

The background image shows the interior of a ship's engine room. It is filled with large, green-painted industrial machinery, including a prominent vertical engine component in the foreground. Yellow safety railings run across the scene, and a metal staircase is visible in the middle ground. The lighting is a mix of green and yellow, creating a technical and industrial atmosphere.

**UKP&I**

**RISK AWARENESS**

# **CARGO CLAIMS: SHIP'S EQUIPMENT**

*An aid to risk identification and loss reduction*

UK P&I CLUB  
IS MANAGED  
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# DEFINITIONS

In this checklist, colour is used to denote the various elements in the risk awareness process

## Threat

Something that if not controlled could cause a P&I incident

## Consequence

The monetary cost to the Club/Member

## Control

Something which reduces the possibility of a 'Threat' causing an incident

Something that should be in place after the incident to help reduce the cost of the claim

**How effective do you think the Controls are on your ship – are there any accidents just waiting to happen?**

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# USING THIS CHECKLIST / SCORING

This booklet is a guide to the Controls and key points that the UK Club's Risk Assessors look for when inspecting a vessel.

It will allow you to carry out a similar check on the Threats and Controls and make sure the vessel has a good risk profile.

Each booklet in the *Risk Awareness* series deals with an area of Risk – Personal injury, collision, pollution, etc – and these are sub-divided into Threats and then Controls.

Each Threat is followed by a 'score' section where the individual Controls can be graded according to how effective they are:

- 1 Very good control
- 2 Good control
- 3 Average control
- 4 Poor control
- 5 Very poor control (maybe non-existent)

Furthermore, there is space to make comments on certain Controls; to note ways in which deficient ones could be improved.

At the back, there is a section on Consequences, which is also divided into Controls that should be in place to mitigate the cost of any claim, i.e. after the event controls. These too can be graded.

# Ship's equipment

## **THREAT: WEAR AND TEAR, LACK OF MAINTENANCE, CATASTROPHIC FAILURE**

### **CONTROLS:**

#### **Effective PMS in place**

- Is it Class approved/audited – aligned with continuous machinery survey system?
- Is Chief Engineer authorised by Class to carry out surveys?
- If Class approved is certificate (Class) of operation valid?
- Is it paper/computer based – eg Amos?  
Does it cover all equipment:
  - Deck?
  - Engine?
  - LSA/FFE?Does it cover:
  - Maintenance schedules/planning charts?
  - Class survey dates and items dealt with?
  - Details of jobs done, dates and references?
  - Details of overdue items?
  - Why overdue?
  - When they are to be done?
  - Reasons why they can't be done, if any (lack of spares/time)?
  - History of components, breakdowns/defects?
  - Manufacturers' service instructions and job instructions?
  - Are manufacturers' service/safety letters/bulletins prominently displayed and has advice been followed?
  - Condition monitoring procedures?
  - Spare part information?
  - Details of unscheduled maintenance?
- Does it cover conditional maintenance as well as preventative and corrective maintenance?
- Are there comprehensive and clear instructions for use available?

#### **Ensure ship's ISM procedures clearly state what is required of PMS**

- Check relevant section of ship's ISM procedures

- What is the emphasis?
- What safeguards are in place to ensure vessel complies with PMS requirements?
- How often is the office supposed to be notified of status of PMS?
- Does it cover conditional maintenance as well as preventative and corrective maintenance?

## **Regular condition monitoring**

- Are regular tests carried out:
  - Lubricating oil monitoring?
  - Vibration monitoring?
  - Thermography?

## **Monitor machinery running hours**

- Are machinery/component running hours effectively logged?
- Are machinery/component running hours exceeded?

## **Keep a defect list**

- What kind of problems is the ship having?
- Is the office being notified?
- Are repairs agreed/authorised immediately?
- What is the office response time – Are office replies kept/recorded?

## **Detailed reporting of actions taken**

- Comprehensive reporting of inspections and maintenance/overhaul of equipment
- Full description of what done, where and when, spares used and who did work and who supervised/checked work done

## **Spares quality, quantity, inventory**

- Are adequate spares on board – see Class critical minimum spares list?
- How accurate is the inventory?
- Are they logged in the PMS system when used?
- Are they replaced in timely manner?
- Are there enough on board?
- Is the quality good enough?

## **Report PMS status regularly to office**

- How often is office notified of status of PMS?
- Is it done manually?
- Is it done automatically via internet connection?

## Monitor outstanding requirements

- What are the outstanding requirements for the
  - Month?
  - Week?
- What are the reasons for the outstandings – ie can't paint deck as no paint supplied by office?
- Are the reasons acceptable?
- Are there any trends?
- How many items rescheduled/what is the system in place for authorising rescheduling of tasks?

## Crew to adhere to PMS schedule

- How efficient are the crew?
- Are there enough ER crew on board to cope with schedule?
- Are there enough deck crew on board to cope with the schedule?
- In Pax, are there enough hotel and facilities crew as well?
- Are there enough galley staff for their area of operations?

## SCORE

### Threat: Wear and tear, lack of maintenance, catastrophic failure

Effective PMS in place	
Ensure ship's ISM procedures clearly state what is required of PMS	
Regular condition monitoring	
Monitor machinery running hours	
Keep a defect list	
Detailed reporting of actions taken	
Spares quality, quantity, inventory	
Report PMS status regularly to office	
Monitor outstanding requirements	
Crew to adhere to PMS schedule	

## COMMENTS

# Consequences

## CONTROLS:

### Damage mitigation procedures

- What procedures are in place to help reduce the effects of a failure and how effective are they?
- Have all possible measures been taken and recorded to limit physical damage to equipment?
- All mitigation measures are logged?

