



**RISK AWARENESS**

# **CARGO CLAIMS: CONTAINER/CAR/ RORO VESSELS**

*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.

# Cargo loss or damage

## **THREAT: PHYSICAL DAMAGE TO CARGO**

### **CONTROLS:**

#### **Weather routeing**

- Does vessel participate in weather routeing service?
- Does ship receive weather maps and messages?
- Is master advised in ample time of any adverse weather?
- Does ship take evasive action, ie alters course/reduces speed?
- Are adequate records maintained?
- Are sea protests made?

#### **Adequate packing of cargo**

- Will the packaging withstand transportation to and from the ship and stowage ashore or during sea transport?
- Will the packaging damage the 'said' cargo or other cargo?
- Is the packaging correctly marked with lifting points?
- Is the packaging provided with suitable lifting wires/strops/lugs?
- What is procedure for rejecting/recording damage caused by poor packaging (big claims issue)?
- Is the container suitable for the cargo?
- Has the VGM (Verified Gross Mass) of the container been transmitted by the shipper?

#### **Securing/lashings**

- Is cargo correctly lashed and secured, containers, flat racks, oversize, cars, MAFIs (low loaders), etc?
- Is there a securing manual (CSM) on board is it complied with?
- Are lashing and deck fittings in good condition?
- Is there a maintenance/replacement system in place?
- Are lashings fit for purpose and sufficient in number?
- Have the lashings been applied in the correct manner?
- Is it ensured that lashings do not damage the cargo, ie on corners to avoid crushing?
- Are lashings checked on board by the cargo officer or OOW?
- Is it clear who is responsible for lashing and securing of cargo?

## **Stowage position procedures**

- Has the cargo unit been stowed in a safe position:
  - Prior to delivery to the ship?
  - During loading?
  - During the sea voyage?
  - During the discharge ashore and transportation to a safe secure stowage area prior to collection?
- Is the cargo plan accurate and has the cargo been stowed as per the plan?
- Has the stowage of the cargo on board ship been supervised by ship's staff/OOW?
- Has the cargo plan been approved by the chief mate/master?

## **Cargo loading/discharge supervision (RoRo/Container)**

- Are there written procedures on board regarding responsibilities of cargo watch officer – are they followed?
- During discharge are procedures in place for checking all lashings are removed and twist locks in open position before lifting unit?
- Are there procedures in place for reporting damage (holes in container, etc) incorrect container vent settings, etc, rejecting cargo, managing/reporting poor stevedore cargo handling – are they followed?
- Is load/discharge supervised by ships staff continuously?
- Are good records of load/discharge details kept in rough cargo log?
- Are reefer units connected to ship supply promptly?
- Are reefer units temperature settings checked on loading?
- Are there sufficient spares on board for refrigeration unit failures?
- Is there a designated person responsible for reefer units, are they competent?

## **Ship suitable**

- Is the ship approved/fit to carry the cargo?
- Are the lashing systems fit for cargo?
- Are the lashing points strong enough for the load to be taken in all weather conditions?
- Does the certification of vessel allow this cargo?
- Are ship's staff familiar with the cargo carriage?
- Have ship's staff had training with the type of cargo?
- Is the ship's manning level sufficient for the trade/cargo carried?

**SCORE**

**Threat: Physical damage to cargo**

Weather routing	
Adequate packing of cargo	
Securing/lashings	
Stowage position procedures	
Cargo loading/discharge supervision (RoRo/Cont)	
Ship suitable	

**COMMENTS**

# THREAT: LOSS OVERBOARD

## CONTROLS:

### Weather routing

- Does vessel participate in weather routing service?
- Does ship receive weather maps and messages?
- Is master advised in ample time of any adverse weather?
- Does ship take evasive action, ie alters course/reduces speed?
- Are adequate records maintained?
- Are sea protests made?

### Securing/lashings

- Is cargo correctly lashed and secured, containers, flat racks, oversize, cars, MAFIs (low loaders), etc?
- Is there a securing manual (CSM) on board is it complied with?
- Are lashing and deck fittings in good condition?
- Is there a maintenance/replacement system in place?
- Are lashings fit for purpose and sufficient in number?
- Have the lashings been applied in the correct manner?
- Is it ensured that lashings do not damage the cargo, ie on corners to avoid crushing?
- Are lashings checked on board by the cargo officer or OOW?
- Is it clear who is responsible for lashing and securing of cargo?

