IMRRA's Dry Cargo Newsletter
July 2021

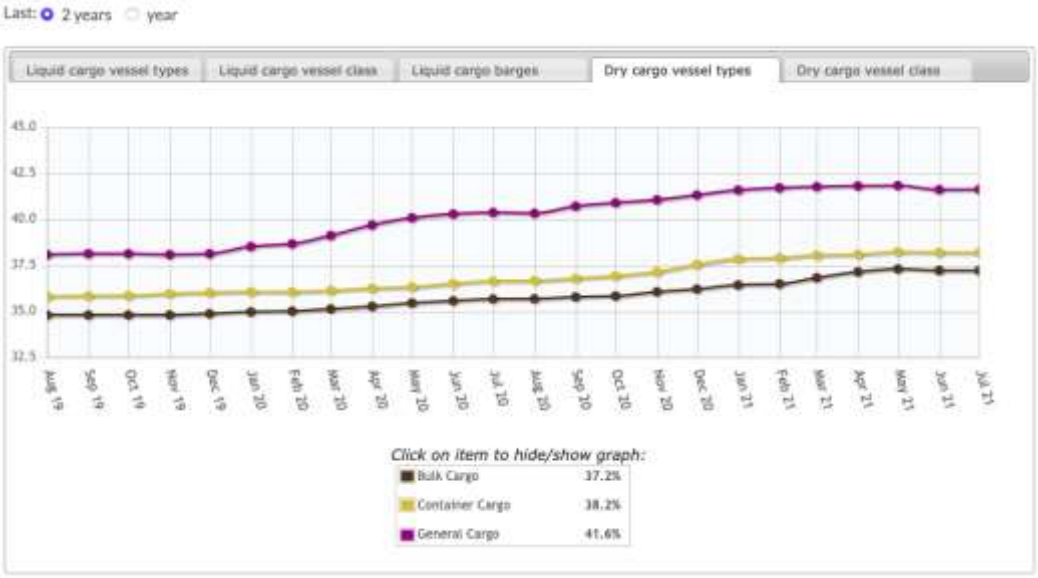
757 Dry Bulk Vessel Safety Risk Ratings
Vessel's Offered for Trade by Age
Incidents by Vessel Type
Why do Dry Bulk Vessels have higher risk ratings?

Introduction:

International Maritime Risk Rating agency screened 757 Dry cargo vessels or 26,379,697 DWT during June 2021. This month's newsletter focuses on the higher comparative risks of working in the Dry Cargo sector, and details some of the reasons why the vessels are higher risk compared to Wet Cargo.

Dry cargo accounts for over two-thirds of maritime trade volumes that are traded, as marinerating.com's newsletter demonstrates, the cargo is transported in higher risk rated vessels when directly compared to the Wet Cargo sector. It is worth noting that marinerating.com offers a direct comparison of Dry and Wet types vis-à-vis each vessel type.

1.1 Marinerating.com's Dry Cargo Vessel Risk Rating Table – The average vessel risk rating for Bulk/Container and General Cargo Vessels has risen over the past 12-months as the table below shows.



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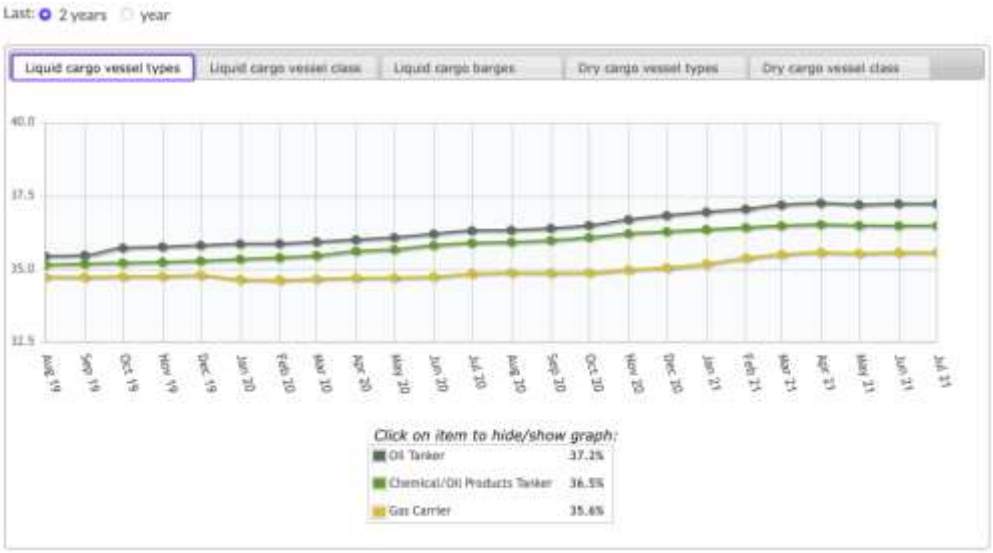
1.2 Wet Cargo Risk Rating Table – The average Dry Cargo Vessel Risk Ratings Compared to Chemical/Gas/Oil Tankers is lower.



