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**KYSTVAKTEN – NORWEGIAN COAST GUARD****Keywords:** Norway, maritime areas, coast guard

It is difficult to find a country in Europe as sea oriented as Norway. The country is surrounded by the waters of the North Sea from the southwest, Skagerrak from the south, the Norwegian Sea from the west and the Barents Sea from the northeast. Due to its geography, Norway has one of the longest and most extensive coastlines in the world. The country also comprises 50,000 islands, the largest of which is Spitsbergen in the Svalbard archipelago. Continental Norway encompasses 323,772 km<sup>2</sup>. The country's total area, including Svalbard and the island of Jan Mayen, is 385,017 km<sup>2</sup>. 95,000 km<sup>2</sup> of Norway's territory (this includes Svalbard and Jan Mayen) lies in the north Polar Circle. Its continental shoreline is 25,148 km long. If we include the islands, the number increases to 83,281 km.<sup>1</sup>

**NORWEGIAN MARITIME AREAS**

The shape of the coastline and the fact that Norway comprises many islands, contributes to the size of the Economic Exclusion Zone (EEZ) and Fisheries Protection Zones (FPZ). It consists of:

- EEZ of the continental area – 965,065 km<sup>2</sup>,
- FPZ of *Svalbard* – 860,805 km<sup>2</sup>,
- FPZ of the Jan Mayen Island – 293,083 km<sup>2</sup>,

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1 BarentsWatch, accessed on 3.01.1018, [www.barentswatch.no](http://www.barentswatch.no); "Norway's maritime borders", accessed on 3.01.1018, [www.barentswatch.no/en/articles/Norways-maritime-borders](http://www.barentswatch.no/en/articles/Norways-maritime-borders).

Smutthavet (Banana Hole) – an area that is officially a part of the Norwegian continental shelf (the jurisdiction of the state within the shelf is more limited than in the Exclusive Economic Zone. For example, natural resources which belong to the state include mineral resources and other inanimate resources of the seabed and its underground, as well as living organisms belonging to sedentary species, i.e. organisms that are ready for being fished, or remain motionless on or below the seabed, or are unable to move in other ways than being in constant physical contact with the seabed or its underground. In this case, the state is considered not to have any fish resources) that is located between the EEZs of the continent and the island of Jan Mayen, over which jurisdiction was obtained as a result of the decision of the Commission on the Limits of the Continental Shelf on March 2009<sup>2</sup> – 317,546 km<sup>2</sup>.

Smutthullet (Loop Hole) – 67,100 km<sup>2</sup>. The area was included into the EEZ under an agreement with Russia on the delimitation of maritime areas.<sup>3</sup>

Svalbard needs some additional explanation. The archipelago, which is surrounded by the Greenland Sea from the west, the Barents Sea from the east, and the Arctic Circular Pool from the north, for centuries was no man's land (Latin: *terra nullis*). It was not until 1871 that Sweden (with which Norway was in union) asked if the annexation of this territory would lead to any claims from other countries. Russia, in a diplomatic note, said at the time that it would not approve of such a move.<sup>4</sup> After World War I, Norway, taking advantage of Russia's weakened position, raised the issue at a peace conference in Versailles in 1919. The "Big Five" (United States, Great Britain, France, Italy and Japan) appointed the so-called Spitsbergen Commission and charged it with examining the problem and finding a solution. The islands were ultimately recognized as part of Norway, while retaining the right of other countries to conduct business and research in the area. The new status of the archipelago was legitimized by the Spitsbergen Treaty signed on February 9, 1920 (coming into force on August 14, 1925) by 12 countries. To date, it has been ratified by 44 countries. Poland joined the Treaty on September 3, 1931, but strengthened its position by first establishing a permanent meteorological station on the islands.<sup>5</sup>

It should be emphasized that the waters around Svalbard, or rather the scope of Norway's jurisdiction, are subject to controversy within the international community.

2 BarentsWatch, accessed on 3.01.2018, [www.barentswatch.no](http://www.barentswatch.no); „Smutthullet og Smutthavet”, accessed on 3.01.2018, [www.barentswatch.no/artikler/Smutthullet-og-Smutthavet/](http://www.barentswatch.no/artikler/Smutthullet-og-Smutthavet/).

3 Trond Lepperød, *Knep russere i Smutthavet*, accessed on 4.01.2018, [www.nettavisen.no/nyheter/innenriks/knep-russere-i-smutthavet/1110865.html](http://www.nettavisen.no/nyheter/innenriks/knep-russere-i-smutthavet/1110865.html).

4 Thor B. Arlov. “The Discovery and Early Exploitation of Svalbard. Some Historiographical Notes”, *Acta Borealia* 22 (2005), 1: 3–4.

5 Mariusz Karwowski, *Polska w krainie wiecznego zimna*, accessed on 12.01.2018, [https://forumakademickie.pl/fa-archiwum/archiwum/2001/02/artykuly/16-polska\\_w\\_krainie\\_wiecznego\\_zimna.htm](https://forumakademickie.pl/fa-archiwum/archiwum/2001/02/artykuly/16-polska_w_krainie_wiecznego_zimna.htm).

