

# The Present and Expected Changes in Maritime Safety, Security and Defense Functions

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**ABSTRACT:** In this paper, an attempt has been made to present the subject and state of the three main functions of each maritime country; these are: the maritime safety, maritime security and maritime defense functions. There have been also discussed the subjects of these functions as well as the reasons and process of the closest and closest cooperation between these functions, and even the merger of these functions in one maritime function, i.e. in the maritime safety, security and defense functions Especially quickly proceeds the merger of the maritime security and maritime defense functions in one maritime function, i.e. in maritime security and defense function.

## 1 INTRODUCTION

Each maritime country have to realize three main maritime functions, these are:

- maritime safety;
- maritime security;
- maritime defence.

Maritime safety is the safety of life and property at sea from the environmental and operational threats, as well as the safety of maritime environment from pollution by the ships. On the national level the maritime safety is being achieved as the result of the existing maritime safety legal framework; operating the global and regional navigational infrastructure, but mainly as the result of operation of the highly specialized maritime operational services. Each maritime country possess not less then 10 different kinds of maritime operational services. Most important of them are the following:

- ships classification, survey, certification and inspection services;
- aids to navigation service;

- hydrography and navigational information service;
- search and rescue (SAR) service;
- marine environment protection service;
- combating the environmental pollutions service;
- Vessel Traffic Services (VTSs);
- ensuring the security of the ships and port facilities service, etc.

The maritime security is the security from the terrorism, piracy and similar threats, as well as effective interdiction of all the illicit activities on sea such as pollution of the marine environment; illegal exploitation of sea resources; illegal immigration; smuggling the drugs, persons, weapons and other matters that can be used for terrorist activities. The maritime security is achieved mainly as the result of the operation of the proper national maritime services such as: Coast Guard, maritime police, Customs services, Immigration services and some other [Dyrcz, 2005], [Jones, 2006], [Walczak, 2004].

It should be added that in this paper the term “Coast Guard” means the national maritime security service responsible for realization of the maritime

security function. However, these services only in the United States and Canada are named as Coast Guard [www.uscg.mil.]. In the Member States of the EU, there exist different names of the national maritime security services, such as: Border Guard, Maritime Police, Maritime and Coast Guard Agency (MCA) [www.mcga.gov.uk.] and many others. Also the scope of tasks that realize these services differ considerably in the each particular Member States of the EU. The above is the result of the historical tradition of the development of these services. The European Union considers that the above situation is not favorable for the closer cooperation of the security services of the Member States of the EU. Therefore, the European Union tries to unify these services, i.e. to unify not only their names but also the scopes of the competences of these services. [ec.europe.eu/maritime\_affairs.]

The maritime defense is the constituting part of the national military defense. Maritime defense for the Member States of the EU is the defense of national territorial integrity; defense of the sea lines of communication and other national maritime assets; contribute to the peace and security in the different world's areas; and assists the national security services in the crisis and distress situations. Ensuring the maritime defense is the main objective of naval forces [NSA, 2002]. These forces include the different kinds of combat ships and craft, aircraft, as well as the Autonomous Air Vehicles (UAV) and Autonomous Underwater Vehicles (UUV), and others.

In the not distant past the above mentioned functions, i.e. maritime safety, maritime security and maritime defense functions were realized by the organizational structures (maritime operational services: Coast Guard and Navy) that operated absolutely separately. They, of course, assisted each other but only in the very difficult situations.

However now, but more precisely, in some last years, the above mentioned situation began to change. These changes express themselves in the new situation of the national maritime services. The main national operational services, i.e. the Coast Guard and Navy, have been constrained to cooperate closer and closer, and even they have begun to realize the tasks that constituted not their own functions. The most characteristics function in this respect is the maritime security functions that besides the Coast Guard or similar services, has begun to be realized also by the navy and other maritime operational services.

The main reason, and at the same time the turning point of the above changes was the outbreak of the Global War on World Terrorism (SEP of 11<sup>th</sup>, 2001).

The above process of closer and closer cooperation of the main national maritime services did not cease to exist but it continues to develop and becomes more and more important.

Taking the above situation into consideration the conclusion can be drawn that besides the global threat of terrorism, there must exist also some other important reasons that result in the stepwise integration of the maritime safety, maritime security and maritime defence functions in a kind of the new super function, i.e. in the integrated function of maritime safety, security and defence [Kopacz, 2004], [Kopacz, 2005], [Kopacz, 2006].