### Safety of ship procedures (jettison overboard)

- Are there written procedures for jettisoning cargo?
- Was the cargo jettisoned for:
  - Safety reason (safety of ship and personnel)?
  - Ship's stability requirement?
  - Instructions from shore?

### Stowage position procedures

- Has the cargo unit been stowed in a safe position:
  - During loading?
  - During the sea voyage?
- Is the cargo plan accurate and has the cargo been stowed as per the plan?
- Has the stowage of the cargo on board ship been supervised by ship's staff/OOW?
- Has the cargo plan been approved by the chief mate/master?

## Ship suitable

- Is the ship approved/fit to carry the cargo?
- Are the lashing systems fit for cargo?
- Are the lashing points strong enough for the load to be taken in all weather conditions?
- Does the certification of vessel allow this cargo?
- Are ship's staff familiar with the cargo carriage?
- Have ship's staff had training with the type of cargo?
- Is the ship's manning level sufficient for the trade/cargo carried?

## SCORE

### Threat: Loss overboard

Weather routing	
Securing/lashings	
Safety of ship procedures (jettison overboard)	
Stowage position procedures	
Ship suitable	

## COMMENTS



# THREAT: COLLAPSED STOW

## CONTROLS:

### Cargo declaration procedures / carriage instructions

- Is the cargo declaration presented to the ship in sufficient time for the cargo plan to be produced?
- Will correct documentation be supplied to the ship in ample time for ship's staff to understand all requirements?
- Is the cargo declaration and description clear and precise and in a language understood by ship's staff?
- Is there confidence that the cargo declaration details are correct?
- Have any special carriage instructions or stowage precautions been received?
- Will cargo carriage instructions be supplied to ship in ample time and prior to load?
- Are the instructions in a language that ship's staff fully understand?
- It should be ensured that there is no ambiguity in carriage instructions?
- Instructions are not beyond ship's staff or machinery capabilities?
- Documentation to clearly state any special carriage requirements?
- Documentation is in a language understood by the ship?
- Ship to be advised of any IMO category, if applicable, or special needs?
- Is the cargo declaration a true declaration of the cargo to be carried?
- Has documentation been checked that delivery is correct?
- Have bill of lading and instructions been received – shipper and consignee details are correct?
- Contact details received for consignee?
- Cargo to be delivered to the ship in good order/condition/quality?
- For containers is a stowage plan available and checked by ship before loading?

### Stowage position procedures

- Has the cargo unit been stowed in a safe position:
  - During loading?
  - During the sea voyage?
- Is the cargo plan accurate and has the cargo been stowed as per the plan?
- Has the stowage of the cargo on board ship been supervised by ship's staff/OOW?
- Has the cargo plan been approved by the chief mate/master?

## **Weather routing**

- Does vessel participate in weather routing service?
- Does ship receive weather maps and messages?
- Is master advised in ample time of any adverse weather?
- Does ship take evasive action, ie alters course/reduces speed?
- Are adequate records maintained?
- Are sea protests made?

## **Securing/lashings**

- Is cargo correctly lashed and secured, containers, flat racks, oversize, cars, MAFIs (low loaders), etc?
- Is there a securing manual (CSM) on board is it complied with?
- Are lashing and deck fittings in good condition?
- Is there a maintenance/replacement system in place?
- Are lashings fit for purpose and sufficient in number?
- Have the lashings been applied in the correct manner?
- Is it ensured that lashings do not damage the cargo, ie on corners to avoid crushing?
- Are lashings checked on board by the cargo officer or OOW?
- Is it clear who is responsible for lashing and securing of cargo?

## **Adequate packing of cargo**

- Will packaging withstand transportation to and from the ship and stowage ashore or during sea transport?
- Will the packaging damage the 'said' cargo or other cargo?
- Is the packaging correctly marked with lifting points?
- Is the packaging provided with suitable lifting wires/strops/lugs?
- What is procedure for rejecting/recording damage caused by poor packaging (big claims issue)?
- Is container suitable for the cargo (eg heavy coils, heavy scrap, etc)?

## **Ship suitable**

- Is the ship approved/fit to carry the cargo?
- Are the lashing systems fit for cargo?
- Are the lashing points strong enough for the load to be taken in all weather conditions?
- Does the certification of vessel allow this cargo?
- Are ship's staff familiar with the cargo carriage?
- Have ship's staff had training with the type of cargo?
- Is the ship's manning level sufficient for the trade/cargo carried?

