

# Chemical tanker claims

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## Cargo shortage and contamination

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# Typical chemical tanker

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# Cargo shortage and contamination claims

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Can be very expensive!

Claims can be avoided, reduced, and defended against by following best practices and having knowledge of industry practices.

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# Review of cargo shortage claims

# Causes of cargo shortage claims

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- Bill of Lading / shore figure high
- Ship or shore tank calibration error
- Incorrect density, temperature, ullage
- Evaporation / settling out of water
- Mistakes made in calculations
- Leakage of cargo
- Cargo not fully discharged (ROB)

## Before loading – information from Charterers / Managers

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- Cargo name : listed on Certificate of Fitness?
- Description : quantity, quality, density, viscosity.
- Instructions : loading/carriage/discharge. Heating, segregation, vapour pressure – can ship comply?
- Cargo tank & pipeline coatings compatible?
- Tank cleaning requirements?
- Safety : Company circulars, IBC Code, MSDS, MFAG, PPE. Any additional requirements?

# Before loading, preparing the vessel

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- Prepare cargo plan – consider trim & stability criteria, free surface & sloshing limits, voyage temperatures (cargo expansion), adjacent tank temperatures (evaporation). Don't exceed filling and weight limits for each tank.
- Equipment available on board : tested, calibrated, spare parts. Sampling equipment.
- Tank cleaning, test heating coils, pumps, lines, valves, vents, drains.

# Fixed measuring equipment at tank

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# Before loading, liaison with terminal

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- Ship / shore conference. Checklist completed.
- Joint Survey of cargo tanks. Accurate joint measurement of residue onboard quantity (OBQ). Consider : sediment, free water (dips from at least 3 locations, including aft most point), temperature of liquid residues, pipeline quantities, trim of vessel.
- If terminal measuring equipment used on board, it must be cross checked using ship's equipment.
- How many shore tanks. (Record when tank changes)

# Checking height of sounding pipe

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# During loading, monitoring the operation

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- Obtain samples from manifold and 'first foot' samples in first receiving tanks. Seal, label and record details of samples.
- Check specific gravity of cargo being loaded.
- Check all tanks, ensure no leaks to other tanks
- Hourly checks of ullages and temperatures of tanks being loaded. Calculate quantities.
- Maintain good records of all operations.
- Check draft visually.

# After loading, survey, documentation

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- Joint Survey of all tanks. Take several ullage readings, to account for roll or pitch. Full agreement needed on ullage and temperature for each tank. Do not rush the survey.
- Obtain samples from top, middle and bottom of each loaded tank. Seal, label and record.
- Owner's surveyor to liaise closely with Chief Officer, to ensure their calculations and timings are consistent.
- Apply temp corrections for each tank. (Not average)
- Port log and other cargo & survey records must be complete, accurate and legible. Include records of weather and sea condition.

# Bill of Lading figure

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The shore will provide their figure for the cargo delivered amount, based on their out turn figure from the shore tanks.

This figure is then generally used as the Bill of Lading figure.

# Large difference between ship & shore quantity?

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- Master should not sign the Bill of Lading and should suspend the Agent's authority to sign.
- Check with Vessel's Experience Factor (VCF)
- Check ALL ship measurements & calculations (Are all parties using same ASTM tables?)
- Check ALL shore records and calculations (may need assistance of Owner's surveyor to speed up this process on site)

# Possible reasons for large difference in quantity

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- Incorrect ship figures of cargo received (error in ullaging, applying temperature, density or trim/list corrections etc)
- Pipeline quantity not included.
- Cargo leaked to other tank, or incorrectly loaded to another tank.
- Cargo still present within shore pipeline system, or in other tanks.
- Shore tank level gauge or metering system error.

# What if reason for large difference is not found?

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- Master should inform the P & I Club, either directly or via the local Correspondent.
- Master should inform the ship owners & managers.
- Master should inform the ship's agent, who should assist to notify the charterers.
- Commercial dispute : ship owners / charterers to discuss. To notify shippers, receivers etc as required.
- Master should issue Note of Protest and prepare copies of all relevant documents available.



# During the voyage

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- Ensure charterer voyage instructions and owner / ship manager procedures followed.
- Regular checks of cargo tank ullages, temperatures and pressures (day and night variations?). Keep good records.
- Immediately investigate any unexpected readings and report to owners/shipmanagers.
- Record ambient sea and air temperatures.

