

Marine Newslink



WITH YOU ALWAYS

Volume 5 Issue 3

NEWS

GI Premium Record

PHOTO(S) OF THE MONTH

Oil Cargo Tanks

LEARN MORE

Ship that carries Ships

BACK TO BASICS

Question of the month



FEATURE ARTICLE:

Liquid Bulk Cargo on Ships

Marine Newslink | Issue 3

EDITOR'S NOTE

Oil is the bloodline of the modern world. In fact nothing moves without oil and moving the oil itself, from one place to another, requires specialised ships, specialised methods, special precautions and special calculations. In this issue we are addressing two most important factors that require consideration during oil transportation. In upcoming issues we will endeavour to cover safe methods of transporting Edible Oils & Crude oils during road/rail transportation.

In NEWS we find out the GI industry performance till Jan 2017 & LEARN MORE is carrying the heavy loads.

We look forward to your replies to our Question-of-the-month in Back to Basics and any suggestions & comments that you feel are important for improving the Marine Newslink.

Happy reading....

NEWS

General Insurance industry in India crossed Rs 1 lakh crore premium income at the end of January 2017, registering a growth of 32 per cent aided by growth in crop and property Insurance.

According to the data from the insurance regulator, during the first 10 months of the financial year, the industry earned premium income of Rs 1.04 lakh crore, a growth of 32 per cent from Rs 78,709 crore in April-January of the previous year. Standalone health Insurance companies saw income of Rs 4,276 crore during the first 10 months.

State-run public sector Insurance companies had a market share of 46.99 per cent whereas private sector companies were at 42.03 per cent.



LEARN MORE

Ship that carries Ships



Blue Marlin is known as a floating wonder on the seas.

It is a semi-submersible ship that can transport the biggest possible things on this earth. As evident from above photos, the ship is mighty enough to carry 22 barges from their manufacturing base in China to anywhere in the world. The best thing about employing Blue Marlin is that it does not require cranes to lift these humongous cargoes on its deck. It has the capability to sink its deck and then position itself under the floating cargo and when de-ballasted the deck rises, lifting the cargo along. Rather than using lashing methods for such huge cargoes,

welding procedure is employed to weld cargo directly to the deck of Blue Marlin.

In its epic history Blue Marlin has transported complete oil rig (weighing 60,000 MT) and USS Cole, a naval destroyer from Yemen to United States. Specifications: Length: 224.8 m (738 ft) / Beam (deck width): 63.1 m (207 ft) / DWT Tonnage: 76,061 DWT

Other known sister ships are:
Dockwise Vanguard
Mighty Servant 1
Mighty Servant 2
Mighty Servant 3

PHOTOS OF THE MONTH



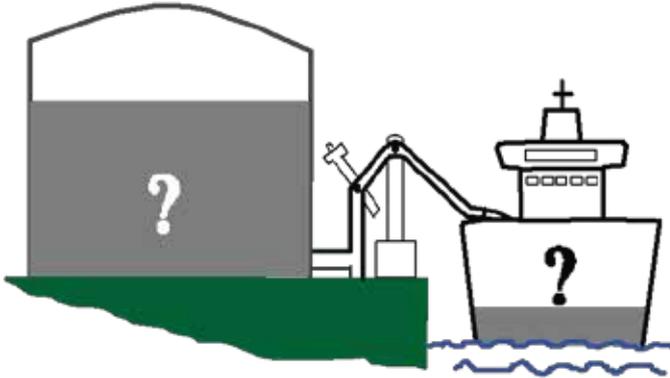
Oil cargo tank of ship



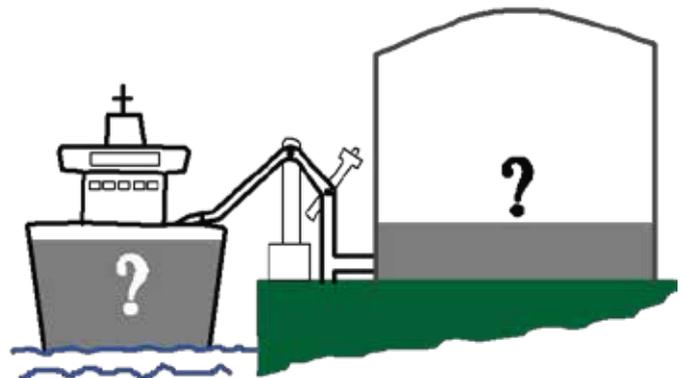
Suction valve of oil cargo in ship's tank

LIQUID BULK CARGO ON SHIPS

LOAD PORT



DISCHARGE PORT



How much? (Quantity)
Of what? (Quality)

The two major threats of any oil cargo transportation are

- 1) QUALITY or deterioration of cargo
- 2) QUANTITY or oil shortages on out-turn

Though Quality issue can be handled with technical backups but Quantity, especially short-turn Quantity or easily described as Shortage of cargo becomes an issue.