**SCORE**

**Threat: Collapsed stow**

Cargo declaration procedures/carriage instructions	
Stowage position procedures	
Weather routeing	
Securing/lashings	
Adequate packing of cargo	
Ship suitable	

**COMMENTS**

# **THREAT: CARRIAGE TEMPERATURE**

## **CONTROLS:**

### **Machinery and temperature monitoring – prior to load**

- Have documentation and cargo (temperature) records been checked prior to shipment?
- Has it been ensured that no temperature anomalies exist prior to load?
- Is machinery fully operational and correct temperature maintained during storage in secure area ashore?
- Have correct carriage temperature been maintained during transportation to ship?

### **Cargo declaration procedures/carriage instructions**

- Is the cargo declaration presented to the ship in sufficient time for the cargo plan to be produced?
- Will correct documentation be supplied to the ship in ample time for ship's staff to understand all requirements?
- Is the cargo declaration and description clear and precise and in a language understood by ship's staff?
- Is there confidence that the cargo declaration details are correct?
- Have any special carriage instructions or stowage precautions been received?
- Will cargo carriage instructions be supplied to ship in ample time and prior to load?
- Are the instructions in a language that ship's staff fully understand?
- It should be ensured that there is no ambiguity in carriage instructions?
- Instructions are not beyond ship's staff or machinery capabilities?
- Documentation to clearly state any special carriage requirements?
- Documentation is in a language understood by the ship?
- Ship to be advised of any IMO category, if applicable, or special needs?
- Is the cargo declaration a true declaration of the cargo to be carried?
- Has documentation been checked that delivery is correct?
- Have bill of lading and instructions been received – shipper and consignee details are correct?
- Contact details received for consignee?
- Cargo to be delivered to the ship in good order/condition/quality?
- For containers is a stowage plan available and checked by ship before loading?

## **Cargo stowage**

- Cargo to be stowed in an approved, recognised safe stowage area?
- Any cargo machinery to be operating correctly (reefer units)?
- Cargo to be stowed where it cannot be damaged by heat/frost/condensation damage?
- Cargo to be stowed where it cannot be damaged by any liquids?
- Cargo to be stowed where adequate ventilation and humidity control can be maintained as is custom of the trade?
- Cargo to be stowed where temperature readings (reefer cargo) are safely and easily taken?
- Not beyond the ship's staff or machinery capabilities – such machinery to be under a PMS?

## **Cargo monitoring (on passage)**

- Can regular cargo monitoring occur during the voyage?
- Any machinery used for temperature control or monitoring should be approved as fit for purpose – under a PMS system
- Defective machinery taken off line and manual monitoring resumed?
- Are full written records of temperature control and monitoring maintained?
- Are there sufficient spares on board if the machinery fails?
- Can cargo monitoring be maintained to prevent damage by heat/frost/ventilation or change of state (thixotropic effect) during voyage?

## **Cargo monitoring (on discharge)**

- Is there regular cargo monitoring during the discharge?
- Are critical temperature limits maintained by OOW – careful monitoring?
- Ensure that any machinery used for temperature control or monitoring should not be disconnected or switched off too early?
- Maintain full written records of temperature control and monitoring during discharge?
- Any spares for machinery to be landed to proper authority and signed receipt obtained?

## **Ship suitable**

- Is the ship approved/fit to carry the cargo?
- Are the lashing systems fit for cargo?
- Are reefer points available for all cargo?
- Are the lashing points strong enough for the load to be taken in all weather conditions?
- Does the certification of vessel allow this cargo?
- Are ship's staff familiar with the cargo carriage?

- Have ship's staff had training with the type of cargo?
- Is the ship's manning level sufficient for the trade/cargo carried?

## SCORE

### Threat: Carriage temperature

Machinery and temperature monitoring – prior to load	
Cargo declaration procedures/carriage instructions	
Cargo stowage	
Cargo monitoring (on passage)	
Cargo monitoring (on discharge)	
Ship suitable	

### COMMENTS

# THREAT: WET DAMAGE

## CONTROLS:

### Cargo loading/discharge supervision (RoRo/Container)

- Are there written procedures on board regarding responsibilities of cargo watch officer – are they followed?
- Are there procedures in place for reporting damage (holes in container, etc), incorrect container vent settings, etc, rejecting cargo, managing/reporting poor stevedore cargo handling – are they followed?
- Is load/discharge supervised by ship's staff continuously?
- Are good records of load/discharge details kept in rough cargo log?
- Are reefer units connected to ship supply promptly?
- Are reefer units temperature settings checked on loading?
- Are there sufficient spares on board for refrigeration unit failures?
- Is there a designated person responsible for reefer units, are they competent?