# Before discharging, survey

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- Prepare cargo discharge plan before arrival at discharge port.
- Ship / shore meeting. Witness and seal overboard valves as required, and record seal numbers.
- Joint Survey measurement and sampling of all tanks. Same careful procedures as at load port. Do not rush. Cross check shore measuring equipment.
- Investigate any differences with load port figures.
- Keep good legible records of cargo, sea and weather.

# Discharging and stripping

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- Start at reduced rate, check over the side and other ship tanks, before increasing rate.
- Hourly records of all tanks levels, temperatures, pressures and manifold pressure.
- Obtain hourly figures of cargo received from shore. Compare with ship discharged figure.
- Pay close attention when stripping tanks, lines, pumps.
- Record all steps of discharge sequence and trim.

# Residues in a cargo tank

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# After discharge, survey

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- Joint Survey of all tanks and void spaces. (not just the cargo tanks operated in this port)
- Closely monitor surveyors to ensure correct soundings taken, recorded and calculated.
- Witness cargo pipelines and pumps drained.
- Take samples of any tank bottom residues.
- Ensure ROB figure is agreed and acceptable to ship. ROB to be described as 'unpumpable'.

# Cargo shortage at discharge - What to do?

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- Re-check all cargo tanks, pipelines and pumps for cargo ROB.
- Re-check calculations, corrections, draft, heel.
- Check all other tank quantities (leaks).
- Re-check load port calculations.
- Query / investigate shore tank and pipeline quantities.

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# Review of cargo contamination claims

# Causes of cargo contamination claims

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- Contamination by other cargo residues, sea water, fresh water or cleaning substances in ship or load port shore tanks, pipelines, valves, hoses.
- Incorrect valve operation by shore or ship or defective valves.
- Leaking heating coils in shore or ship tanks.
- Hydraulic valve oil leakages in shore or ship tanks.
- Cracks or coating failures in ship or shore tanks and pipelines.
- Dirty measurement or sampling equipment.
- Water ingress to tanks due poor structure (also through pipes, accesses)



# Preparing the vessel for loading

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- Cargo name : listed on Certificate of Fitness?
- Can cargo liquids be loaded safely and segregated (minimum two valve separation)
- Can cargo vapours be effectively segregated?
- Tank & pipeline coatings compatible?
- Can tank cleaning requirements be complied with?

# Load planning

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- Prepare cargo plan. Pay close attention to risks of contamination, particularly for highly re-active chemicals. Check crucial times in loading, what valves / pipelines involved?
- Vapours can also cause contamination. Consider vent line arrangements.
- Consider heat from adjacent tanks.
- Consider the performance of any inhibitors.

# Vessel preparation

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- Tank cleaning, rinse and dry. Conduct 'wall wash' tests. Also check pipes and valves.
- Test heating coils, pumps, lines, valves, vents, drains, including Pressure/Vacuum valves.
- Inspect tanks – check structure, coatings.
- Tank openings, sounding pipes, seals clean?
- Test all cargo system alarms, measuring systems & equipment. Record results.

