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Bulk Sugar Loading in Thailand - Loss Prevention

1.0 INTRODUCTION

Thailand is one of the largest raw sugar exporters in the Asia and the Pacific region. The Republic of Korea and China is Asia's largest refined sugar exporter. Recent trends suggest that Thailand is gaining ground on some of its competitors in the export of raw sugar.

CJA Marine Services (Thailand) Co. Ltd has carried a number of bulk sugars loading in Thailand and wish to highlight that this particular commodity for export is under strict control by local authorities.

The sugars in bulk were either mostly loaded at the wharf at Laem Chabang or at Koh Si Chang anchorage or a combination of both location (part loading at wharf and part loading at anchorage). Bagged sugars are mostly loaded at Bangkok or Koh Si Chang anchorage.

CJA Marine's surveyors have encountered the following experiences and wish to highlight the following loss prevention concerns:-

2.0 VESSEL SELECTION / CARGOWORTHINESS

More often than not, the vessel selected or chartered are somewhat old and their cargoworthiness as well as their integrity of the watertight hatch covers are always questionable or in doubt. Hence, a Hose test would customarily be carried our by a competent surveyor.

Hose Test on Hatches

For older ships (say between 6 and 15 years old) or ships which appear to have poor maintenances, it is recommended that all water ballast tanks adjacent to cargo holds should be pressed up until they overflow on deck. The bilge suctions should also be tested.

For ships that are older than 15 years and above, it is recommended to obtain the copies of the UT gauging report before hand.

3.0 VESSEL HATCH CLEANLINESS AND DRYNESS

When the cargo discharge operations of a cargo hold is completed, the vessel's Chief Officer will need to decide how, when and if the hold is needed to be cleaned. Cargo holds should always be cleaned and dry in preparation for the next nominated cargo to be loaded.

Cleaning of the cargo Holds would be much more difficult if quantities of cargo sweepings still remain in the vessel's cargo hold(s), particularly if the bulk cargo is not soluble in water. In this circumstances, the ship's duty officers should do all they can to persuade the stevedores and trimmers to discharge all the sweepings remaining on board. If a bilge cover plate has been displaced and the bulk cargo has filled the bilge, the trimmers will be unwilling to remove it. If they cannot be encouraged to do so, it is the carrier's duty to get all the bulk cargo out of the bilge(s) before the finish of cargo discharge operations, so that the contents of the bilge can be discharged along with the rest of the cargo.

Hence, a hatch Cleanliness survey would customarily be carried our by a competent surveyor.

Cargo Hold Cleanliness and Dryness

4.0 SHORE BASE WEIGHING METHOD

The bulk cargo laden on trucks goes through a weighbridge and followed by the same loading into a hopper located below ground, the cargo would then be loaded onboard via a conveyor belt.

Laden trucks on weighbridge

Trucks loading bulk sugar into hopper

Alternatively, the cargo would be loaded in lighters and the same would be towed to anchorage.

Loading into lighter

Another method is a direct loading by a conveyor belt. This device continuously weighs the commodity on a selected length of the loading conveyor belt and multiplies this instantaneous weight value by the belt speed. The signal thus obtained is at all times proportional to the rate of material flow on the belt. Some commercial belt scales rely on magneto-elastic load cells. These devices rely upon the fact that the magnetic characteristics of steel are affected by mechanical stress.

The accuracy of a belt scale depends largely on the design of the conveyor and the way it is maintained. Provided that the conveyor conforms to specified basic requirements for design and operation, an accuracy of better than ± 1 per cent of nominal capacity within the flow rate range is claimed by one manufacturer. Others state that belt weight systems are capable of achieving an accuracy of up to ± 0.1 per cent of true weight for capacities of 10,000 tonnes/hour and can be relied upon for an accuracy of 0.5 per cent. Accuracy is likely to reduce to ± 1.0 per cent if the system is not used to capacity. Shipboard observers consider that inaccuracies rise on occasions as high as 10 per cent of true weight, presumably as a result of failure, or faulty calibration and maintenance.