### Weather routing

- Does vessel participate in weather routing service?
- Does ship receive weather maps and messages?
- Is master advised in ample time of any adverse weather?
- Does ship take evasive action, ie alters course/reduces speed?
- Are adequate records maintained?
- Are sea protests made?

### Weather deck equipment condition

- Are ship's hatches, vents and all sounding pipe openings on the main deck weather tight?
- Are hatches and all openings under a PMS system – is it effective are all fittings in good condition?
- Are hatches and all openings regularly inspected by ship's staff and class society?
- Are sufficient spares on board to maintain hatches in a weather tight condition?
- Are crew trained in maintaining hatches, ventilators and sounding pipes?
- Items commonly found wanting from claims files:
  - Quick acting side cleats properly aligned, tensioned, washers still elastic
  - Cross joint wedges/cleats/bolts in place and free moving
  - Rubber packing correct replacements, no short inserts, correct material
  - Corner packing frequently a cause for concern

- Permanent set of packing (hatch seals) less than 50% of design compression
- Rubber packing indent off center
- Gaps in rubber packing
- Distortion of hatch panels
- Misalignment of hatch panels
- Drain hole channels, cross joint channels, free and clear
- Non-return drain valves working
- Coaming compression bars rust free and with no distortion
- Cross joint packing (seals) in good condition
- Rubber packing retaining channels not distorted by corrosion
- Bearing pads (should be rust free, lightly greased and with no wear down)
- Chain stretch (should be no more than a clenched fist from the horizontal)
- Do hatch lids close in acceptable time (hydraulic motors in good condition, no leaks, etc)
- Signs of inner coaming rusting
- Booby (hold access) hatch condition
- Gas sampling points watertight
- Condition of pipework – air, sounding, ballast, scupper, fire main/sprinkler?
- Ventilators – marked, free (hinges,flaps,dogs), watertight (seals effective), no corrosion of trunk, no rust stains in hold?
- Tanktop/ballast tank plating – mechanical damage, corrosion, inserts, wastage?

## **Effective bilge/ballasting systems/procedures**

- Who is responsible for bilge and ballast operations and are they properly planned?
- Are proper communications established between deck and engine room?
- Are internal transfers of liquids properly monitored, recorded (logged) and strictly controlled to prevent overflow?
- Are scupper plugs *in situ* and correctly and tightly fitted?
- Use of hold isolation valves correct?
- Air and sounding pipe checks?
- Are transfer failure procedures satisfactory?
- Are manual sounding procedures satisfactory?
- Are bilges cleaned each voyage?
- Are bilge non returns checked and tested each voyage?
- Are written log entries made of all bilge tests?
- Are all ship's tanks, bilges, pipes and couplings carrying seawater, fresh water, oil, well maintained under a PMS inspection?



- Are all tanks secured tightly with all bolts/gaskets in good order
- Are tanks and piping leak/hole free?
- Are tank valves working correctly/regularly tested?
- Do tanks, pipes and valves have any changes without written approval from classification society?

### Ship suitable

- Is the ship approved/fit to carry the cargo?
- Are the lashing systems fit for cargo?
- Are the lashing points strong enough for the load to be taken in all weather conditions?
- Does the certification of vessel allow this cargo?
- Are ship's staff familiar with the cargo carriage?
- Have ship's staff had training with the type of cargo?
- Is the ship's manning level sufficient for the trade/cargo carried?