It is of vital importance that during transfer of liquid bulk cargoes, there is an accurate cargo measurement procedure to prevent potential cargo shortages and good sampling practices to prevent potential cargo contamination as well as understanding the cargo characteristics with respect to the previously loaded cargoes, tank preparation required and tank coating compatibility.

CARGO CONTAMINATION

Cargo contamination could be of either ship or shore origin. If we consider the cargo loading and discharge cycle, a ship must first be prepared with suitably clean tanks to load the cargo; then a correct loading sequence using the minimal number of lines and valves and each grade properly segregated from non-compatible grades; then transported at the correct temperature and carriage requirements; then discharged ashore in the correct sequence to the correct shore tank.

Shore side contamination may occur due to a number of factors such as incorrect hose connection, manifold line ups, wrong grade/shore tanks used, different grade cargo remains in the shore lines, incorrect shore pipeline line setups, shore tank cleanliness, line plugs where a shore pipeline is filled with a different grade and used to push the existing cargo on-board, valve failure or incorrect segregation. However this can be easily determined by using correct sampling methods and laboratory tests. Also it must be kept in mind that Contamination is different from off-specification.



CARGO SHORTAGE

Oil shortages are probably the largest source of cargo claims and are largely attributed to "paper" losses. A 'paper' loss may occur as a result of the overstatement of the quantity loaded (inaccurate B/L), understatement of the quantity received in shore tanks, calculation and measurement errors in producing the B/L and errors in measuring the shore tank(s).

Four identified areas of potential cargo losses are

- 1) Load port loss
- 2) Transit loss
- 3) Discharge port loss
- 4) OBQ (on-board-quantity)/
ROB (remain-on-board) loss

Shortages often occur due to result of inaccuracies in measurement and calculation system for the quantification of oil cargo. It is quite common to see old petroleum tables (Table 6) being used at load port and new IP tables being used at disport or vice-versa. Not only is there incompatibility between such results obtained with respect to volume of the cargo but also between the tables used & the datum temperature to which the volume is corrected. It is widely known that when comparing the new measurement tables with the old; a discrepancy will occur due to the calculated exaggerated volume with the use of the old tables.

The second important area of cargo shortage is the inevitable difference between B/L (Bill of Lading) figures and Ship's figures. B/L figures being calculated from shore tank measurements or inline flow metres. Here it is important to account for the cargo in for shore pipelines. In today's tanker operations, the length of these pipelines can be anywhere between few meters to few kilometres. A marginal difference between shore and ship's figures is however acceptable but for differences that may not be acceptable, ship's VEF (Vessel Experience Factor) can play a major role. VEF, simply put is historical record of differences between shore & ship figures. It is a factor which indicates a ship's calibration error and will vary over the life of the ship, the cargoes it has carried in past, accumulated

sediments and scales, alteration and de-scaling in dry-docks.

These factors can provide inaccuracies in the determination of OBQ/ROB quantities, which again will have bearing on the actual volumes, loaded and discharged.

Following factors should be kept in mind while loading & unloading oil cargoes

- 1) Measurements (Ullage or Sounding)
- 2) Density
- 3) Temperature (of the cargo): this single factor can cause claimable QUANTITY & QUALITY issues.
- 4) Volume expansion factor/Vessel Experience Factor/Shore tank Experience Factor
- 5) Weighbridge variation: Uncalibrated weighbridges or variation in weighbridge can lead to shortages
- 6) Calibration errors: Shore tanks or ship's tanks are not properly calibrated or the thickness and length of pipelines are not measured properly
- 7) Multiple handling: If barges are used at load port & discharge port, this increases the risk of shortages & contamination
- 8) Adherence/cling age: If the temperatures are not maintained properly, the solidified cargo can cling to tanks and pipelines leading to shortages
- 9) Errors in gauging/measurement (Instruments): Non-calibrated or wrong instruments can cause all types of errors
- 10) Errors in sampling/ gauging/ measurement (Personnel): Unqualified or untrained personnel or taking measurements when ship is experiencing bad weather thus allowing cargo to not settle in tanks.

Each of above factor is subject to random & systematic errors. In extreme cases these factors introduce an element of uncertainty in the calculation of +/- 0.13 volumes. It is therefore necessary to try to minimise this uncertainty to achieve a reasonable level of accuracy.

