MSIG
SPECIALTY MARINE



DRAUGHT SURVEYS

BEST PRACTICES

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Over the years, MSIG Specialty Marine has been involved in and reviewed numerous cargo shortage claims where the reliability, interpretation, or execution of draught surveys played a significant role.

These cases have highlighted the importance of conducting draught surveys accurately, diligently, and independently. This circular provides practical guidance and promotes best practices regarding the conduct, review, and interpretation of draught surveys. Its objective is to reduce the risk of disputes, misunderstandings, and unnecessary claims.

1. Purpose and Importance

A draught survey is a recognised method of determining cargo quantities loaded on or discharged from a ship, which is performed by comparing a vessel's displacement before and after cargo operations. The calculation is based on draught readings, and takes into account ballast water, consumables, water density, trim, list, and other factors affecting displacement. The difference between the initial and final displacement represents the cargo quantity loaded or discharged.

Accurate draught surveys are essential for verifying cargo quantities, protecting the interests of shipowners, charterers, cargo interests, and receivers, and providing evidence in the event of cargo disputes or claims. Surveys should be conducted diligently, preferably by experienced and independent surveyors. Any irregularities, unusual observations, or concerns should be documented and reported promptly to all relevant stakeholders.

2. Shore Figures vs. Draught Survey Figures

Shore scales and draught surveys use fundamentally different measurement methods:

- Shore figures are based on terminal weighing systems.
- Draught surveys are based on vessel displacement calculations.

As both methods have different tolerances and sources of error, discrepancies may occur even when no actual cargo loss or gain has occurred.

To ensure meaningful comparisons, the same cargo quantity determination method should be used at both loading and discharge ports whenever possible:

- Draught survey in the port of loading → Draught survey in the port of discharge
- Shore figures in the port of loading → Shore figures in the port of discharge

Comparing shore figures from one port with draught survey figures from another should generally be avoided, as it may lead to misleading conclusions. Masters should record and clearly report the measurement method used at each port.

3. Independence and Credibility

MSIG Specialty Marine has noted several occasions where draught survey reports have reflected cargo quantities that exactly match the Bill of Lading quantity, for example 10,000.00 MT, sometimes even to the nearest kilogram or decimal place.

Considering the numerous measurements, assumptions, variables, and corrections involved in a draught survey, the probability of arriving at an exact cargo figure matching a pre-declared commercial quantity is generally very low.



While such a result is not impossible, it requires scrutiny. An exact outcome between the draught survey result and the bill of lading quantity may indicate that:

- the survey has not been carried out with sufficient diligence;
- necessary measurements or calculations have not been properly verified; or
- the survey result has been influenced by, or adjusted towards, a predetermined commercial figure.

Masters and officers should carefully examine survey reports and immediately report any concerns regarding the survey's validity or independence. Draught survey results must always remain an objective determination based solely on vessel displacement.

4. Attendance and Participation

Whenever possible, draught surveys should be attended by all relevant parties, including ships staff, independent surveyors acting on behalf of shipowners and charterers, cargo interests.

Joint attendance during draught readings, tank soundings, density measurements, and calculation reviews improves transparency, strengthens confidence in the results, and helps resolve disagreements before or upon completion of cargo operations.

Attendance, observations, objections, and agreements should be properly documented.

5. Intermediate Draught Surveys

MSIG Specialty Marine advocates performing intermediate draught surveys during loading and discharge operations, particularly for multiple grades, large cargo parcels, or when quantity concerns exist.
The benefits include:

