

## Polish Register of Shipping classification services on the way to assure bulk carriers safety in sea trade

Bulk carriers play a major role in the global economy. Dry bulk cargoes cover a wide range of products, writes Marek Narewski, Rules Development Department, Polish Register of Shipping (PRS).

The most commonly shipped dry bulk materials are for example: coal, cement, grain, sulphur, fertilizers, iron ore and sugar. These products are generally transported in large quantities in bulk in the typical holds arranged in the construction of the specialized ship — bulk carrier. The portfolio of safety-related services for bulk carriers involved in international trade is provided by class societies associated in IACS, and one of its members is the Polish Register of Shipping (PRS).

Currently designed and constructed bulk carriers and implemented survey procedures present high engineering quality necessary to ensure cost-effective, safe and reliable operation. Based on experience gained from the past, the safety of the current world fleet of bulk carriers is much better, as can be seen in EMSA (European Maritime Safety Agency) or IMO statistics. The progress in safety assurance is the result of parallel class societies efforts and flag states activities related to verification of compliance with international and national regulations. This is particularly important in the case of aged ships that require compliance with business standards requested by shipowners and ship operators to keep required level of competitiveness.

IACS class societies play a vital role in and are committed to the safety of existing and future bulk carrier fleet. According to EQUASIS 2019 the fleet of ships over 500 GT is dominated by ships classed by IACS members (56% by number and 78% by tonnage). In the case of bulk carriers, IACS societies are classing over 83% of the total world bulk carrier fleet. We can expect that the number of IACS classed ships will be on a steady increase both in numbers and in GT. The high rate of IACS classed bulk carriers means that the majority of the world bulk carrier fleet has a major impact on the safety of commodities trade.

Some studies conducted recently touched subjects of prediction of commercial fleet future structure and certain ship types development as well as the rate of new-buildings and scrapping old ships. One of the studies is forecasting that the number of bulk carriers will remain almost constant within the coming three

decades. Considering the maritime safety aspect, EMSA reports contain some statistical data on ship accidents and incidents rates, and these statistics show that the figures for new ships are much better than in the case of old ships.

The ship classification is a special type of business activity where specific and wide expert knowledge and safety considerations are of utmost importance. The basis for classification societies activities are their rules dedicated mainly to shipping industry as well as to specific parts of the oil & gas industry, energy generation, rail & road transport or aviation. PRS as a classification society offers portfolio of services focused mainly on safety assurance. The set of PRS Rules has been developed based upon the society's own experience and is continuously amended by inclusion of own R&D work results, e.g. IMO and IACS requirements as well as other applicable international technical and safety standards.

At present, PRS has over 500 seagoing ships classed and bulk carriers constitute about 16% of all classed ships. The substantial number of classed bulk carriers is of the medium age. PRS experience gained when dealing with older ships enabled the society to elaborate effective and high quality survey services. The last two years PRS was on the list of high performance classification societies of the Paris Memorandum of Understanding on Port State Control. Only classification societies that have a low ratio of detentions by PSC can get on the list of recognized organizations with the high performance result, what underlines the quality of their work and at the same time is one of the determinants allowing a vessel to be the Low Risk Ship. Being high on the performance list of Paris MoU shows PRS' commitment to keeping a high level of services.

Over the years class societies took several steps to enhance the safety of bulk carriers. These have included the introduction of the corrosion protection requirements for ballast spaces, minimum thickness requirements for side shell web frames in cargo areas, tough regime of Enhanced Surveys and most notably the introduction of *Common Structural Rules for Bulk Carriers (CSR)* in 2005 followed by *Common Structural Rules for Bulk Carriers and Oil Tankers (CSR BC & OT)* in 2015. PRS implemented CSR Rules into its own

activity and developed a set of related PRS-CSR software for verification of the bulk carrier strength. The software has been assessed and positively verified according to IACS procedures.

Another important aspect of bulk carriers safety assurance is related to winter navigation in ice-infested waters. Like other class societies, PRS has implemented rules dedicated for seagoing ships that must have a sufficient strength of hull and machinery during navigation where increased risk of damage by brash ice blocks to the propulsion system exists. PRS' practical experience in that area covers also special surveys and repair of damages caused by ice during ship operation.

An example is a serious ice damage that happened a few months ago when a fully loaded bulk carrier suffered failure to propeller blades. Due to circumstances, the only solution to the problem was to conduct repairs underwater at the nearest harbour. The repair was done after detailed underwater inspection, carried out under supervision of a classifier. Damaged blades were cut and straightened by the professional diving and underwater service provider company. Underwater repairs completed fully underwater has been surveyed by PRS and allowed to release the ship to sail fully loaded across the Atlantic.

PRS provides a specially tailored expert service dedicated to ships involved in commodities trade called Condition Assessment Program (CAP). CAP service is already well established within the tanker industry, but is also implemented as vetting practice in case of bulk carriers as a proved method leading to improvement bulk carriers risk assessment. It is an important voluntary service that provides independent evaluation of the technical condition of a bulk carrier. Based upon CAP process results, third parties can assess the suitability of the ship to be chartered and its current condition in relation to its age.