5.0 CARGO LOSS ARSING TO LOADING

During the trucking process, the nominated trucks should also be clean and dry. Any form of wetting or moisture would result in the bulk sugar caking within the truck's carriage.

The accuracy of the truck driver discharging the bulk cargo into hoppers also plays a vital role. Most of the bulk cargo may go inside the hopper during unloading. However, there are also instances whereby spillages occur out of the hoppers inlet.

The condition of the trucks also plays a vital role as spillage can also occur during the transportation if the tailboard is found defective.

When loading the bulk cargo into lighters, spillage may occur if there is a sudden strong wind. In such an instance, the bulk cargo is blow out of the lighter (river or sea) instead of going into the lighter's cargo Hold.

Grabs used for loading onboard the vessel should be checked thoroughly and ensure that no spillage occurs during the handling and movement of the grabs. Any defects of the grabs would result in a substantial quantum of loss during cargo loading operations (cargo spillage into the sea and on deck). The grabs used should also the clean and dry.

Grab used for loading

6.0 DRAFT SURVEY – WEIGHT OF CARGO BY DISPLACEMENT

The ship's method of ascertaining the quantum of cargo loaded is by means of draft surveys taken before and after the cargo loading operations. With the usage of relevant and necessary data obtained onboard by displacement (the volume and weight of water displaced by the ship), the quantum of cargo loaded can be calculated.

In short, the increase in displacement after loading, adjusted for any change in weights such as ballast, equals the weight of cargo loaded.

Draft survey

Sounding of Ballast Tank

7.0 POSSIBLE ERRORS AND ACCURACY BY DISPLACEMENT

There are instances where the draft survey calculations reflects a significant or unexpected difference

The ship’s constant may be found to be much larger than the normal for that ship, or a negative constant may be calculated. The ship's figure for the tonnage of cargo lifted may differ from the shore figure by a significantly large amount.

Draft surveys are displacement quantity based on information and figures provided by the vessel only. If the difference of cargo quantity exceeded -0.5% of the nominated figure of loading, a reassessment of the final draft calculation would required by the nominated surveyor.

Since the discrepancy may be the result of a mistake in the draft readings (parallax error) or soundings, these should be rechecked, if still possible.

If the result remains unchanged it will be necessary to look further for an explanation. All the information used in the calculations must be studied to assess its reliability. It is useful to consider whether the discrepancy has occurred once only or on every single voyage. If it occurs every voyage, then it arises from data which are used every voyage. If it occurs once only, then it is more likely to be caused by something specific to that voyage.

8.0 CARGO CONDITION PROBLEMS

Caking or Agglomeration (sticking together) is would like give rise by relatively high temperatures (above plus 25°C) due to release of water vapour. Bulk sugar should not be stowed near heat sources.

Temperature variations should, as far as possible, should be avoided as the resultant release of water vapour and re-crystallization which may result in caking of the product itself.

Raw sugar with a loading temperature of above plus 48°C should **NOT** be accepted as it may cake on cooling.

Refined sugars are normally dry, free-flowing commodity with very low moisture content. If the sugar is found on delivery not to be free flowing, it is important to ascertain the following:-

- Pressure compacting (for sugar in bags)
- Stickiness or/and
- Caking

*Understanding **RISK** is knowing where to draw the line*

Thank you and Best regards,
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***CJA Marine Services – Singapore & Thailand** is committed to providing first-class quality service to our principals in Project cargo Risk Control as well as Marine & Cargo services to the Marine Insurance Industry, P&I Clubs and to all clients involved in shipping, transportation and logistics.*

For more details about CJA Marine Services, please visit: www.cjamarine.com

P.S: We welcome any comments or suggestion with regard to the above. Kindly e-mail to the writer at raj@cjamarine.com

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