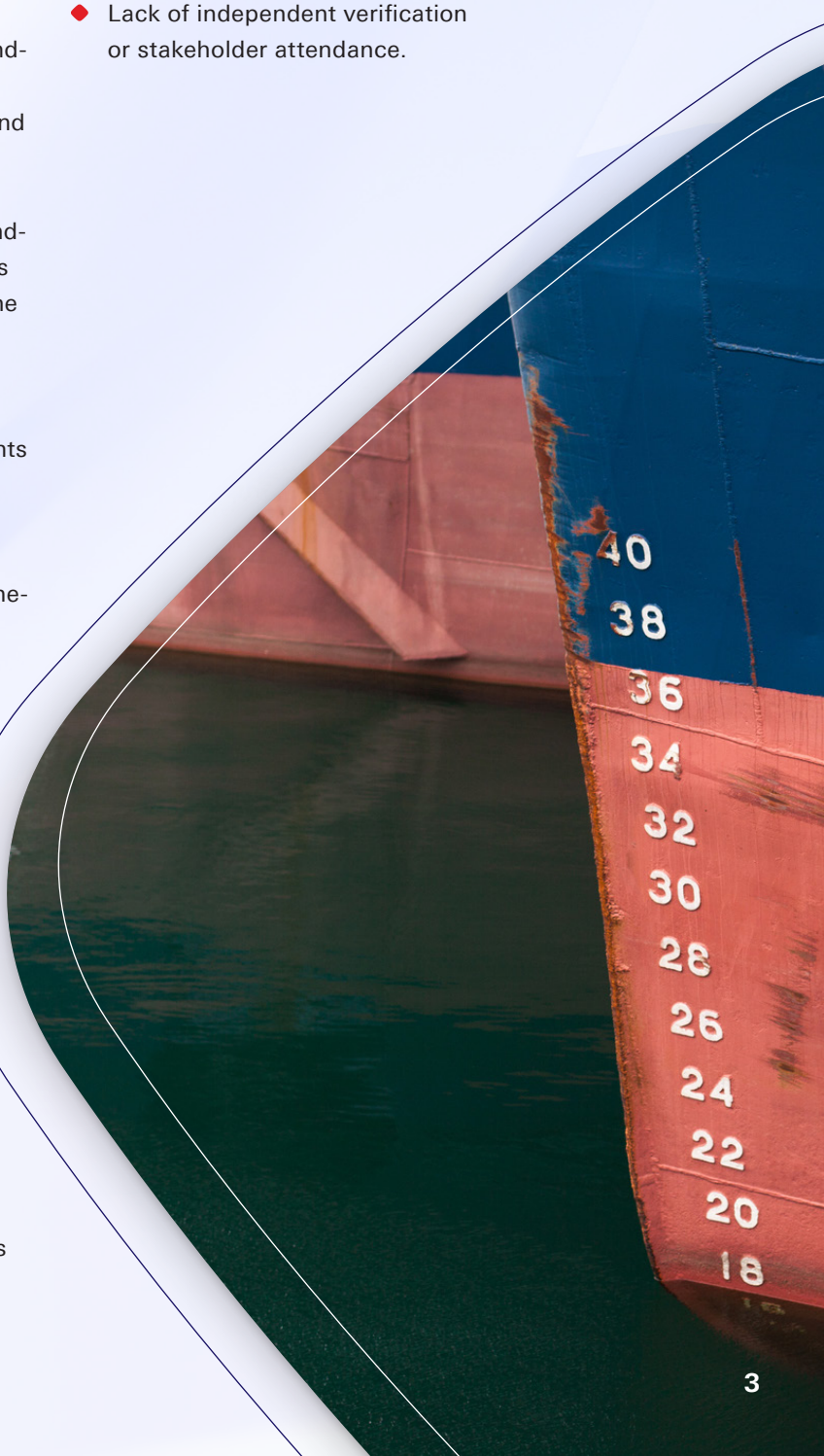
- Early identification of discrepancies;
- Improved cargo accountability;
- Better monitoring of cargo operations;
- Reduced risk of significant outturn differences at completion of loading or discharge;
- Stronger evidence in case of disputes or claims.

Where significant discrepancies are identified during an intermediate survey, these should be investigated immediately rather than deferred until completion of cargo operations. Experience has shown that resolving issues while cargo operations are ongoing is considerably more effective than attempting to reconstruct events after completion.

6. Common Errors and Challenges

The accuracy of a draught survey depends on the quality of the measurements obtained and the diligence applied during the calculation process. Common sources of error include:

- Failure to accurately read all draught marks;
- Inaccurate water density measurements;
- Errors in ballast water, fuel, freshwater, or other tank (sounding) measurements;
- Use of incorrect hydrostatic data or calculation mistakes;
- Unrecorded ballast water transfers or consumable usage;
- Lack of independent verification or stakeholder attendance.



Strong winds may induce heel or alter the vessel's position alongside the berth, while waves and swell can make it difficult to obtain stable draught readings. At exposed anchorages, tidal streams and wave action may cause continuous fluctuations in observed draughts.

Under such conditions, surveyors and ships staff should exercise additional caution and, where necessary, obtain multiple observations to establish representative average readings.

7. Master's Responsibilities

Masters and officers are reminded that draught surveys remain one of the most important tools for protecting the vessel's interests during cargo operations. The survey should be joined by the vessels staff and calculated jointly, in order to avoid discussions on the amount of cargo loaded or discharged. Survey results should never be accepted without appropriate review and verification.

All measurements should be witnessed whenever possible, calculations should be carefully checked, and any discrepancies or concerns should be properly documented and reported immediately to the relevant parties.

Caution should be exercised where survey results correspond exactly to other predetermined commercial figures. Such outcomes are statistically uncommon and should prompt further review of the survey methodology and supporting calculations.

The transparency, independence, and technical integrity of the draught survey process are essential in minimizing cargo disputes, avoiding unnecessary claims, and ensuring a reliable determination of cargo quantities at both loading and discharge ports.

8. Conclusion

Accurate and independent draught surveys are fundamental to reliable cargo quantity determination. Consistent application of the principles outlined in this circular will help reduce disputes and unnecessary cargo claims.

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