

DRAFT SURVEY DEFENCE OF DRY BULK CARGO SHORT DELIVERY CLAIMS

Maritime Mutual Risk Bulletin No. 62

October 18, 2022



Midship draft markings on a bulk carrier. Note the problematic water level dip at the 10.20 meter draft mark which is caused by wave swell at the berth.

INTRODUCTION

Claims for the alleged short delivery of dry bulk cargoes are unfortunately common. The cargo receiver's allegation – often accompanied by a threat of ship arrest – is usually that the cargo weight discharged was less than the declared Bill of Lading (BL) cargo weight, as signed by the master. This Risk Bulletin highlights both the legal defences available to Member's and the technical defences provided by draft surveys to defeat or minimise unjustifiable shortage claims.

BACKGROUND

The receiver's position will normally be that they have paid for the cargo based on the weight figure stated in the BL. If the receiver's outturn weight figure, as measured by shore conveyor belt systems or other weight measurement devices, is less than the BL figure then the receiver will demand compensation for the shortage from the shipowner/carrier.

The essential legal and technical questions which then arise are:

- Whether the BL cargo quantity/weight declared by the shipper is in fact guaranteed by the shipowner such that the shipowner is legally compelled to compensate the receiver for any difference between the declared cargo weight and the allegedly received weight?
- Whether the alleged shortage is in fact a real/physical shortage or simply an apparent shortage which has been caused by differences in the types and accuracy of the systems and/or methods used to measure the quantity loaded at the load port and the outturn quantity at the discharge port?

The answers to these questions are considered below.

LEGAL DEFENCE ISSUES

The Hague and the Hague Visby (HV) Rules are international maritime conventions which set out the minimum rights and obligations of the shipper and shipowner/carrier. They are incorporated into most BLs by contract and/or by the force of law

NOTE: The HV Rules are effectively an upgraded version of the Hague Rules. The MM Club Rule Book provides that Members should not carry cargo under BL terms which provide less protection to the Member from liability than the HV Rules.

The shipowner's obligation to issue a BL which contains the shipper's declaration of the quantity of the cargo loaded on board is contained within the HV Rules. But is the BL declared quantity, as signed by the master, guaranteed by the shipowner? There are two options and two answers.

- Option 1: If the BL is a non-negotiable 'Straight BL' which states the name of the receiver, then the BL quantity figure provides only *prima facie evidence* of quantity which may be disproved by other shipowner evidence e.g., independent surveyor draft survey figures for load and disport.

- Option 2: If the BL is a negotiable 'To Order BL' which has been sold and endorsed to a third party during the voyage, the quantity figure provides *conclusive evidence* of quantity which may not be disproved by other evidence and is effectively guaranteed by the shipowner.

Option 2, which is quite common for dry bulk cargo shipments, obviously presents a significant cargo shortage liability problem for the shipowner. Can this be overcome?

What has been done is that reliance has been placed on the HV Rules entitlement which allows a master to refuse to sign a BL in circumstances where he has reasonable grounds to suspect that the shipper's declared quantity does not accurately reflect the quantity loaded or for which he has no reasonable means of checking. This entitlement has been turned into BL printed cargo shortage protection words such as "*weight, measure, marks, numbers, quality, contents and value unknown*" or similar words.

The intention of the aforesaid words has – in the English courts – been to contractually nullify the impact of the HV Rules on shipowners in relation to the evidential value of BL shipper declarations as to quantity. However, there are many jurisdictions that do not accept the intended effect of cargo shortage protection words even in circumstances where a BL dispute resolution clause specifies a choice of English law and jurisdiction. If this should occur, then the defence focus must shift to technical defences.

TECHNICAL DEFENCE ISSUES

If the received cargo weight exceeds the load port weight declared in the BL, then no shortage claims will arise. If the contrary is the case, as often happens, then there is likely to be a shortage claim unless a cargo weight discrepancy allowance (e.g., 0.5%) has been specifically agreed and stated in the charterparty and BL terms.