# Cargo tank wall and pipelines

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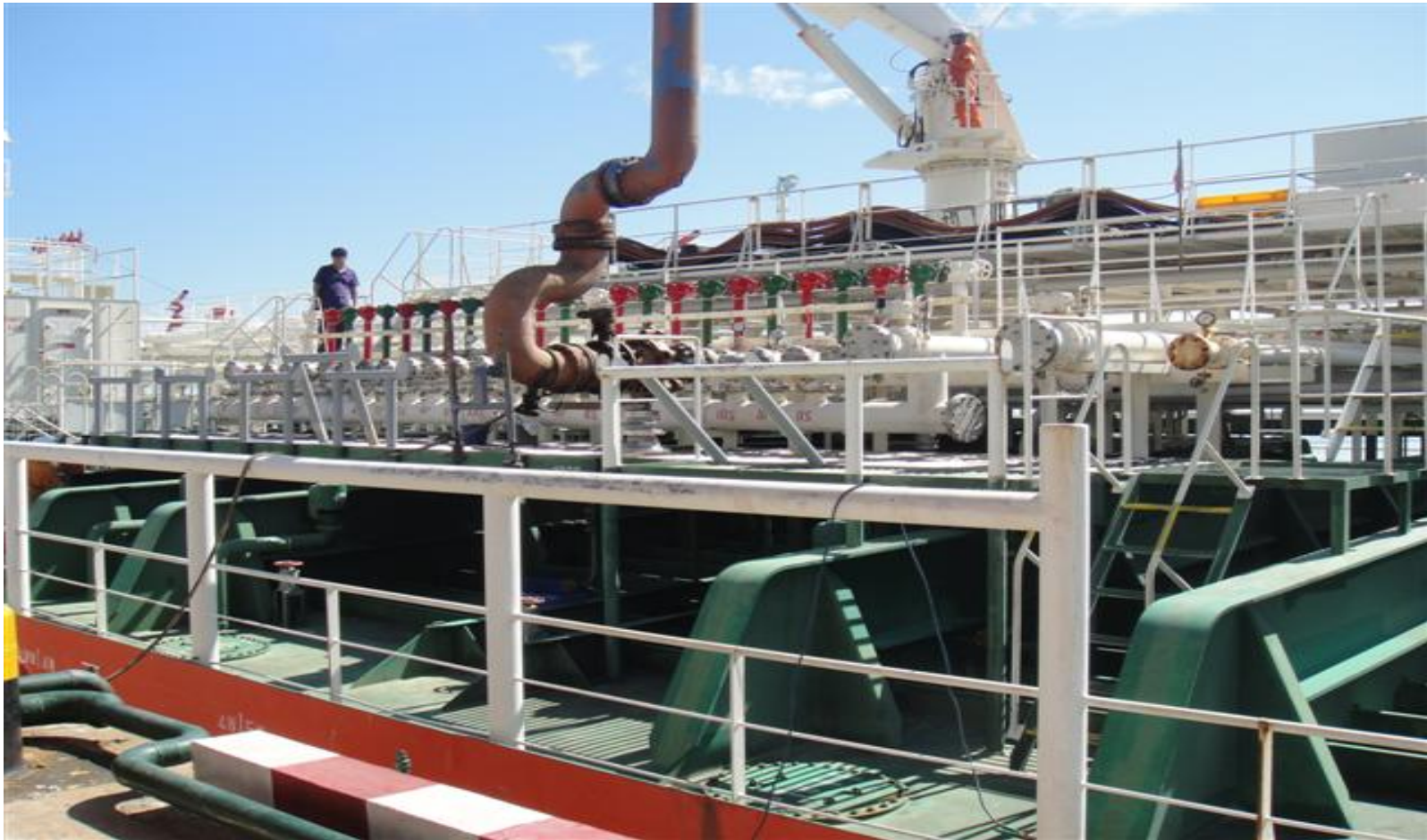
# Before loading

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- Ship / shore conference. Information on shore pipeline details, shore tanks, how many tanks, what times will change over? (Ship needs to obtain samples from ship tanks after change over of shore tanks). Agreement on samples from shore tanks to be given to ship. (should be 2 sets, 1 for ship, 1 for receiver)
- Joint Survey of cargo tanks, pipelines, valves.
- Agree procedure for sampling of ship tanks.

# Prepare sampling equipment at manifold

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# During loading

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- Obtain samples from manifold and 'first foot' samples in first receiving tanks. Seal, label and record details of samples.
- Check all tanks, ensure no leaks to other tanks. Hourly checks of tanks & manifold.
- Obtain further samples from ship tanks after shore tanks have changed.
- Maintain good records of all operations.

# Obtaining cargo samples

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# Obtaining sample using closed sampler

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# After loading

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- Joint Survey of all ship tanks. Do not rush.
- Obtain samples : top, middle and bottom of each loaded tank. Seal, label & record.  
(Accompany surveyors during sampling)
- Ensure shore provide shore tank samples to ship. (2 samples from each shore tank)
- Ensure good records of sampling and surveys.  
Record addition of any additive to cargo.

# During the voyage

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- Ensure charterer voyage instructions and owner / ship manager procedures followed.
- Regular checks of cargo tank ullages, temperatures and pressures (day and night variations?). Keep good records.
- Immediately investigate any unexpected readings and report to owners/shipmanagers.
- Record ambient sea and air temperatures.

# Before discharge

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- Prepare cargo discharge plan.
- Ship / shore meeting.
- Joint Survey measurement and sampling of all tanks. Same careful procedures as at load port. Do not rush. Closely check shore representatives sampling equipment.

# Discharge, stripping, survey

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- Take regular in line samples at manifold.
- Hourly records of all sampling.
- After completion of stripping : Joint Survey of all tanks and void spaces.
- Closely monitor surveyors.
- Take samples of any tank bottom residues.
- Complete documentation and cross check.

