



AVA MARINE

SURVEYORS & CONSULTANTS

Loss Prevention Bulletin – AVA/2013/0001

January 18, 2013

‘Bulk Grain Loading in Rain’

Applicable to: Dry Cargo: Bulk

Region: Western Canada & US West Coast

Category: Loss Prevention – Bulk Cargo Damage Claims

AVA MARINE GROUP INC

Members: AIMU - CMBU - MIABC

Background:

The commercial pressure and sheer burden of responsibilities the Master is faced with in day to day ship operations, especially in port is difficult to comprehend and if not properly informed and advised can give rise to incidents in way of potential cargo claims and losses for P&I clubs.

Observations:

The ports of British Columbia like Prince Rupert/Vancouver and Tacoma/Portland south of the border are known for its unusual meteorological conditions. Generally November to April is considered the wettest months in West Coast of Canada/United States where it experiences relentless rain due to depressions in the Pacific one after the other. This in turn is bad news for the grain shippers/charterers due to port congestion, stockpiling of grain and fear of losing their market competitiveness edge to other ports.

Grain cargo is moisture sensitive with maximum allowable moisture content of about 14%. That being said the ship officers cannot be expected to know about moisture levels/measurements and whether allowing the loading to continue in light drizzle/rain will affect the quality of the grain. This should be the matter for the shippers/charterers – that is to give clear guidelines as to what is acceptable and what is not. Most charterers would have given instructions to Masters for shutting down loading operations at the first sign of rain. Shutting down cargo operations during these extended periods of precipitation would significantly extend the loading operation. Extensive delays (not in hours but days) have occurred due to shutting down cargo operation even when the quantity remaining would be only 500 metric tons to completion.

The stevedores will often insist that it is safe for the loading to continue in light rain and that the other vessels have readily complied under similar conditions without any cargo damage. They will also impose that the dust created by the loading will disperse the rain droplets and the cargo in the hold will not be affected.

Also so called ‘rain letters’ by charterers claiming to provide indemnity to the vessel against any losses for loading in rain should not be accepted - 1) because the cargo is likely to suffer wet damage 2) this will increase the moisture level in the cargo hold – increasing the risk of further cargo damage 3) accepting the rain letter may jeopardize the P&I cover as a result of the member knowingly carrying out loading operations where the risk of cargo damage existed.

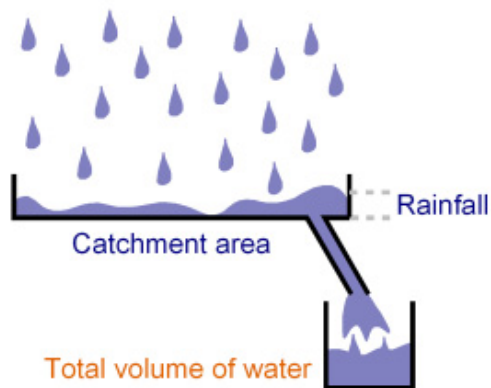
Further, the stevedores may try to intimidate the Master that if the loading is not continued any delays caused will be for the ship owner’s account.

How much is too much?

The question to ask is how much rain is too much? How do you determine that? Rainfall is classified according to the rate of precipitation (rain intensity) as follows:

Category	Rate (mm/hour)
Light Rain	< 1.0
Moderate	1.0 ~ 4.0
Heavy	4 ~ 16
Very Heavy	16 ~ 50
Extreme	> 50

Estimating the amount of water entering the cargo hold can be calculated as follows: From the table above, for an open hatchway (consider this as a catchment area) measuring 19 m x 20 m with moderate rain (falling at a rate of 2.0 mm/hour) the amount of water entering the cargo hold would be about 0.76 m³ (760 litres) or close to 1 metric ton of water.



$$\text{Volume of Rainfall per Hour (litres)} = \text{Precipitation Rate per hour (mm)} \times \text{Area (m}^2\text{)}$$

$$\text{Volume of Rainfall per Hour (m}^3\text{)} = \frac{\text{Precipitation Rate per hour (mm)} \times \text{Area (m}^2\text{)}}{1000}$$

Quick method to calculate this is to remember that one millimetre (mm) of rain falling on one square metre produces one litre of water. In our example above, 2.0 mm of rainfall over 380 m² will produce 760 litres or 0.76 m³. **In other words 0.76 m³ of rain water is entering the cargo hold every hour.**

This may not sound like much when loading 10,000 metric tons of bulk wheat. But considering that the rain continues to fall for a whole 24 hours (not uncommon in Vancouver) - it makes sense not to continue with the loading!

A reduction in the area of the hatch opening will reduce the amount of water entering the cargo holds. That being said loading via the Feeder Holes is an option, however, this is still under discussion as the unions in Vancouver have voiced out there concerns regarding safety issues – however, this is a topic for another time and beyond the scope of this article.

Points to Ponder:

- Undoubtedly the best prevention is simply not to let the cargo be wetted at any stage.
- Avoid accepting ‘rain letters’ or giving-in to stevedores assurances
- Be vigilant - conduct a survey of the cargo condition throughout the loading operation – take samples if possible and if any damage cargo is loaded, clause the bill of lading/mate’s receipts accordingly.
- If the Master is pressured into signing a ‘clean’ bill of lading – consult local P&I correspondent and letters of protest should be issued accordingly. Again bear in mind knowingly signing a “clean” bill of lading may jeopardize P&I cover. (Note: A member’s P&I insurance is subject to the warranties, conditions exceptions, limitations and other terms set out in the rules and the Certificate of Entry)
- Wet cargo will increase moisture content resulting in high humidity levels inside the cargo holds causing cargo damage in way of caking, moulds, germination etc.
- Master is ultimately responsible and should take whatever precautions deemed necessary to prevent cargo damage.

Disclaimer: This loss prevention bulletin is based on the author's own research, knowledge and experience in the subject matter and should only be used for reference rather than being taken as a legal advice for any particular case or used for any other purpose.

About AVA MARINE GROUP:

AVA Marine is a professional marine surveying and consultancy firm – founded and led by its principal marine surveyor Kaivan H. Chinoy. The Company provides a comprehensive range of specialist marine surveying, marine loss control & consultancy services primarily in Western Canada and the West Coast of the United States

To learn more about our marine surveying capabilities, visit our website at ava-marine.com

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