NOTE: Unlike the tanker industry which has agreed a 0.5% outturn allowance, there is no industry agreed discrepancy/shortage allowance for dry bulk cargoes. Members should therefore ensure that an appropriate dry bulk shortage allowance is agreed at the time of fixing a charterparty and is specifically stated in both the charterparty and BL terms.

The principal technical issue is always to ascertain the accurate weight of a bulk cargo as loaded on board and the accurate weight of the same cargo as ultimately discharged ashore. If this can be accomplished, it will provide the strong evidence necessary to defeat or at least minimise a claim for an alleged short delivery claim. This sounds simple enough, but the difficulties lie in the

accuracy of the methods and/or equipment used to measure the weight of the cargo at the load port and the discharge port.

The three principal methods of ascertaining the weight of bulk cargo and the associated accuracy problems with those methods are considered below.

TRUCK WEIGHBRIDGE

This method is common for the loading and discharge of smaller bulk cargo quantities at small and developing economy ports. The process consists of weighing each truck when empty on a fixed weighbridge platform to first establish what is known as the Tare Weight. After loading the truck, it will be weighed again to obtain the Gross Weight. The Tare Weight is then deducted from the Gross Weight to obtain the Net Weight of the cargo alone.

There are two problems with weighbridge systems:

- First, the weight accuracy of weighbridges appears to range from about 0.5% to 1.0% and usually deteriorates with frequent usage. Members should always obtain a good copy of the weighbridge certificate stating the weighbridge type and most recent check and calibration by an ISO certified inspection company or government authority.
- Second, weighbridge operation, weight recording and truck tallying can be manipulated. Members should therefore make enquiries to local agents, and port managers to assess the record of the accuracy and reliability of the weighbridge and the integrity of its operators.

CARGO CONVEYOR BELT WEIGHMENT

The weight of cargo on a conveyor belt is measured by using one or more weight detection sensors which are fitted underneath and in direct contact with the belt. These weights and the speed of the belt are recorded and fed to a nearby calculator unit. This unit registers the total cargo weight loaded or discharged.

A [Siemens E-learning You Tube](#) advises that the accuracy of their conveyor belt weigh scales varies with the number of weight sensors fitted. Weight detection using one sensor only provides a Siemen's advertised accuracy of about 0.5% of the total amount loaded, whereas the installation of three sensors in series provides an accuracy of 0.125%.

There are two problems with conveyor belt weighment which are similar to weighbridge operation in terms of weight accuracy and calibration and operator integrity. Appropriate loss prevention measures are required.

CARGO WEIGH CALCULATION BY DRAFT SURVEY

A draft survey will, by application of Archimedes Principle, provide the net weight of the cargo on board. In brief, the process is as follows:

1. The draft marks of the vessel are observed and recorded at six points on the hull i.e., on both the port and starboard sides of the bow, midships and stern). The mean of these six drafts will be calculated, and this figure will be corrected for the vessel's trim.

NOTE: The photo at the top of this Bulletin illustrates wave swell dip, the principal difficulty faced when observing and recording draft figures. Visual averaging by on-site observers will assist and a video recording of this process is recommended for evidential purposes.

2. Samples of the water in which the vessel is floating will be drawn and its density will be determined by use of a certified hydrometer.
3. The vessel's flag state approved hydrostatic data and weight displacement table will then be referred to and entry with the mean draft will provide the vessel's weight displacement at that draft in sea water at a density of 1.025 gm/cu cm. This draft will then be corrected to obtain the vessel's load displacement at the density of the water sampled and measured.
4. All weights on board the vessel will then be ascertained inclusive of fuel, fresh water, ballast, stores, etc. These weights will all be added together with the 'as built' lightship weight of the ship itself. This total figure is referred as the deductible weight.
5. The deductible weight is then deducted from the vessel's corrected load displacement weight to provide the net cargo weight.