CAP assessment provides a charterer with a technical evaluation of the condition and maintenance of a vessel above standard requirements for a class. It is applicable to bulk carriers of 15 years of age and above. The CAP programme scope covers a detailed survey of the hull structure including verification of gauging as well as extensive testing of ship

machinery, equipment and cargo systems. Gathered information, combined with a strength and fatigue engineering analysis, is transferred into a numeric rating to be assigned to the verified ship — from 1 (Very Good) to 4 (Unsatisfactory).

A specific class activity is related to evaluation of novel technical solutions for implementation in ship technology. Newly developed designs and equipment prototypes are being verified by class societies to be implemented on board of ships using marine engineering practice. Completion of certification process allows for legal introduction of new solutions on ships and is a proof of the compliance with existing sound marine engineering and new

safety and environmental standards as required by law.

Class societies are here to assure that ship technology developments are compliant with the mandatory requirements for technical and operational safety of bulk carriers as well as other ships involved in international trade.

### ABOUT PRS

Polish Register of Shipping (PRS) is an independent expert institution acting on the international market, whose business is conducted for the benefit of the community. Through the formulation of the requirements, survey and issue of the appropriate documents, PRS assists State

Administrations, Underwriters and the Society's clients in ensuring the safety of people, floating objects, land undertakings, the safety of carried cargo and that of the natural environment. PRS is IACS member and acts also as RO upon over 40 authorizations of Flag States.

### ABOUT THE AUTHOR

Marek Narewski is a specialist and expert in PRS R&D Division with wide experience resulting from involvement in number of various marine and offshore R&D projects, novel technologies implementation in ship design and construction including marine application of composites and alternative fuels.

## Progress report: Black Sea Grain Initiative

The Joint Coordination Centre (JCC) was inaugurated in Istanbul on 27 July following the Black Sea Grain Initiative launched by Russian Federation, Türkiye, Ukraine and the United Nations.

From 1 to 15 August, the JCC has authorized a total of 36 movements of vessels (21 outbound and 15 inbound) through the maritime humanitarian corridor in the Black Sea to facilitate the safe exports of grain, foodstuffs and fertilizer, including ammonia, from Ukrainian ports.

During this period, 21 vessels have been authorized to move from the Ukrainian ports of Odesa (11), Chornomorsk (6) and Yuzhny/Pivdennyi (4) under the Initiative. Those vessels are carrying a total of 563,317 metric tonnes of grain and other foodstuffs.

### BREAKDOWN:

451,481 tonnes of corn  
50,300 tonnes of sunflower meal  
41,622 tonnes of wheat  
11,000 tonnes of soya beans  
6,000 tonnes of sunflower oil  
2,914 tonnes of sunflower seed

According to information provided to the JCC, the preliminary destinations of Ukrainian food exports so far include:

- ❖ Turkey: 26%
- ❖ Iran: 22%
- ❖ Republic of Korea: 22%
- ❖ China: 8%
- ❖ Ireland: 6%
- ❖ Italy: 5%
- ❖ Djibouti: 4%
- ❖ Romania: 2%
- ❖ To be determined: 5%

Routes of commercial vessels and cargo



Photo: OCHA / Levent Kulu

ownership are determined through commercial activity and they may change en route. The food en route to Djibouti is 23,000 tonnes of wheat purchased by the World Food Programme (WFP) to contribute to the drought response in Ethiopia as part of the WFP's humanitarian operations.

From 1–15 August, the JCC has conducted a total of 27 inspections through its joint inspection teams on inbound and outbound vessels. All ships inspected so far were cleared.

As part of its responsibilities, the JCC has been closely monitoring the inbound and outbound movement of vessels through the maritime humanitarian corridor in the Black Sea. It has so far observed on two occasions vessels deviating from the corridor and it has responded appropriately by contacting captains and advising them to follow the co-ordinates.

The JCC is also providing pre-transit briefs to inbound masters during the inspection process in Istanbul. The JCC continues to assess and review the procedures put in place to ensure the safe passage of vessels through the maritime humanitarian corridor.

The Black Sea Grain Initiative aims to respond to high food price inflation and to global food insecurity which is at record levels with tens of millions of people at risk of famine. According to the UN's Food and Agriculture Organization, Ukraine contributes about 10.3% and 12.6% of global exports of wheat and maize respectively. Its share for sunflower products (seeds and oil) is 48.2%. Restarting exports will free up storage space in Ukraine and avoid wastage. It will also ensure a supply chain of food for this and subsequent harvests.

The deal aims to improve global food supply and calm markets. Prices across different food commodities are volatile and can be subject to a range of economic and climatic influences that go beyond Ukrainian exports.

### Terminology:

**Outbound:** merchant vessels departing the ports of Odesa, Chornomorsk and Yuzhny (Pivdennyi) heading to Istanbul

**Inbound:** merchant vessels departing from Istanbul heading to the ports of Odesa, Chornomorsk and Yuzhny (Pivdennyi)