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1.3 Table Comparison Risk for All Vessel Types

Ranking	Vessel Type	Ave. Vessel Risk
1	General	41.7%
2	Container	38.2%
3	Bulk	37.2%
4	Oil	37.2%
5	Chemical	36.5%
6	Gas Carrier	35.6%

2. Vessels, Incidents and Under Reporting:

During June 2021, 103 Dry Cargo vessels (General, Container and Bulk Carrier), were involved in incidents.

Vessel Type	Number of Vessels
General Cargo	53
Container Vessel	28
Bulk Carrier	22
Total	103

Typically under reporting of minor incidents and ‘close-call’ accidents is more common within the Dry Cargo sector compared to Wet Cargo.

This is a very different approach to the Wet Cargo vessel safety culture, where external demands and pressures have evolved an information sharing approach to prevent future events.

Higher safety standards are followed on tankers compared to dry ships. Some seafarers understandably feel safer on tankers compared to the Dry Bulk sector which is not as heavily regulated In general, this is reflected with more experienced professional crew, who are often paid more. But,

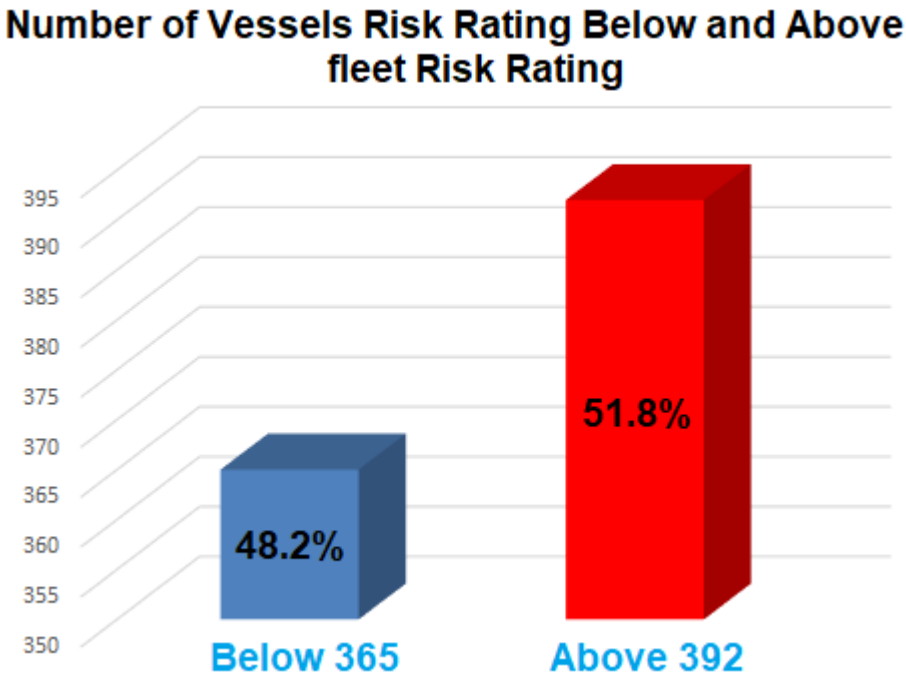
significantly the higher rewards are balanced with an increase in consequences when there are spills concerning oils, chemicals and other substances.

INTERCARGO have stated that during the period January to March 4 2021, there were a significant number of published crew deaths and injuries from 53 incidents involving bulk carriers over 10,000 deadweight.

2.1 Dry Cargo Vessels Operate at a Higher Average Risk Rating Compared to Oil & Gas:

IMRRA identified 392 vessels, 52% of all Dry Cargo vessels risk rated in June 2021, operating with 'Read; or 'Amber' vessel risk ratings on marinerating.com's Red/Amber/Green traffic light risk rating methodology. Conversely Wet Cargo risk rated 26.4% of vessels Red and Amber. The maximum vessel risk rating was benchmarked at 67% during June.

Month	>39%	<39%	Total	Min %	Max %
June 2021	392	365	757	27	67



3. Why are Dry Cargo vessels higher risk rated comparted to their Oil & Gas Equivalents?

3.1 Tankers have higher IMO safety standards compared to Dry Cargo due to Enhanced Inspections

Since 1995 all tankers vessels aged five years and over are inspected to detect deficiencies arising from corrosion, focusing on wear and tear from either age or neglect.