Errors associated with measurements are normally due to:

- 1) Improper measurement technique
- 2) Use of non-standard measurement equipment
- 3) Insufficient accuracy when gauging
- 4) Wave motion inside tanks (Sea berths)



ULLAGES/SOUNDING

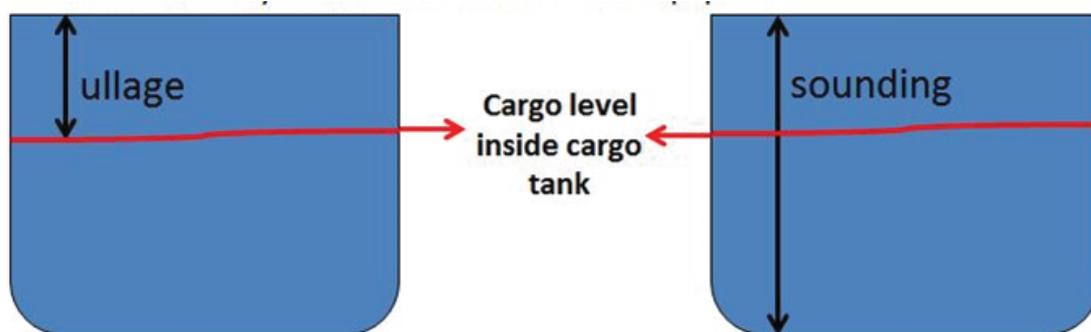
Ullage is taken using automatic tapes, electronic equipment's or manual equipments. Even though newer ships are fitted with most modern equipment's, surveyors tend to use manual measurement methods. A basic reason for same is that surveyors cannot determine if any

exposed to sea swells, wherein the cargo surface will form a crest and traverse the tanks in wave form.

This can result in wrong ullage readings. Ullage at such Sea Berth tend be on low side, indicating a

MEANS AND METHODS OF QUANTIFICATION - LIQUID

- Shore Tank Gauging- Either by ullaging or sounding
- Ship Tank Gauging- Either by ullaging or sounding
- Weighment- Physical weighment over weighbridges
- Volumetric- By flow meters or some such equipment



correction factor has been applied to these computerised onscreen figures. Thus while taking these manual readings, it is prudent to compare the manual readings with automatic readings, ensure all the manual equipment's are calibrated and in good working order.

Temperature inaccuracies have the greatest impact on cargo calculations. As a thumb rule, an error in measurement of 1°C introduces an error into the calculation of up to 0.1% of the volume. ASTM & IP tables have laid down proper guidelines with regard to temperature measurements. Any performance should be checked against these standards.

NOTE: Tanker terminals are usually built at outer seas and when a ship is at such as Sea Berth, it is

higher level of cargo in the tanks than actual quantity.

Quantifying liquid cargo remains a challenge and with increasing trade and faster turnaround times, some factors take backseat resulting in cargo claims.



BACK TO BASICS

QUESTION OF THE MONTH



Every importer in India, has to file a BOE (bill of entry) with the customs for every cargo imported to the country. Similarly for export, they have to file a document with customs. What is that document called?

LAST MONTH'S QUESTION & ANSWER

QUESTION



An exporter in India had an open policy covering exports –both FOB and CIF. FOB shipments were extended with ‘Seller’s Interest’ Clause extension till port of discharge. A particular consignment which was under LC (letter of credit) was on FOB terms. The B/L was a clean one. When the goods were on high seas the ship sunk and cargo was a totally lost. The buyer abroad forgot to insure this cargo. Will Indian insured gets the claim under ‘Seller’s Interest’ Clause?

ANSWER



The claim is not payable as the export is an LC shipment and his payment is guaranteed by the bank.

CORRECT ANSWERS SENT BY:

- ✓ Mr. Bharat Bhushan - Optima Insurance Brokers, New Delhi
- ✓ Mr. Rohit Srivastava - Cadila Healthcare Limited, Ahmedabad
- ✓ Mr. Bhavit Acharya - Beacon Insurance Brokers, Vadodara
- ✓ Mr. Alope Mukherjee - Edelweiss Insurance Brokers Ltd., Kolkata
- ✓ Ms. Hema Raghav - Optima Insurance Brokers, New Delhi
- ✓ Mr. Rohan Dinesh Lodaya - Insurance World, Vadodara



IF YOU HAVE ANY COMMENTS / FEEDBACK PLEASE SEND IT TO

Shioram Balachandran
Business Head - Marine
Shioram.Balachandran@tataaig.com

Vijay Pal Singh
Marine Loss Control (India)
Vijaypal.Singh@tataaig.com

CONTACT US

Tata-AIG General Insurance Company Limited,
Peninsula Business Park, Tower A, 15th Floor,
G.K.Marg, Lower Parel, Mumbai 400013.
www.tataaiginsurance.in



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