# Sealed and labelled cargo samples

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# Substance in a cargo line

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# Residue inside tank sounding pipe

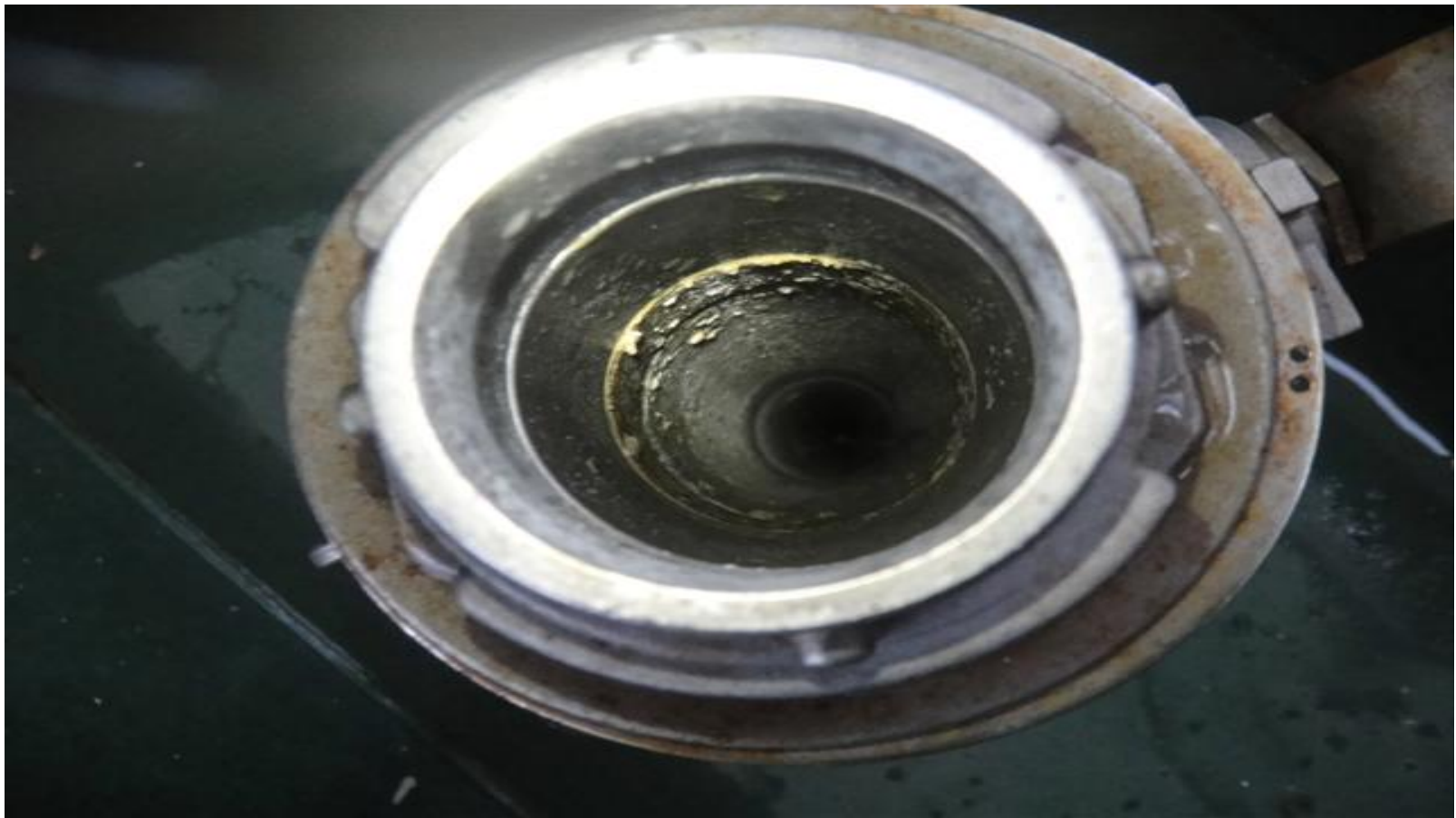
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# Residue visible in sounding pipe

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# If cargo appears to have been contaminated?

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- Inform P & I Club directly / via correspondent.
- A suitable surveyor should be appointed to assist Owners and Master. Issue Protest.
- Endeavour to have all cargo discharged.
- Isolate any cargo suspected of being contaminated in a separate tank if possible.
- Explore options for blending, reconditioning or disposal of cargo.

# Chemical tanker claims

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Cargo shortage and contamination

Thank you