Below, there are presented the following issues:

- reasons of the present changes in the main national maritime functions;
- present state of the maritime safety, security and defence functions;
- expected changes in the maritime safety, security and defence functions.

## 2 THE REASONS OF THE PRESENT CHANGES IN THE MAIN NATIONAL MARITIME FUNCTIONS

The main changes in the maritime safety, security and defense functions express themselves mainly in the following situation:

- maritime security tasks that in the past were realized by the Coast Guard or similar security services, there are being now, in higher and higher degree, realized also by the two other services, i.e. by the national operational services and by the navy,
- the tasks of the maritime defence that in the past were almost exclusively realized by the navy, are now being realized, in higher and higher degree, by the other maritime services, i.e. by the national operational services and by the Coast Guard (or similar security services), however mainly by the last ones.

It should be also mentioned that the issues of maritime safety begin to be the exclusive issues of national operational services and begin to be also the issues of two other main maritime services, i.e. Coast Guard and Navy. It is the result of the permanent growth of danger of pollution of marine environment by the ships, and the necessity of prevention such pollution, as well as combating the consequences of pollutions if they occurred.

The main reason of the above mentioned changes in the maritime safety, security and defense functions is not only the outbreak of the maritime terrorism in the world's dimension. This factor is of

course the decisive factor of the changes being now underway. However, the outbreak of world's terrorism has also in high degree intensified the influence of many other factors of the present changes in the main maritime functions. These factors have the economic, political, military and social character, and have come into existence long before the outbreak of Global War on World Terrorism. Below we will try to enumerate the most important factors of the present changes in maritime safety, security and defense functions.

Collapse of the Soviet Military Block and coming into being the multipolar world with its religious, ethnic, national and other conflicts. The collapse of this military block resulted also in very considerable decreasing the probability of the military conflicts between maritime countries. Decreasing the probability of outbreak of the military conflicts between different countries results also from many other reasons that they will be discussed below.

“Further polarization between the world of the wealth” and the “world of the destitution”. This process generates also the very unstable geographical regions in the respect of maritime security. In these regions exists very high level of terrorist attacks' threat, piracy threats as well as threat of ships capturing and their abduction. To the region of very high security risk belongs now such region as Persian Gulf, Arabian Sea, areas of Indian Ocean off the Horn of Africa (Somali's coast). The Gulf of Guinea (Africa's West Coast) [Peterson, 2007]. The high risk of piracy attacks exists also on the approaches to Malacca Strait and on the South China Sea.

Fast growing the new economic, political, military and social world's regions, such as the European Union, China, India and Brazil, very fast change the world situations that existed before. These new world's geographical regions result also in the decreasing the role of the United States not only in the economic aspect but also in the political and military aspects. The United States are loosing also stepwise their role as the world's military and sea power.

The further fast process of globalization express itself also in the very fast growing the international commerce, and in transportation by sea. The world economy is tightly interconnected. Over the past four decades, total sea borne trade has more than quadrupled. 90% of the world trade and two-thirds of its petroleum are transported by sea. The searoutes and supporting shore infrastructure are the lifelines of the modern global economy. They are visible but very vulnerable symbols of the modern distribution strategy [www.navy.mil/maritime/Maritime\_Strategy].

Process of climate change results also in the ecological and social disasters. Hence, the necessity of development crisis response capabilities to response to these kinds of maritime calamities.

Very fast progress of science and technologies, especially in such technologies as global positioning and global communication technologies and many other information technologies, is very favorable for ensuring the maritime safety and security but it also facilitates the terrorist activities. This progress facilitates also proliferation of nuclear weapon as well as other kinds of weapons of mass destruction (WMD) that can become also the weapons of terrorists.

### 3 PRESENT STATE OF THE MARITIME SAFETY, SECURITY AND DEFENSE FUNCTIONS

For the Member States of the European Union the main criterion of the distribution of the areas of realization of the maritime safety, security and defense functions between the main maritime services, constitutes the geographical location of the realization areas towards the own coast:

- in the areas close to the own coast, the functions of the maritime security and maritime defence have been realized by the Coast Guard and other security services, and Navy;
- in the areas located far from the own coast, the functions of the maritime security and maritime defence have been realized by the naval forces, mainly in the form of the maritime security operations (cf. CTF – 150) [en.wikipedia.org/wiki/Maritime\_Security\_Operations], [en.wikipedia.org/wiki/Combat\_Task\_Force\_150].