### SCORE

#### Threat: Wet damage

Cargo loading/discharge supervision (RoRo/Cont)	
Weather routeing	
Weather deck equipment condition	
Effective bilge/ballasting systems/procedures	
Ship suitable	

#### COMMENTS

# **THREAT: THEFT/SHORTAGE/ TALLY ERROR**

## **CONTROLS:**

### **Cargo declaration procedures/carriage instructions**

- Is the cargo declaration presented to the ship in sufficient time for the cargo plan to be produced?
- Will correct documentation be supplied to the ship in ample time for ship's staff to understand all requirements?
- Is the cargo declaration and description clear and precise and in a language understood by ship's staff?
- Is there confidence that the cargo declaration details are correct?
- Have any special carriage instructions or stowage precautions been received?
- Will cargo carriage instructions be supplied to ship in ample time and prior to load?
- Are the instructions in a language that ship's staff fully understand?
- It should be ensured that there is no ambiguity in carriage instructions?
- Instructions are not beyond ship's staff or machinery capabilities?
- Documentation to clearly state any special carriage requirements?
- Documentation is in a language understood by the ship?
- Ship to be advised of any IMO category, if applicable, or special needs?
- Is the cargo declaration a true declaration of the cargo to be carried?
- Has documentation been checked that delivery is correct?
- Have bill of lading and instructions been received – shipper and consignee details are correct?
- Contact details received for consignee?
- Cargo to be delivered to the ship in good order/condition/quality?
- For containers is a stowage plan available and checked by ship before loading?

### **Security prior to load ashore/after discharge**

- Has the cargo been held in a secure approved area prior to being loaded?
- Has the cargo been securely transported to the ship?
- Prior to load are all custom seals intact?
- After discharge is the cargo held in a secure approved area?
- Are the custom seals intact after discharge?
- Is the correct cargo being loaded and discharged?

## Security during load/carriage/discharge

- Is the ship's security satisfactory to prevent theft or loss on board during load/carriage/discharge?
- Is the cargo load supervised by ship's staff?
- Is the cargo secure on board?
- Have all the lashings and twist locks been checked to confirm that they are tight and twist locks in the closed position?
- Are all container doors fully closed and secured?
- Are all custom seals in place and container doors stowed door to door to prevent broaching at sea?
- Is cargo discharge supervised by ship's staff?
- Are security rounds made during passage?

## Tally of cargo

- Are tallies conducted on behalf of ship?
- Is tally control effective?
- Are seals checked?

## SCORE

### Threat: Theft/Shortage/Tally error

Cargo declaration procedures/carriage instructions	
Security prior to load ashore/after discharge	
Security during load/carriage/discharge	
Tally of cargo	

## COMMENTS

# **THREAT: PRE-LOADING/ DISCHARGE PLANNING**

## **CONTROLS:**

### **Cargo declaration procedures/carriage instructions**

- Is the cargo declaration presented to the ship in sufficient time for the cargo plan to be produced?
- Will correct documentation be supplied to the ship in ample time for ship's staff to understand all requirements?
- Is the cargo declaration and description clear and precise and in a language understood by ship's staff?
- Is there confidence that the cargo declaration details are correct?
- Have any special carriage instructions or stowage precautions been received?
- Will cargo carriage instructions be supplied to ship in ample time and prior to load?
- Are the instructions in a language that ship's staff fully understand?
- It should be ensured that there is no ambiguity in carriage instructions?
- Instructions are not beyond ship's staff or machinery capabilities?
- Documentation to clearly state any special carriage requirements?
- Documentation is in a language understood by the ship
- Ship to be advised of any IMO category, if applicable, or special needs?
- Is the cargo declaration a true declaration of the cargo to be carried?
- Has documentation been checked that delivery is correct
- Have bill of lading and instructions been received – shipper and consignee details are correct?
- Contact details received for consignee?
- Cargo to be delivered to the ship in good order/condition/quality?
- For containers is a stowage plan available and checked by ship before loading?
- During load are procedures in place for checking security of cargo (lashings and twist locks)?
- During discharge are procedures in place for checking all lashings are removed and twist locks in open position before lifting?

### **Documentation control during discharge**

- Correct documentation to be presented to the master prior to releasing the cargo (bills of lading)?
- Landing orders checked and verified?

- Discharge plan confirmed as correct?
- Correct consignee details?
- Cargo landed in correct port to secure area to correct receiver?

## **Ship suitable**

- Is the ship approved/fit to carry the cargo?
- Are the lashing systems fit for cargo?
- Are the lashing points strong enough for the load to be taken in all weather conditions?
- Does the certification of vessel allow this cargo?
- Are ship's staff familiar with the cargo carriage?
- Have ship's staff had training with the type of cargo?
- Is the ship's manning level sufficient for the trade/cargo carried?

