



*me*<sup>\*</sup>  
SAFETY AND LEADERSHIP



European Marine Equipment Council

*me*<sup>\*</sup> = Marine Equipment by EMEC

# Summary

1. Introduction to the European Marine Equipment industry	3
2. The importance for competitiveness	4
3. Overview of the maritime safety regimes and measurements of performance	6
4. Recommendations for improvement	8
5. Dedication to maritime safety	10
References	11

This document introduces the European marine equipment industry and presents its contribution to safety, innovation and competitiveness of European industry. This document is a production of the European Marine Equipment Council in cooperation with Erasmus University Rotterdam.

# 1. THE EUROPEAN MARINE EQUIPMENT INDUSTRY

The “European Maritime Cluster” comprises the whole range of European maritime activities: shipbuilding and repairing yards, maritime transport operators (seagoing, short sea, inland navigation, fisheries, dredging), offshore oil and gas industries, marine contractors, Navies, service providers, ports, yacht building, etc. The marine equipment sector plays a fundamental role within this cluster. It encompasses all products and services supplied for the building, conversion and maintenance of ships through their whole life.

The production goes from the fabrication of steel and other basic materials to the development and supply of engines and propulsion systems, of cargo handling systems, general machinery

and associated equipment, environmental and safety systems, electronic equipment incorporating sophisticated control systems, advanced telecommunications equipment and IT.

The marine equipment sector provides services in the fields of engineering, installation, commissioning and ship maintenance. Products and services of marine equipment amount to the 70% of the value of a vessel, with peaks of 85% in the case of cruise ships. With its wide range of product and services, the marine equipment industry provides an essential contribution to the whole marine value chain and to the activities of all stakeholders in the cluster: from shipbuilding and ship repair to port infrastructure and operation and the ship/shore interface.



The Maritime Cluster.

## 2. THE IMPORTANCE FOR COMPETITIVENESS



The European Marine Equipment industry is leading in the development of new technology for the world wide shipbuilding sector. The maritime manufacturing industry generates highly integrated, very complex products requiring a remarkable amount of scientific knowledge as well as intelligent manufacturing technologies. Ships are the largest mobile objects under manufacture, and their long life-cycle together with their high level of safety and operating autonomy in a generally hostile environment make them one of

the most sophisticated capital goods for investment.

The European marine equipment industry invests a significant amount of resources in R & D in order to provide added value products and services. It maintains its leading position on the global market through competing on innovation and quality. The mere competition on prices is not sufficient to win the trust of the demand and gain leadership of the market: ship-owners want to rely on the highest possible levels of safety



and efficiency. It is the mission of the marine equipment industry to deliver products and services which can meet the expectations of ship-owners while protecting the environment, life at sea and the cargo.

A continuous renewal of product and process technologies through R&D activities, benchmarking and market research, including ever improving technical co-operation in the maritime supply chain, stimulates the European marine equipment industries.

The goal of R&D is not only delivering better products, but also the best possible quality-price trade-off while satisfying the strictest standards of safety, operability and environmental responsibility. The European marine equipment industry is also capable of improving existing standards, defining new rules and models for the fleet of the future, thus anticipating the action of regulators.

Improvements in the production process and a focus on life cycle management are also key factors in the innovation strategy. Marine equipment suppliers play a key-role during the building period of the ship; however, they are equally responsible for the whole life time support.

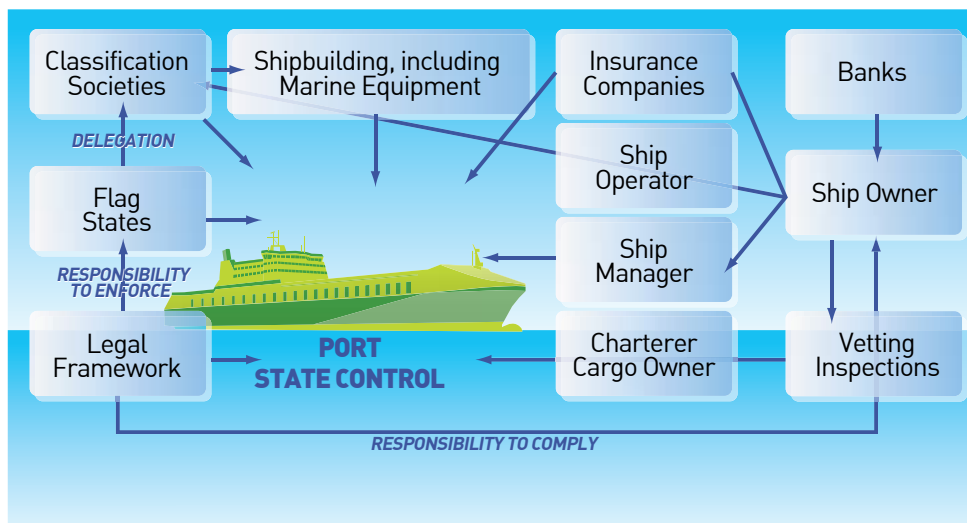
The European marine equipment industry is capable of satisfying the expectations of ship-owners and operators for operational reliability and low costs, ensuring that in no case, the safety of transport is compromised. Maritime transport operators demand ease of operation and support equipment, as well as first class worldwide equipment services and repair networks.