However, as it was already mentioned, the above principle regards mainly the maritime countries of EU and maritime countries being the members of NATO. However, it can be also assumed that the above principle regard also the United States and their main maritime forces, i.e. Marine Corps, Navy and Coast Guard [www.navy.mil/maritime/Maritime\_Strategy].

The maritime safety function in European Union and in its Member States is being realized on the three levels of maritime safety management [Kopacz, 2001], [Kopacz, 2006]:

- the first and the highest level of management constitutes the International Maritime Organization. It creates the legal and operational basis for maritime safety and security of the whole shipping industry;

- the middle level of maritime safety management constitutes the Vessel Traffic Monitoring and Information System (VTMIS) of the European Union. Main objective of such System is to considerably increase the maritime environment protection from pollution by ships and enhance the level of maritime security on the sea areas of the European Union [Urbański, 2007];
- the lowest, i.e. the national level of maritime safety management constitutes the network of the maritime operational services.

In Figure 1, there are shown the institution, legal instruments, systems and services that realize the maritime safety function.

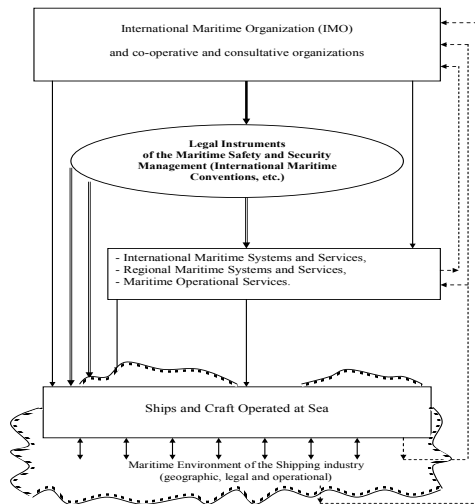


Figure 1. Institutions, legal instruments, systems and services of the maritime safety function.

The maritime security function is not the new main maritime function. However, the importance of this function, i.e. the amount of its tasks and the significance of these tasks of this function have grown incomparable after the 11<sup>th</sup> of SEP, 2001. This function, as was already mentioned, is being realized now by all the three main maritime services, i.e. by the maritime operational services, Coast Guard and Navies. There exist two main kinds of geographical areas in which this function is being realized. First kinds of areas constitute the maritime areas of each Member State of the EU. The second kinds of areas are the far-away areas where exist very high risk for maritime security. In the first kind of maritime areas the maritime security function is being realized by the Coast Guards and Navies of the Member States of the EU. In the second kind of areas the maritime security function is being realized mainly by the navies of maritime states operating in these areas, mainly in the form of Maritime Security Operations conducted by the maritime NATO forces or the EU forces.

It should be added that in the relation to the shipping industry the maritime security function constitutes together with maritime safety function one

compound function, i.e. the maritime safety and security function of the shipping industry. In Figure 2, there are shown the main means and ways of the realization of the compound maritime safety and security function of shipping industry on the maritime areas of the European Union.

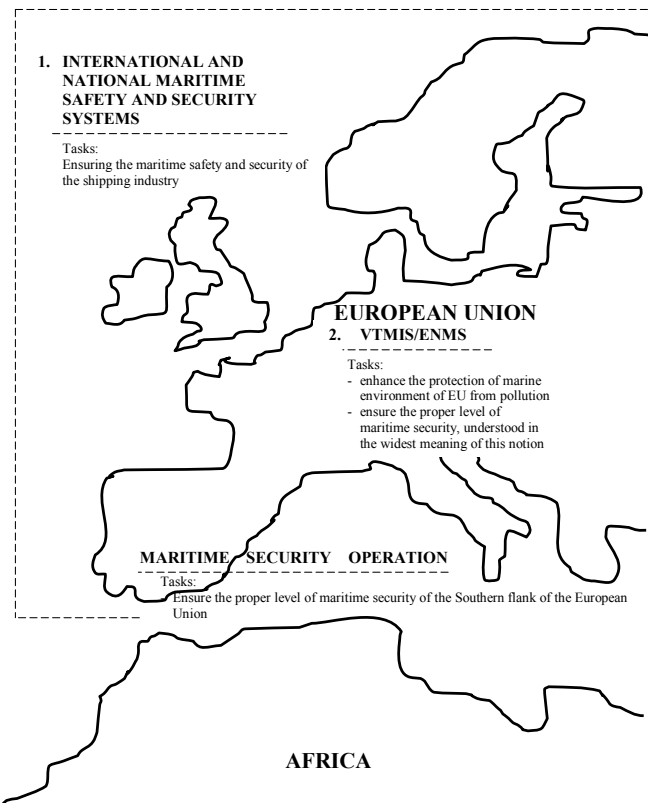


Figure 2. The main means and ways of realization of the compound maritime safety and security function on the maritime areas of the European Union.