Dry Cargo vessels are playing catch-up when it comes to safety legislation. The International Maritime Organisation is looking at additional legislation, specifically focusing on Chapter XII Safety of Life at Sea (SOLAS) and the 2011 International Code for the Expanded Inspection Program for the surveys of bulk carriers and oil tankers (2011 ESP Code). Gaps have been identified to help reduce the potential of serious bulk carrier accidents.

3.2 Why are Oil tankers designs safer than Dry Cargo?

According to C.B. Barrass, D.R. Derrett, in *Ship Stability for Masters and Mates (Seventh Edition), 2012*

Oil tankers are permitted to have more summer freeboard than general cargo ships with a similar Length Between Perpendiculars. They are considered to be safer ships for the following reasons:

1. They have much smaller deck openings in the main deck.

2. They have greater subdivision, by the additional longitudinal and transverse bulkheads.

3. Their cargo oil has greater buoyancy than grain cargo.

4. They have more pumps to quickly control ingress of water after a bilging incident.

5. Cargo oil has a permeability of about 5% whilst grain cargo has a permeability of 60–65%. The lower permeability will instantly allow less ingress of water following a bilging incident.

6. Oil tankers will have greater GM* values. This is particularly true for modern double-skin tankers and wide shallow draft tankers.

*The metacentric height (GM) is a measurement of the initial static stability of a floating body. It is calculated as the distance between the centre of gravity of a ship and its metacentre

4. Most Traded Vessels Age and Tonnage Profile:

Dry Cargo Charterers demand fewer safety management requirements directly compared to the Oil Industry that has a long history of stringent vessel safety systems that have matured over time.

It is accepted that higher standards are demanded and required by all stakeholders associated with the Oil & Gas industry to prevent oil spill incidents. The age profile of older vessels chartered below is significantly higher than would be the norm for Oil & Gas vessels, where the chartering age profile is capped at 15 years by the Oil Majors.

4.1 Top-three Chartered Vessels by Age & Tonnage Profile Ranked.

Years	<5,000 dwt	5,000-20,000 dwt	20,000-50,000 dwt	50,000-150,000 dwt	>150,000 dwt	Total
≥ 25 years	83 (i)	34	11	0	0	**128**
20-25 years	38	36	20	6	0	**100**
15-20 years	16	29	24	11	4	**84**

10-15 years	19	56	61 (iii)	40	10	**186**
5-10 years	7	32	54	77 (ii)	6	**176**
≤ 5 years	3	8	37	32	3	**83**
Total	**166**	**195**	**207**	**166**	**23**	**757**

4.1 Most traded vessels

i. 25 years old+, 5,000 metric tonnes This age group accounts for 50% of all vessels less than 5,000 dwt and 11% of all vessels offered for charter during June 2021.

ii. 5-10 years, 50,000 to 150,000 metric tonnes 46% of vessels in this tonnage range and 10% of all vessels offered for charter during June 2021.

iii. 10-15 years, 20,000 to 50,000 metric tonnes 29% of all vessels in this tonnage range and eight percent of all vessels offered for charter during June 2021.

5. Why do Dry Cargo vessels have higher risk than their Oil & Gas Equivalents?

5.1. Cargo Liquefaction and the International Maritime Solid Bulk Code (ISMBC)

All cargoes according to the IMSBC Code should be tested and certified to ensure the moisture content is sufficiently low enough to avoid and prevent liquefaction during the voyage.

Cargoes include mineral concentrates, but can often include other cargoes such as coal, fluorspar, millscale, pellet feed etc.

One definition of liquefaction according Gard states dry cargoes '*often look dry in appearance at the time of loading, these cargoes contain moisture in the spaces between the particles. During ocean transport, cargoes are exposed to agitation in the form of engine vibrations, ship's motions and wave impact, resulting in compaction of the cargo. The effect of this process can be a transition from a solid state to a viscous fluid state in which all or part of the cargo can flatten to form a fluid surface*.'

The central problem for shipping companies are inaccurate cargo declarations and certificates that are often the main cause of liquefaction problems.

Summary:

When time is short, IMRRA always recommends Dry Cargo Vessels are risk rated to establish the operating safety of the vessel and the technical operator.

Physical risk verifications are also recommended (if time allows), to establish the physical condition of the vessel and the competency of the crew.

If you have any questions regarding July's Dry Cargo newsletter, do not hesitate to get in touch with me.

Remember to take your free 12-month trial to marinerating.com and exclusive vessel, technical operator and fleet risk ratings are available on marinerating.com. No financial details are taken. Click here: to register.

Regards,

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