The European marine equipment industry gained leadership in the world arena through their capacity of meeting the demand's need for innovative, reliable, safe and high-quality product and services. The competitiveness of the sector is reflected also in its impact on employment. Direct employment in the marine equipment sector is estimated at more than 287,000, whilst indirect employment amounts to about 436,000.

# 3. OVERVIEW OF THE MARITIME SAFETY REGIMES AND MEASUREMENTS OF PERFORMANCE<sup>1</sup>

Figure 1 [1] provides an overview of the various players of the safety regime and indicates what kind of legal frameworks can be found on the international and country or region-specific level<sup>2</sup>.

The results of various econometric analysis performed by Erasmus University indicate that the safety system are successful in eliminating substandard vessels with an average effect of decreasing the probability of a very



**Figure 1: Players of the Safety Regime in general.**  
Source: Knapp and Franses (2006)

Classification Societies provide the technical expertise during ship building and technical maintenance of the vessel and also act as recognized organizations on behalf of the registry.

serious casualty by an estimated 5-10% per inspection [2] and average insurance claims costs are substantially lower for inspected vessels than not inspected vessels.

In addition to port state control to eliminate substandard vessels, industry inspections are performed but there is no cross recognition of inspections. It leaves the industry with a high level of inspections to the detriment of the crew onboard vessels where total inspections are estimated to be at 11 inspections per year for tankers, 6 for dry bulk carriers and 5 for all other ship types.

However, the results also indicate that the economic conditions of the shipping market also have an effect on safety quality besides the frequency of inspections. With respect to the effect of ship particular variables towards the probability of a ship being detained, the results of the effect of flag, class, ownership and other variables of interest across various port state control regimes indicates that for most

<sup>1</sup>Paragraph 3 presents an overview of the summary of research activities conducted by Knapp and Franses (2006, 2007) from Erasmus University Rotterdam and was based on a unique dataset of 183,000 port state control inspections from six port state control regimes, ship particular information, casualties and vetting inspection information. Standard econometric techniques are used to produce either the probability of detention or casualty and show an overview of the effectiveness of inspections and to see whether it can be improved.

<sup>2</sup> This could be for instance the "acquis communautaire" for the European Union or OPA 90 for the US or any other country specific legislation.



variables, no substantial difference of performance of e.g. flag or class across regimes [3] can be observed (i.e. there is no indication that class performance in Europe have a different effect on the probability for a ship to be detained, that class performance in Asia or America).

The results further indicate that the effect of a port state control inspection versus vetting inspections does not significantly differ [1] in decreasing the probability of casualty. In addition,

there seems to be a lack of proper implementation of the International Safety Management Code (ISM code) and conventions with reference to working and living conditions of crew (ILO 147).

## 4. RECOMMENDATIONS FOR IMPROVEMENT



The system could be made more effective [4] by combining data sources on inspections and use them respectively to improve risk profiling and to decrease the frequency of inspections performed on certain ship types. A revision of the ISM code and more emphasis on enforcement of ILO 147 could further enhance the level of safety at sea. In light of the importance of marine equipment for safety, one could further enhance the cooperation of marine equipment suppliers. At the moment, there is no direct cooperation between inspections and the marine equipment industry.