NOTE: Full details are available in the publication [Draft Surveys: a Guide to Good Practice, 2nd Ed.](#), which is available in hard copy from Witherby at a cost of about USD 50.00. It provides a step-by-step guide, together with recommendations to improve accuracy and a copy of the UN ECE Draft Survey Code Form. Members who operate dry bulk carriers should ensure that their masters and chief officers have access to this publication and are required to refer to it or an equivalent publication by their ISM Code or NCVS SMS procedures.

In terms of accuracy, several industry studies have demonstrated that the draft survey process can provide a net cargo weight to an accuracy within + or - 0.5% i.e., sufficient to challenge the accuracy of a shipper's declared cargo weight figure in a BL as derived from Truck Weighbridge or Conveyor Belt Weighment sources.

USE OF DRAFT SURVEYS TO DEFEND CARGO SHORTAGE CLAIMS

Draft surveys and the loaded-on board or delivered to quay side cargo weight they provide can be utilised in several ways.

USE OF DRAFT SURVEYS ALONE AT LOAD AND DISCHARGE PORTS WITHOUT SHORE WEIGHING EQUIPMENT

'No shore weighing equipment available' situations can occur at smaller ports in developing nations or at ports where cargo is loaded from and/or discharged into lightering vessels. In such circumstances, the shipper (who may also be the voyage charterer if the cargo was sold on CIF terms) will normally appoint a marine surveyor to conduct a draft survey to ascertain the weight of cargo loaded. This will provide the cargo weight figure which the shipper will require to be entered on the BL.

The shipper will usually invite the shipowner to attend at what is known as a joint survey and the Member/shipowner may then elect to appoint their own marine surveyor to attend on their behalf. Alternatively, the Member may choose to instruct their vessel's master and chief officer to attend the shipper's draft survey and cargo weight calculation. However, it is essential that the shipper's surveyor is supervised and that their observations are witnessed.

Whatever joint survey method is chosen, it is important that the Member's appointed surveyor or master and chief officer team work closely together with the shipper's surveyor to ensure that all draft readings, water density measurements, fuel and ballast tank content soundings and other readings required are as accurate as possible and are mutually agreed. Short mobile phone video recordings of the draft and hydrometer readings are recommended. It is also essential that the observers check that the calculation methodology utilised by the shipper's surveyor accords with the UN ECE Draft Survey Code.

At similar 'no shore weighing equipment available' discharge ports, the receiver (who may also be the voyage charterer if the cargo was sold on FOB terms) will normally appoint a surveyor to conduct a draft survey to ascertain the weight of cargo on arrival and, effectively, as delivered. Again, this will usually be accomplished as a joint survey and, again, it is important that Member's appointed surveyor or his master and chief officer team work closely with the receiver's surveyor in the manner described above.

If the cargo weight determined by draft survey at the discharge port exceeds the load port figure entered in the BL or is slightly less but within any discharge figure discrepancy allowance agreed, then there should not be a shortage claim problem. In such circumstances, the Member's appointed surveyor or his master and chief officer team may sign a copy of the receiver's surveyor report and weight calculation for both receipt and as confirmation of its apparent accuracy.

However, if the discharge port figure is less than the BL figure by more than any pre-agreed discrepancy allowance, then there will likely be a shortage claim. In such circumstances, the master and chief officer should not confirm the receiver's surveyor discharge port figure and, if asked to do so, should simply sign and endorse a copy of his/her field report with the words, 'As receipt only and without prejudice'.

LOAD PORT DRAFT SURVEYS AS A CHECK ON WEIGHBRIDGE OR CONVEYOR BELT WEIGHMENT

Draft surveys at the load port provide an independent check on the accuracy of any Weighbridge or Conveyor Belt Weighment figure as declared by the shipper. They are normally conducted by an independent marine surveyor appointed by the Member, who will also be responsible for their fees. The shipper should be notified well in advance and should be invited to participate in joint surveys both before and on completion of loading.

