during the 2007 – 2013 policy years.

To identify the underlying root causes and to be able to make recommendations to help prevent these incidents, Britannia's Loss Prevention Team has analysed the larger FFO claims, which involve damage to one or a combination of the following types of property:

- Piers, breakwaters, fenders, dolphins and other mooring facilities
- Cranes, conveyors, loading and unloading equipment and piping arrangement
- Marine culture farms and offshore installations
- Navigation marks
- Sub-sea installations



The underlying causes identified for the majority of these incidents are a failure to properly plan the passage and/or a break down of bridge team management. The incidents occur during three distinct stages and contributory factors include pilot error, poor ship handling and a failure to properly plan and risk assess berthing manoeuvres leading to the poor use of tugs. These stages and the relevant findings are discussed below.

## Incidents occurring whilst underway or anchoring

### Pilot error

Manoeuvring, under pilotage, in confined and often congested waters is a high risk activity resulting in a significant number of FFO incidents. The analysis found that appropriate bridge procedures, underpinned by good master/pilot communications and a high level of situational awareness would have prevented the majority of these incidents.

Masters need to be aware of the pilot's function whilst on board; an advisor with local knowledge. It is the master who remains responsible for the ship at all times (the only one exception being when transiting the Panama Canal) and the shipowner will be liable for the consequences of damaging property, even where caused by the negligence or fault of the pilot. Most incidents can be avoided by ensuring that the ship's safety management system (SMS) contains procedures to ensure the following:

- The master/pilot relationship and information exchange is well defined in terms of navigation procedures and responsibilities, and complimented with an approved pilot card and checklist.
- The pilot is supported, monitored and if necessary challenged by the bridge team. Procedures must be in place in case the pilot proves to be incompetent or becomes incapacitated for any reason.
- The master's authority is clearly defined by shore management to ensure he has the confidence to question orders given by the pilot.



### Passage planning

A lack of passage planning was found to have caused many of the incidents occurring when ships are anchored in unsuitable locations, including damage to subsea installations. Failure to properly plan resulted in ships proceeding through fishing grounds and marine culture farms. Passage Planning should be based upon the following principles:

- Plans are comprehensive and berth to berth.
- Plans should be double checked and analysed by more than one person.
- When operating in unfamiliar areas the knowledge and experience of the entire bridge team should be welcomed.
- All notes on charts should be cross checked against the relevant pilot books.
- Monitoring of a passage plan should be dynamic. All officers of the watch should be encouraged to monitor receipt of local notices to mariners through the global maritime distress and safety system; scrutinise the notices; apply them to the relevant charts and ensure that any new information is properly highlighted and handed over at the change of watch.
- The use of on board internet facilities should be encouraged in order to check notices to mariners issued by the harbour authority and less reliance should be placed on other sources for notices such as local ship traffic services.

### Incidents occurring whilst berthing or unberthing

Berthing and unberthing are high risk phases of any port call, due to the close proximity of hazards, the lack of room to manoeuvre and environmental concerns. Appropriate speed is paramount in any safe manoeuvre and this should form the principal consideration for risk assessments and plans for berthing.



### Ship handling

The majority of the incidents analysed were in part brought about by poor ship handling by the master caused by a lack of experience, poor judgment and lack of bridge team communication. Training and effective bridge team management are key to ensuring manoeuvres are conducted without incident. The ship's SMS should ensure the following:

- Masters must ensure they are fully immersed in the manoeuvring of the ship, particularly during the critical stages of anchoring and approaching or departing a berth, in order to be able to correct any pilot error or misjudgment before damage occurs.
- Persons due for promotion - or new - to command should be adequately trained in order to be able to cope with each particular ship's manoeuvring characteristics. Before assuming command, a mandatory handover period should be enforced to ensure confidence is gained in this critical area.