The European marine equipment industry, thanks to its continuous efforts for research and development, is able to deliver to ship-owners around the world products and services guarantee-

ing the highest standard of safety and environmental protection, being the main actor, together with the shipyards and the crew manning a vessel, for a sustainable, efficient and safe sea transport. Through its capacity of innovating and developing know-how, the European marine equipment industry ensures – at the same time – that navigation can take place in the safest conditions for men and the environment and that regulators, at international and national level, can define the best standards and practices for the shipbuilding industry worldwide.

The role of the European marine equipment industry is finding recognition in the activity of EU law makers. The new Class Directive, whose object is the definition of new rules on the activities



of classification societies, will contribute to the definition of a new, harmonized regulatory environment for the ship-building sector.

EMEC, the European Marine Equipment Council, has supported the proposal for a new Class Directive since the beginning of the legislative process. Consulted by the Commission and the European Parliament, EMEC insisted on the importance of progressive harmonization of class rules, provided that harmonization is based on the highest available standards. At the current stage of the legislative process, European lawmakers have taken into account EMEC's proposition and included them in the text of the Class Directive.

When approved, the measure will – at the same time – increase the overall safety standard for hulls and marine equipment and foster the competitiveness of the European marine equipment industry, which will operate in a regulatory which will favor the most efficient and proactive players in the field of safety.

An important additional element of the new Class Directive is the proposal to start work on mutual recognition of certificates. At this stage, marine equipment needs approval by classification societies, as part of the ship's classification, by means of a certificate. However, certification is not mutually recognized amongst the different classification societies, not even amongst the relative small group of European recognized class societies<sup>3</sup>. This further means that a supplier of marine equipment needs to seek multiple individual certifications with each class society once a new product has been developed, the moment he wants to sell the product within or outside Europe. The multiple certification process hinders the development and distribution of new products of European marine equipment.

Since the research of Erasmus University has not shown that class performance in Europe have a different effect on the probability for a ship to be detained, than class performance in Asia or America, there is currently no reason to assume that mutual recognition has a negative effect on the safety level as such. By seeking the highest standard available, it is anticipated that the level of safety will increase.

<sup>3</sup> Classification societies who may act on behalf of a European flagstate.

## 5. DEDICATION TO MARITIME SAFETY



The capacity of constantly innovating and developing modern, safer and environmentally efficient products and services, puts the European marine equipment industry at the forefront in the challenge for safety and health and environmental protection in maritime transport.

The European marine equipment industry is capable to anticipate regulatory changes and to promote the adoption of its innovative solutions by regulators at the international level. All technical innovations and standards, while incorporated in statutory and class rules, are conceived and developed primarily by the equipment industry which is, together with the crew manning a vessel, the first and main responsible for safety and environmental protection.

Thanks to its large investments in R & D, the European Marine equipment industry is able to supply all public and private bodies responsible for the definition and enforcement of safety regulations with an essential know-how on maritime safety. Solutions and standards generated by the industry are incorporated into sector regulations and class rules, improving the capacity of fleets around the world to ensure the

safest exercise of maritime transport.

The ability of the European marine equipment industry to constantly develop new and safer products and services is the main factor for its capacity to compete and lead the sector at world-wide level. The advantages for the whole maritime community are evident, since a significant contribution in terms of information and new technologies are made available to regulators to define the general standards of safety and environmental for all new ship.

Safety is not something that should be redefined each time an accident occurs. Instead it is, and should be, integral to the sector's culture – a part of its very fabric and being. This is what we are striving to achieve in the European marine equipment industry.

Safe products mean safe and reliable ships; it also means safety for those working on board and safety for the environment.

The European Marine equipment industry maintains the focus on safety at all times as this is the key to its competitiveness and commercial success.

# REFERENCES

[1] **Knapp, S. and P.H. Franses**, Comprehensive Review of the Maritime Safety Regimes - Present Status and Recommendations on improvement, 2007-Nr. 19: <https://ep.eur.nl/handle/1765/10097>

[2] **Knapp, S. and P.H. Franses**, Econometric analysis on the effect of port state control inspections on the probability of casualty, *Marine Policy*, 2007; Volume 31, Issue 4, pages 550-563

[3] **Knapp, S. and P.H. Franses**, A global view on port state control - econometric analysis of the differences across port state control regimes, *Maritime Policy and Management*, 2007, 34(5), pages 453-483

[4] **Knapp, S.**, The Econometrics of Maritime Safety - Recommendations to enhance safety at sea, Thesis - Erasmus Research Institute of Management, Erasmus University, Rotterdam, 2006

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