## **Trade competency of personnel to perform required duties**

- Do all personnel have required certification for the jobs they do, are these certificates valid?
- Training checks, HR and ship follow up on joining, full familiarisation and training on board the vessel as required for tasks to be performed?

## **Continuous on board training as required carried out in all areas (ISM requirement)**

- On job training to be carried out by supervisors and not workmates
- Continuation training by senior officers for junior ranks and on job supervision during training
- Some workmate intervention is allowed in training as well if appropriate
  - (Safety awareness for all can be enhanced if a 10 minute 'buddy overview' is used
  - A colleague watches what the worker is doing, makes notes on both the good and bad points and then critiques the on job safety starting with the good points
  - Both persons can learn from this type of interaction and safety awareness promotion on board)
- Ongoing training and proper familiarisation of all officers and ratings on vessel type

## **Toolbox talks and work planning meetings**

- Are these pre-work meetings held on board?
- They should include, as far as practical to do so, the following:
  - Risk assessment of operation to include the plan to be discussed and evaluated with the team members
  - Safety matters, to include:

- Discuss the job plan overall
- What is the job, and procedure to follow?
- Who will do what?
- Discuss the safety rules for the area of work to be done
- What could go wrong?
- What are the main hazards?
- Assess the risks and how do you eliminate them?
- Get all to participate to create ownership of safety in the job to be done and full safety awareness
- Ensure as far as possible all personnel understand the safety rules for the job to be done
- Remind all of the STOP procedure if the job changes (ie weather hazards, additional ropes required, winch problems, minor and major accidents should occur)

## **Cargo loading/discharge supervision (RoRo/Container)**

- Are there written procedures on board regarding responsibilities of cargo watch officer – are they followed?
- Are there procedures in place for reporting damage (holes in container, etc) incorrect container vent settings, etc, rejecting cargo, managing/reporting poor stevedore cargo handling – are they followed?
- Is load/discharge supervised by ship's staff continuously?
- Are good records of load/discharge details kept in rough cargo log?
- During load are procedures in place for checking security of cargo (lashings and twist locks)?
- Is there a procedure in place for checking hatch cleats prior to lifting hatches?
- During discharge are procedures in place for checking all lashings are removed and twist locks in open position before lifting unit?
- Are reefer units connected to ship supply promptly?
- Are reefer units temperature settings checked on loading?
- Are there sufficient spares on board for refrigeration unit failures?
- Is there a designated person responsible for reefer units, are they competent?

## **Stability/Stress calculations**

- Is the loadicator approved by class?
- Prior to any load or discharge is the stability loadicator test program run and are written records maintained?
- Are ship's stability calculations completed by certificated officers approved by flag state?
- Do all officers have required STCW documentation/training requirement?

- Are officers familiar with ship and voyage/stability requirements
- Are officers fully competent in use of loadicator instrument
- Are full and comprehensive written stability calculations retained on board?
- Are full clear and comprehensive list of all tanks/cargo weights of the vessel maintained in an approved format?
- Is the master updated regularly on ship's stability criteria?
- Positive stability ensured throughout voyage and during load and discharge periods?

## **Documentation control during loading**

- Correct documentation presented to load the cargo:
  - Mate's receipts
  - MSDS sheets for dangerous goods
  - Transportable moisture limit (TML) certificates
  - Quality certificates
  - Samples receipts
- When clausing receipts, clauses must be unambiguous, ensure photos are taken and owner's surveyor present to record discrepancies

## **Documentation control during discharge**

- Correct documentation to be presented to the master prior to releasing the cargo (bills of lading)
- Landing orders checked – discharge plan confirmed as correct – correct consignee details – cargo landed in correct port to secure area to correct receiver

## **Effective bilge/ballasting systems/procedures**

- Who is responsible for bilge and ballast operations and are they properly planned?
- Are proper communications established between deck and engine room?
- Are internal transfers of liquids properly monitored, recorded (logged) and strictly controlled to prevent overflow?
- Are scupper plugs *in situ* and correctly and tightly fitted?
- Use of hold isolation valves correct?
- Air and sounding pipe checks?
- Are transfer failure procedures satisfactory?
- Are manual sounding procedures satisfactory?
- Are bilges cleaned each voyage?
- Are bilge non returns checked and tested each voyage?
- Are written log entries made of all bilge tests?
- Are all ship's tanks, bilges, pipes and couplings carrying seawater, fresh water, oil, well maintained under a PMS inspection?