- Bridge resource management techniques should be used to foster an environment where manoeuvres are monitored and unilateral decisions cannot result in a dangerous situation developing unnoticed. Procedures should encourage masters to accept the support of their bridge team.
- Pre - manoeuvring briefings should be conducted so that bridge manning is appropriate and plans are agreed in advance. These can be by an informal discussion with all persons involved in the manoeuvre before entering confined waters. Or the briefings can be conducted more formally as a full navigation brief attended by all navigation officers and conducted in open sea before the arrival in the coastal waters of the destination.



### Use of tugs

The analysis found that there was a lack of robust risk assessment and planning prior to berthing and unberthing manoeuvres being carried out. Specific areas of concern identified were:

- An inadequate assessment of the prevailing conditions, such as wind and tide.
- A failure to provide for the possibility of mechanical failure.
- A reluctance to engage a tug despite clear evidence that a tug was required due to constraints such as the depth of water and lack of manoeuvring space.
- The risk assessment not including consideration of the available depth of water and thus 'shallow water effect' and 'extra power requirements'.



The ship's navigation procedures within the SMS should provide for masters to request tug assistance whenever required and the ship owners should encourage this by emphasising the value of tug assistance. The cost of extra tug assistance will always be minimal compared to the consequences of an incident in terms of down time and the liability for damage to property.

## Incidents occurring whilst alongside

### Moorings

The Incidents analysed involved FFO damage caused by ships ranging or coming adrift due to the inadequate strength or layout of moorings. The ship's SMS procedures should require regular mooring inspections to be conducted to ensure their effectiveness and adequacy in changing states of tide or weather.

If moorings are under too much strain due to weather or tidal conditions then immediate action should be taken to rectify the problem. This should include consideration of requesting tug assistance, putting the ship's machinery to stand-by, suspending cargo operations and, if appropriate, putting to sea in order to prevent damage to the ship or berth.

### Cargo operations

A number of the incidents analysed have highlighted the need for improved monitoring of shore gangs using the ship's equipment in the vicinity of shore installations.

## Summary of recommendations

### Training

Current training arrangements for berth to berth passage planning and "pilot on board" bridge team management should be reviewed to ensure that these remain focused on preparation to react appropriately in all situations. The bridge team must be trained in order to be able to judge when there has been a departure from the agreed passage plan, particularly during berthing and unberthing operations, and to take effective action to correct any pilot negligence or errors.

Bridge resource management training courses must be useful and the quality of the training should be closely monitored. The use of simulators can be a valuable tool for encouraging open and consequence free learning if properly utilised.

In addition to shore based courses, senior officers should be mentored in ship handling before taking command. Handover periods or the provision of additional qualified officers on board to allow for ship handling training to take place are of great benefit.

Masters and navigating officers should be informed of the legal consequences of FFO damage and the lack of any defence based upon pilot error should be emphasised.

### Audits

Frequent navigation audits should be conducted by company superintendents and by external third party experts in order to ensure compliance with the ship's SMS. These must be comprehensive covering "pilot on board" and reviewing passage planning "berth to berth".

### Risk assessments

Risk assessments should be completed for each "berth to berth" passage plan together with "pilot on board". These should be discussed during the bridge team management meetings and reviewed by visiting superintendents to consider safety performance and training requirements.

Dynamic risk assessments should be conducted by way of a positive discussion between the master and pilot during the information exchange prior to the commencement of the pilotage phase of the voyage.

### Accidents/incidents reviews

Reports of near misses and actual incidents should be submitted to the designated person ashore (DPA). These should be reviewed, analysed and the lessons learned distributed to the fleet.

### Conclusion

FFO incidents account for a significant proportion of claims on the Club. The analysis that has taken place demonstrates that there are definite root causes to explain these incidents, many of which are preventable.

Comprehensive and fit for purpose bridge team management procedures coupled with a quality training regime will ensure that proper passage planning is carried out and that bridge teams will have the knowledge, confidence and ability to intervene when necessary, so that incidents of this kind are prevented.