The United States “National Strategy for Homeland Security” (July 2002) [[www.whitehouse.gov/homeland/book](http://www.whitehouse.gov/homeland/book)] in the following way defines the Critical Mission Areas of this function:

- intelligence and warning;
- border and transportation security;
- domestic counterterrorism;
- protecting critical infrastructure and key assets;
- defending against catastrophic threats;
- emergency preparedness and response.

The above critical mission areas of the maritime security function have the general character and therefore they fully regard all Member States of the European Union.

The United States “National Strategy for Maritime Security” (September 2005) [[www.dhs.gov/xlibrary/assets/HSDD13\\_Maritime\\_Security\\_Strategy](http://www.dhs.gov/xlibrary/assets/HSDD13_Maritime_Security_Strategy)] defines the following threats for this security:

- national-state threats;
- terrorist threats;

- transnational criminal and piracy threats;
- environmental destruction;
- illegal seaborne immigration.

The United States “A Cooperative Strategy for 21<sup>st</sup> Century Seapower” (October 2007) is the common strategy of all the three maritime military services, i.e. Maritime Corps, Navy and Coast Guard [[www.navy.mil/maritime/Maritime\\_Strategy](http://www.navy.mil/maritime/Maritime_Strategy)]. This strategy defines 6 core capabilities. Two of these capabilities, i.e. 5<sup>th</sup> and 6<sup>th</sup> can be considered as the core capabilities that concern the maritime security, they are:

- maritime security;
- humanitarian assistance and disaster response.

The maritime security capability is defined as the creation and maintenance of security at sea is essential to mitigate the threats short of war, including piracy, terrorism, weapons proliferation, drug trafficking, and other illicit activities. Counteracting these irregular and transnational threats protects the homeland security, enhances global stability and secures freedom of navigation for the benefits of all nations.

The maritime defence function, as was stated above, is being now closer and closer integrated with the maritime security function, but these two functions penetrate also each other and begin to create one function, i.e. maritime security and defence function.

The subject of the maritime defence function, in relation to the maritime Member States of the European Union and the NATO had been already presented and discussed above. Therefore, we want and will try to discuss shortly the subject of, also already mentioned, the new maritime strategy, i.e. “A Cooperative Strategy for the 21<sup>st</sup> Century Seapower” [[www.navy.mil/maritime/Maritime\\_Strategy](http://www.navy.mil/maritime/Maritime_Strategy)]. It is the strategy of all three maritime military services of the United States.

From the substance and content of this strategy can be concluded that this Strategy is not only the maritime strategy of the United States’ Seapower but also the strategy of all the political and military partners of the USA. This Strategy defines, as was mentioned, 6 core capabilities that comprise the essence of the US maritime power and reflects an increase in emphasis on these activities that prevent war and build partnerships. There are defined 6 following capabilities of the US Seapower:

- forward presence;
- deterrence;
- sea control;
- power projection;
- maritime security;
- humanitarian assistance and disaster response.

The last two core capabilities have been already discussed. Therefore below, we will try to discuss the first 4 core capabilities of the US Seapower.

The above first 4 core capabilities are in the reality 4 maritime military strategies, i.e. the navy operational concepts. Two of these strategies existed already in the past (2<sup>nd</sup> and 3<sup>rd</sup>). However, two other strategies (1<sup>st</sup> and 4<sup>th</sup>) are considerable new. The strategies are forward presence (1<sup>st</sup>) and power projection (4<sup>th</sup>) have been formulated and applied by the US Navy and Marine Corps in the last 16 years. Initially these strategies were called as: ”... From the Sea” (1992) and “Forward ... from the Sea” (1994).

The “Deterrence” strategy (2<sup>nd</sup> core capability) was formulated and applied during the cold war. It was especially relevant with regard to the use of nuclear weapons. Now, the concept of “Deterrence” strategy express the truth but mainly the US military policy that “preventing the war is preferable to fighting wars”. The “Sea Control” strategy (the 3<sup>rd</sup> core capability) that very often is also called “Command of the Sea” strategy is one of the oldest maritime strategies. It was formulated and applied already during the age of the sail.