### Alarm/stop procedures

- Are procedures in place to warn ship/shore of incident and to stop the operation?
- Are overdue items flagged up by the system to warn when critical component maintenance is overdue?
- Communications procedure in place for all incidents?
- General and fire alarms are functioning correctly?
- Automatic fire detection is good?
- Fixed gas detectors, where fitted, check regular calibration, etc
- Verbal alarm raising system is defined and can be shown to be adequate?
- Procedure in place to suspend or stop the operation if an accident occurs and if it is safe to do so?

### Emergency drills/training

- Are drills/training procedures in place to cope with high risk failures?
- Fire drills?
- Emergency steering drills?
- Are all crew properly trained in the use of the PMS system on board in their area of it and do they have required access to the system as required?

### Emergency equipment adequacy/availability

- Is the ship's equipment available/adequate to deal with high risk failures?
- Are critical spares identified and carried for all critical failures?
- Fixed fire equipment?
- Portable fire equipment?
- SCBA?
- Emergency generator?
- Fire plans, external and internal?

- Damage control plans?
- Are crew familiar with the equipment?

## **Emergency reporting/communication procedures**

- Are there reporting procedures in place and understood if a failure occurs?
- Reporting to owner, charterer, P&I correspondent?
- Categorisation of incident?
- Timing of incident?
- Communication requirements?
- Who was informed on board/on shore
  - When?
  - How?
  - Why?
  - What did they do?
- Records of communications (ship management, third parties, national authorities, P&I, etc)?
- Letters of protest:
  - Are there procedures in place for issuing letters of protest?
  - Are the reasons for issuing letters of protest understood?
  - For all incidents, LOP should be issued and where possible notarised, signed for receipt, etc
  - Copies retained on file on board and entered in the evidence log for use in defending the claim should it arise?

## **Record keeping/evidence retention**

- Information required to help process claims:
  - Log books preserved and records tallied with bell books (movement book – deck and engine)
  - Charts preserved and records kept as evidentiary chain
  - Voyage data recorder (VDR) information properly preserved and evidence used
  - Time of the incident GMT and local time
  - What happened and to whom?
  - Where did it happen?
  - When did it happen?
  - What were they doing at the time?
  - What were the immediate consequences?
  - Full list of witnesses to the incident
  - Witness statements
  - Electronic records of ships operational position at the time of the incident



- Operational status of vessel; at sea; in port; tank cleaning; cargo operations; mooring, etc
- Records of communications and third party responses (other vessels, etc)
- Weather conditions:
  - Description of incident environment (hot, cold, stuffy, dark, confined, moving machinery, etc)
  - Description of weather
  - Description of sea state
- Use of NI publication *The Mariner's Role in Collecting Evidence*
- Photos of incident and location time/date stamped, camera set up recorded, full description given in title and/or in comments field under properties
- Photos to be secured from tampering by using security settings under properties
- Layout diagram
- Ship's logs
- Procedures in use at time of failure
- Risk assessment records
- Exhibits of failed equipment
- Service records
- Communications logs
- Permit to work records as applicable
- Toolbox talk records
- List of equipment (tools) involved in incident: condition of equipment, missing equipment
- Equipment certification, inspection logs, maintenance records

## **Capability of crew to deal with incident**

- How capable is the crew to deal with the failure?
- Competence of individuals involved in incident (recruitment, certification, training records, fitness to work (medical records))
- Fatigue factors: hours of work/rest, time on shift
- Contracted time on board vessel
- Actual time on board vessel current period
- Competence of individuals involved in response
- Experience of crew involved in the incident
- Language barriers of crew/shore personnel involved, if any

## **Use of third party assistance**

- Procedures for contacting third parties for assistance in the event of a failure
- By phone, radio, satellite link, etc

## Learning from incidents

- Are lessons learned from previous failures?
- Non-conformity raised for failure
- Failure is raised at safety meetings and full crew meetings:
  - Discussion of what went wrong and how this can be avoided in future
- Failure is discussed and appraised at company level:
  - Actions to avoid future failures are discussed and taken, improving barriers
- Failure promulgated to full fleet to avoid duplication, if possible
- Failure promulgated industry wide, if appropriate to enhance safety culture
- Full risk assessment undertaken to improve barriers/controls in on board checklists
- Toolbox talks, job hazard awareness (JHA) systems and others, as appropriate in all fleet vessels

## SCORE

### Consequences

Damage mitigation procedures	
Alarm/stop procedures	
Emergency drills/training	
Emergency equipment adequacy/availability	
Emergency reporting/communication procedures	
Record keeping/evidence retention	
Capability of crew to deal with incident	
Use of third party assistance	
Learning from incidents	

### COMMENTS

# METHODOLOGY

Following the well-known definition:

## **RISK = FREQUENCY x CONSEQUENCE**

The Club has analysed the number and value of the Club's claims to prioritise high risk areas and determine what the THREATS are that cause these claims. Then, with the aid of those at the sharp end – our correspondents, surveyors, claims executives and underwriters, and last but not least, our crews – we have sought to determine what CONTROLS – be it engineered, procedural or managerial – have mitigated such claims, or would have done so if they had been in place. Those threats and controls can then be targeted for assessment, either with the help of the Club's own risk assessors, or by Members themselves in conjunction with their crews.

Although 60% of UK Club claims are caused by 'human error', human error is often only 'the straw that breaks the camel's back' – the last event in a chain of causal events.

These causal events can normally be traced back to failures in one or more areas of ship operation, we sometimes refer to them as 'accidents waiting to happen'.

How can we reduce the frequency of these 'accidents waiting to happen'? What 'controls' should we be looking at to ensure the 'threat' is contained and an 'incident' does not occur?

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