If the draft survey cargo weight/ship's figure is more than the shipper's figure, then the master or agent should be able to sign the BL as presented without undue concern. However, if the ship's figure is less than the shipper's figure (particularly if the amount of the difference is more than any agreed shortage allowance) then this should be a cause for significant concern.

NOTE: If the BL states a shipper's loaded quantity greater than the quantity which the Master knew or ought to have known was loaded this will likely prejudice the P&I cover for any resulting shortage claim.

The commercial reality is that the master will usually not be permitted to note the ship's figure on the BL as this could be construed as 'clausing' the BL such that it would no longer be a 'clean' BL. This could then result in the BL being rejected by any bank facilitating a Letter of Credit (LOC) payment for the cargo. So, what is the master to do?

What is permitted is that the master can enter the ship's figure in the Mate's Receipt which should be presented by the shipper to the master or chief officer for approval and signature before the BL is issued and presented for signature. The master officer for should ensure that a copy of the signed and annotated Mate's Receipt is delivered to the shipper and a signed acknowledgment is provided to evidence the shipper's awareness of the ship's figure.

If the difference between the ship's figure and the shipper's figure is not more than any pre-agreed shortage allowance or the generally accepted accuracy of a draft survey weight of about 0.5%, then the above annotated, signed and shipper acknowledged Mate's Receipt will provide strong evidence to support the defence of any subsequent shortage claim by cargo receivers.

However, if the difference between the ship's figure and the shipper's figure is so large as to raise an HV Rules 'reasonable suspicion' that the shipper's figure does not accurately represent the amount of the cargo on board, the master may need to exercise his right to refuse to sign the BL or to issue any formal authority to the agent to do so. The master's next step should then be to contact immediately the Member/ shipowner and MM for urgent assistance and advice.

At this stage, the shipper and/or charterer may offer a Letter of Indemnity (LOI) to the master and shipowners to cover any losses which might arise from his signature of the BL as presented. Members are reminded that an LOI of this nature may be unenforceable in law as its issue and signature may be considered as a fraud against the receiver of the cargo. Members must also remember that MM's Club Rule Book advises that MM will not provide cover for any losses arising from such an LOI arrangement.

DISCHARGE PORT DRAFT SURVEYS AS A CHECK ON WEIGHBRIDGE OR CONVEYOR BELT WEIGHMENT

A draft survey on arrival at the discharge port provides an independent and further check on the accuracy of the shipper's BL figure. A subsequent draft survey on completion of discharge provides a final check on the Weighbridge or Conveyor Belt Weighment outturn figure as declared by the receiver. As with load port draft surveys, these surveys are normally conducted by an independent marine surveyor whose fees are paid by the Member.

Members should make early enquiries to the port agent to find out what type of discharge outturn weight which will be utilised by the receivers at the discharge port and what information may be available regarding its accuracy and past outturn claims shortage experience. Members should also obtain the contact details of the receivers to advise them that they will be appointing draft surveyors and invite receivers to participate in joint draft surveys both on arrival and on completion of discharge.

If the draft survey/ship's figure on arrival at the berth is more than the BL figure, then it is likely that the receiver's 'as delivered on to the jetty' outturn figure will be within any pre-agreed shortage allowance or the generally accepted 0.5% draft survey accuracy. However, if the ship's figure is less than the BL figure by more than the aforesaid shortage and/or accuracy allowances, then Members should anticipate a shortage claim and notify MM immediately.

If a shortage claim is subsequently lodged by receivers against the Member/shipowner – and this can often occur before completion of cargo discharge – then this is when receiver threats of vessel detention and/or arrest may occur. It is also when the draft survey *evidence* as to the cargo weight received on board and the cargo weight discharged ashore will become critical to the successful full defence or minimisation of the claim and the protection of the Member from loss.