- Are all tanks secured tightly with all bolts/gaskets in good order?
- Are tanks and piping leak/hole free?
- Are tank valves working correctly/regularly tested?
- Do tanks, pipes and valves have any changes without written approval from classification society?

## SCORE

### Threat: Pre-loading/discharge planning

Cargo declaration procedures/carriage instructions	
Documentation control during discharge	
Ship suitable	
Trade competency of personnel	
Continuous on board training	
Toolbox talks	
Cargo loading/discharge supervision (RoRo/Cont)	
Stability/Stress calculations	
Documentation control during loading	
Documentation control during discharge	
Effective bilge/ballasting systems/procedures	

## COMMENTS



# **THREAT: CONTAMINATION FROM OTHER CARGO**

## **CONTROLS:**

### **Stowage position procedures**

- Has the cargo unit been stowed in a safe position:
  - Prior to delivery to ship?
  - During loading?
  - During the sea voyage?
  - During the discharge ashore and transportation to a safe secure stowage area prior to collection?
- Is the cargo plan accurate and has the cargo been stowed as per the plan?
- Has the stowage of the cargo on board ship been supervised by ship's staff/OOW?
- Has the cargo plan been approved by the chief mate/master?

### **Loading supervision procedures**

- Cargo to be visually checked prior to load by cargo officer/OOW
- Any leakages/contamination to be reported and dealt with
- Leaking cargo to be refused stowage on board
- Cargo to be stowed as per IMO requirements
- Mate's receipts endorsed if unable to discharge cargo
- Notes of protest made
- Cargo to be loaded and discharged by trained stevedores to reduce the risk of damage/contamination

### **Contamination prevention during voyage**

- Regular inspections of cargo during voyage, if possible
- Any leakages to be reported and dealt with correctly as approved by custom of the trade
- Cargo to be stowed away from an area where risk of contamination exists
- Cargo isolated if possible to reduce contamination
- All the vessel's tanks and pipelines to be in a good condition
- All ship's tanks and pipelines to be under a PMS
- All external openings to tanks to be secured

### **Ship suitable**

- Is the ship approved/fit to carry the cargo?
- Are the lashing systems fit for cargo?
- Are the lashing points strong enough for the load to be taken in all weather conditions?
- Does the certification of vessel allow this cargo?

- Are ship's staff familiar with the cargo carriage?
- Have ship's staff had training with the type of cargo?
- Is the ship's manning level sufficient for the trade/cargo carried?

## SCORE

### Threat: Contamination from other cargo

Stowage position procedures	
Loading supervision procedures	
Contamination prevention during voyage	
Ship suitable	

## COMMENTS

# **THREAT: FIRE AND EXPLOSION DAMAGE**

## **CONTROLS:**

### **Hot work outside engine room subject to specific approval**

- All hot work in any cargo area is subject to approval and a proper checklist and permit to work system being in place
- No hot work on tanks or hatches unless the possible fire/explosion risk from the cargo is fully assessed

### **Fire detection systems**

- Are fire detection systems in place in the accommodation / engine room / stores / cargo holds?

### **Condition of fire fighting equipment**

- Are certificates in order?
- Are systems adequate?
- Are systems tested regularly?

### **Declaration control prior to shipment**

- Correct documentation to be supplied to the ship in ample time for ship's staff to understand all requirements
- Documentation to clearly state any special carriage requirements
- Documentation in a language understood by the ship
- Ship to be advised of any IMO category, if applicable, or special needs
- Is the cargo declaration a true declaration of the cargo to be carried?
- Check documentation that delivery is correct?
- Bill of lading and instructions received – shipper and consignee details are correct?
- Contact details of consignee?
- Cargo to be delivered to the ship in good order/condition/quality

### **Stowage position procedures**

- Has the cargo unit been stowed in a safe position:
  - Prior to delivery to ship?
  - During loading?
  - During the sea voyage?
  - During the discharge ashore and transportation to a safe secure stowage area prior to collection?
- Is the cargo plan accurate and has the cargo been stowed as per the plan?

- Has the stowage of the cargo on board ship been supervised by ship's staff/OOW?
- Has the cargo plan been approved by the chief mate/master?
- Is the cargo plan fully compliant with IMO regulations?

### Regular inspection (fire rounds)

- Are procedures in place for checking/testing/maintaining remote sensors?
- Are procedures in place for manual checking of areas?