The presented all the 4 core capabilities of the Marine Corps, Navy and Coast Guard, together with 2 other core capabilities discussed before (“maritime security” and “humanitarian assistance and disaster response”) constitute the essence of the US “A Cooperative Strategy for 21<sup>st</sup> Century Seapower”.

#### 4 EXPECTED CHANGES IN THE MARITIME SAFETY, SECURITY AND DEFENSE FUNCTIONS

In the above two sections of this paper there have been presented the realization of the maritime safety, security and defense functions in national, regional and international dimension. Also the threats being the subjects of the activities constituting these functions have had mainly the economic, political, military and social character. However, it is evident that in 21<sup>st</sup> century, besides of the above threats, there are more and more frequently expected other kinds of threats, i.e. natural and other threats that have the global character. Such threats are called the “global calamities”. The natural calamities constitute also the component part of the global calamities. There have been commonly agreed that the following calamities are considered as the global calamities [[www.unitedcats.worldpress.com/2007/10/11/ten\\_global\\_calamities](http://www.unitedcats.worldpress.com/2007/10/11/ten_global_calamities)]:

- terrorism;
- climate changes;

- emergent diseases (some contentious forms of incurable virus diseases);
- wars;
- volcanic eruptions;
- asteroid/planet – death from the above;
- methane release (from the continental shelves);
- doomsday devices (nuclear, chemical, biological, etc.);
- strange matter experiments (that can result in global catastrophe);
- aliens (creatures from the outer space).

As the natural calamities are considered the following [[http://wiki.answers.com/Q/what\\_are\\_the\\_natural\\_calamities](http://wiki.answers.com/Q/what_are_the_natural_calamities)]:

- earth quakes;
- floods;
- famine;
- volcanic eruptions;
- landslides;
- fires;
- hurricanes;
- tornados;
- ice storms, etc.

The natural calamities are not the new events. They were known since ever. However, the frequency and intensity of these calamities are becoming now higher and higher. That is the result of the climate change. To the global calamities that are manageable, i.e. that might be prevented or whose results might be mitigated, belong the first four global calamities; these are:

- terrorism;
- climate change;
- emergent diseases;
- wars.

Among the global calamities the most dangerous for our planet – Earth and for humans' existence on it, is the climate change. The climate changes, but especially the permanent increase of the temperature, i.e. the global warming, result in the following:

- melting glaciers and land ice (and therefore, in thermal expansion of the water);
- sea level rise;
- changes in the rainfall and evaporation;
- increasing the intensity of natural processes, especially geomorphological processes in the coastal zone, and others.

Preventing the climate change and other global and natural calamities but also economic and social calamities (and mitigating their harmful influence, are tried to be achieved, in global dimension, in the following ways [Sachs, 2005], [Sachs, 2008], [[www.un.org/genonto/bp/enviro.html](http://www.un.org/genonto/bp/enviro.html)]:

- reduction of the emission of the Greenhouse Gases (GHG), mainly CO<sub>2</sub>;
- combating the extreme poverty and civilization backwardness;
- protection of the environment (land and maritime) from pollution;
- protecting the biodiversity (land and maritime);
- ensuring the sustainable economic, development, and others.

Taking the above facts into consideration we can draw the following conclusions regarding the expected changes in maritime safety, security and defence functions:

- there exists almost the certainty to assume that such global calamities as terrorism and climate change's effects will be growing permanently and will constitute the main dangers and threats that must be prevented, avoided and mitigated by the maritime safety, security and defence functions;
- the maritime security activities and measures will in higher and higher degree constitute the essence not only maritime security function but also maritime safety and maritime defence functions;
- the permanently growing dangers and threats, being the effects of the expected natural and global calamities will and must result in the situation that the crisis/calamities response readiness and its efficiency will constitute the main component not only of the maritime security function but also the maritime safety and maritime defence functions.

## 5 CONCLUSIONS

This paper has been presented the main issues of the functions of maritime safety, security and defense of today and tomorrow. The authors tried to show the main issues constituting the subject and contents of these functions not only today but also in the nearest future. They tried also to show the state of realization of these functions both in the European Union and in the USA. There has been also undertaken the efforts to present the most probably changes' reasons that could influence the realization of these functions and could modify the substance and main tasks of the discussed functions.

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