10 POINT SUMMARY – CARGO SHORTAGE CONTROL

Members are encouraged to share this Risk Bulletin with their ship managers, DPAs, masters and chief officers to help provide a better understanding of the cargo weight determination and potential short delivery challenges faced when loading a bulk cargo. The 10 key risk management points are as below:

1. When negotiating the terms of charterparty for the carriage of dry bulk cargoes, always ensure it includes an agreed discrepancy/shortage allowance together with details of how the shipper's loaded and receiver's discharged cargo weight is to be determined.
2. Members should remember that the HV Rules provide in the BL that the cargo shipper is required to indemnify the shipowner for any losses caused by a proven and causative inaccuracy in the shipper's BL figure. Members should therefore always ensure that this indemnity is specifically incorporated into the charterparty terms. Further, that the charterers and/or shippers are fully insured for charterers' or traders' liability losses.

3. When presented with a BL for signature always check whether it is a non-negotiable 'Straight BL' or a negotiable 'To Order' BL. If it is a 'To Order' BL, it is essential to ensure that the quantity stated on the BL is qualified by the following or similar words: *weight, measure, marks, numbers, quality, contents and value unknown*.
4. If the shipper's loaded or receiver's discharged weight is to be ascertained by truck weighbridge or cargo conveyor belt weight scales, the relevant certificates showing the most recent check and calibration by an ISO certified inspection company or government authority should be requested before loading or discharge commences. Certificate inspection and copying should be accomplished by the ship's appointed – and preferably MM approved – independent surveyor.
5. Whenever a dry bulk cargo is carried, a draft survey should always be conducted at both the load and discharge port – even if the charterparty provides that the cargo weight is to be determined by other means. Ideally, the draft survey should be carried out by the ship's appointed – and preferably MM approved – independent surveyor. Alternatively, the master and chief officer should conduct the draft survey together. If a shortage is later claimed, the draft survey will help to show that the figure obtained by other means is flawed.
6. If a draft survey is to be carried out by the shipper/receiver, or the master/ chief officer should always participate in the survey.
7. When carrying out all draft surveys, the ship's appointed surveyor and/or the master and chief officer should follow the processes and recommendations in the publication referred to above.
8. In situations where the shipper and/or charterer will not permit the BL to be claused to reflect the fact that the ship's figure loaded quantity is less than the shipper's figure as stated on the BL, the fallback position is to clause the Mates Receipt with the ship's quantity and have the shipper sign a copy as acknowledgement. This will assist the Member in the event of any subsequent necessity to recover shortage claim losses from the shippers or charterers.
9. Any Letter of Indemnity (LOI) offered by the shippers in consideration of the master signing, or authorizing the agents to sign, a BL stating a shipper's quantity which the master knows or suspects (usually by reference to the draft survey) to be incorrect will not be legally enforceable and will result in the loss of MM P&I cover for any associated shortage claim. If offered such an LOI, the Member and their master should decline acceptance and request MM's urgent advice and assistance.

10. In case of any doubt, Members should always request early advice and assistance from MM.

CONCLUSION AND TAKEAWAY

Cargo short delivery claims continue to generate significant losses for shipowners. The only way to defeat or at least minimise such claims is through heightened awareness of both the nature and extent of the problem and the consistent and comprehensive application of the legal and technical loss protection tools available.

The legal tools include the relevant provisions of the HV Rules, as usually incorporated into BLs and often into Charterparties, regarding the evidential value of a shipper's declaration as to cargo weight. These provisions, in combination with the printed or written words "*weight, measure, marks, numbers, quality, contents and value unknown*" (or similar words), are held by the English courts to provide full protection to shipowners against cargo shortage claims based on the shipper's declared cargo weight. Regrettably, these protections are not always available in many other jurisdictions.

The technical tools available to defend the shipowner in every jurisdiction include shore-based cargo weight measurement and accuracy assessment and cross checking using draft surveys accomplished by well-trained masters and chief officers and experienced marine surveyors. The draft survey process is not perfect but its industry accepted accuracy of about 0.5% appears comparable to the general accuracy of shore-based weighment devices. Draft surveys can therefore provide strong and compelling evidence to support the successful defeat or negotiated minimisation of unjustifiable shortage claims, no matter where they occur.