### Smoking controls on board

- Designated smoking areas clearly marked and indicated?
- Are smoking controls effectively policed?

## SCORE

### Threat: Fire and explosion damage

Hot work outside ER	
Fire detection system	
Condition of fire equipment	
Declaration control prior to shipment	
Stowage position procedures	
Smoking control on board	

### COMMENTS

# THREAT: STABILITY ERROR

## CONTROLS:

### Stability/Stress calculations

- Is the loadicator approved by class?
- Prior to any load or discharge is the stability loadicator test program run and are written records maintained?
- Are ship's stability calculations completed by certificated officers approved by flag state?
- Do all officers have required STCW documentation/training requirement?
- Are officers familiar with ship and voyage/stability requirements?
- Are officers fully competent in use of loadicator instrument?
- Are full and comprehensive written stability calculations retained on board?
- Are full clear and comprehensive list of all tanks/cargo weights of the vessel maintained in an approved format?
- Is the master updated regularly on ship's stability criteria?
- Positive stability ensured throughout voyage and during load and discharge periods?

### Effective bilge/ballasting systems/procedures

- Who is responsible for bilge and ballast operations and are they properly planned?
- Are proper communications established between deck and engine room?
- Are internal transfers of liquids properly monitored, recorded (logged) and strictly controlled to prevent overflow?
- Are scupper plugs *in situ* and correctly and tightly fitted?
- Use of hold isolation valves correct?
- Air and sounding pipe checks?
- Are transfer failure procedures satisfactory?
- Are manual sounding procedures satisfactory?
- Are bilges cleaned each voyage?
- Are bilge non returns checked and tested each voyage?
- Are written log entries made of all bilge tests?
- Are all ship's tanks, bilges, pipes and couplings carrying seawater, fresh water, oil, well maintained under a PMS inspection?
- Are all tanks secured tightly with all bolts/gaskets in good order?
- Are tanks and piping leak/hole free?
- Are tank valves working correctly/regularly tested?
- Do tanks, pipes and valves have any changes without written approval from classification society?

**SCORE**

**Threat: Stability error**

Stability/Stress calculations	
Bilge/Ballasting systems/procedures	

**COMMENTS**

# Consequences

## CONTROLS:

### Damage mitigation procedures

- What procedures are in place to help reduce the effects of a cargo incident, and how effective are they?
- Have all possible measures been taken and recorded to limit physical damage to cargo in every possible way, as appropriate to the trade and type of the vessel, ie damage containment, segregation, quantification, reconditioning, etc?
- All mitigation measures are logged?

### Alarm/stop procedures

- Are procedures in place to warn ship/shore of incident and to stop the operation?
- 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?
  - Pumps on board/ashore?
  - Cargo conveyor belts?
  - Cranes/derricks?
  - Electrical power cut outs?

### Emergency drills/training

- Are drills/training procedures in place to cope with high risk incidents?
- Fire drills?
- Watertight integrity drills – watertight doors, bulkhead valves, etc?
- Ballasting procedures in the event of a hull breach?

### Emergency equipment adequacy/availability

- Is the ship's equipment available/adequate to deal with high risk incidents:
  - Fixed fire equipment?
  - Portable fire equipment?
  - SCBA?
  - EEBD and location suitability for all breathing apparatus?

- Fire plans, external and internal?
- Ventilation plans?
- Damage control plans?
- Are crew familiar with the equipment?

## **Emergency reporting/communication procedures**

- Are there reporting procedures in place and understood if an incident 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 casualty communications and third party responses (salvors, 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 incident?
- Risk assessment records?
- Exhibits (packaging, cargo, broken equipment, etc)?
- Service records?
- Certifications?
- 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 incident?
- 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 an incident
- By phone, radio, satellite link, etc

- General advice:
  - Club correspondent
- Stability advice:
  - Collision – classification society
- Cargo:
  - Correspondent

## Learning from incidents

- Are lessons learned from previous incidents?
- Non conformity raised for incident?
- Incident/Accident report correctly filled in?
- Incident is raised at safety meetings and full crew meetings:
  - Discussion of what went wrong and how this can be avoided in future?
- Incident is discussed and appraised at Company level:
  - Actions to avoid future incidents are discussed and taken, improving barriers?
- Incident promulgated to full fleet to avoid duplication, if possible?
- Incident 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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