Norway maintains that it has the right to designate a 200-nautical-mile Fisheries Conservation Zone around the archipelago (which was legitimized by a governmental act in 1977). According to Norway, the right enshrined in the Spitsbergen Treaty that allows other countries to conduct economic activity and scientific research refers only to the islands that the agreement mentions, and a 4-mile wide belt around them, not to the whole Svalbard Zone and the Exclusive Economic Zone of the archipelago (which overlaps with the Fisheries Conservation Area). This position is accepted by most countries, with the exception of Russia, which claims that economic freedom is to be shared not only on the islands and within their four-mile radius, but also on the waters of the Spitsbergen shelf. Russia does not recognize Norwegian functional rights with respect to the Svalbard Fisheries Protection Area, stating that the legal status of these waters is not officially defined. This is demonstrated by the incident that took place in 2005 and concerned the *Elektron* trawler. The ship was intercepted by the Norwegian Coast Guard patrol boat *Tromsø* for an on-board inspection. Russian fishermen were accused of possession of illegal fishing gear and non-compliance with the regulations protecting certain sizes of fish. The skipper of the unit was ordered to head towards a Norwegian port in the company of two Coast Guard inspectors. However, while crossing open sea, *Elektron* suddenly set a return course and headed towards Russian territorial waters. The Norwegians, despite having the right to do so, did not use force. The Russian crew later claimed that they took action at the behest of their authorities, which ordered the skipper not to give in to Norwegian orders and to return to Russia. However, the controversy has not been resolved and currently has the potential to lead to conflict.<sup>6</sup>

On the other hand, it should be mentioned that in 2010, Norway and Russia, after 40 years of negotiations, finally settled the dispute over their sea borders. They argued over maritime areas covering 175,000 km<sup>2</sup> (around 12% of the Barents Sea), which are especially attractive for fishing. The parties agreed on an equal (in terms of size) division of disputed territories. The agreement, apart from clearly demarcating the border, also included two annexes: one recognizing the transboundary natural deposits as shared and permitting only joint Russian-Norwegian exploitation, and the other specifying the rules of fishery.<sup>7</sup>

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6 Mariusz Mieczkowski, „Status granic morskich Svalbardu oraz interpretacja Traktatu Spitsbergeńskiego z 1920 roku z perspektywy dzisiejszego Międzynarodowego Prawa Morza”, *Meritum* 1 (2009): 239.

7 Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean; Annex I to the Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean; Annex II to the Treaty between the Kingdom of Norway and the Russian Federation concerning Maritime Delimitation and Cooperation in the Barents Sea

Norway also owns two islands in the Antarctic: Bouvet Island and Peter I Island. What is more, Norway laid claims to Queen Maud Land in Antarctica. Bouvet Island (which has an active volcano) is located in the South Atlantic about 1,750 km off the coast of Antarctica, 2,500 km from Cape Town in South Africa and 4,800 km from Cape Horn. It has an area of 49 km<sup>2</sup>. Peter I Island (Peter I Øy) can be found in the Bellingshausen Sea. It is located around 430 km off the coast of Antarctica. It has an area of 249.2 km<sup>2</sup>. Queen Maud Land (Dronning Maud Land) is an area of approximately 2,700,000 km<sup>2</sup> stretching from 20° W to 45° E (The Norwegians have not officially specified the extent of their claims to the south, but it can be assumed that, like others, they consider the tip of their sector to be the South Pole), between the British Antarctic Territory in the west and the Australian Antarctic Territory in the east. The name of the area commemorates Maud Charlotte Mary Victoria, wife of the Danish prince Christian Frederik Carl Georg Valdemar Axel (1872–1957), who ruled Norway as Haakon VII from 1906.<sup>8</sup>

Among Norwegian maritime resources, oil and natural gas deposits play the most important role (about 6000 oil wells were drilled: 4996 in the North Sea, 836 in the Norwegian Sea and 168 in the Barents Sea). Norway is currently the sixth-largest gas producer and 13<sup>th</sup> largest producer of crude oil in the world. In 2016, oil and gas exports gave Norway a total revenue of 350 billion kroner, constituting 37% of the value of en bloc exports (47% of the value of exports of goods). The stability of the commodity market and the maintenance of the undisturbed operation of erected mining installations are, therefore, of paramount importance for maintaining a high level of Norway's social, economic and political security.<sup>9</sup> In an unfavourable political and military situation, however, sea mining can turn into the element of critical infrastructure of the state which is most difficult to protect.

In turn, the value of exports of fishery products and the closely related processing industry is estimated at around 48 billion NOK, which is a significant part of the state's revenue. In addition, these branches play an important social role, which in a welfare

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and the Arctic Ocean, accessed on 17.02.2018, [www.regjeringen.no/globalassets/upload/ud/vedlegg/folkerett/avtale\\_engelsk.pdf](http://www.regjeringen.no/globalassets/upload/ud/vedlegg/folkerett/avtale_engelsk.pdf).

8 World States, accessed on 22.01.2018 [www.worldstates.org](http://www.worldstates.org); *Norwegian Antarctic Territory*, accessed on 22.01.2018 [www.worldstatesmen.org/Queen\\_Maude\\_Land.html](http://www.worldstatesmen.org/Queen_Maude_Land.html); *Regjeringen*, accessed on 22.02.2018 [www.regjeringen.no](http://www.regjeringen.no); "Norwegian Interests and Policy in the Antarctic, Meld. St. 32 (2014–2015) Report to the Storting (white paper)", accessed on 22.02.2018, [www.regjeringen.no/contentassets/cef2a67e958849689aa7e89341159f29/en-gb/pdfs/stm201420150032000engpdfs.pdf](http://www.regjeringen.no/contentassets/cef2a67e958849689aa7e89341159f29/en-gb/pdfs/stm201420150032000engpdfs.pdf).

9 Norwegian Petroleum, accessed on 22.03.2018, [www.norskpetroleum.no](http://www.norskpetroleum.no), "Oil and Gas Exports", accessed on 22.03.2018 [www.norskpetroleum.no/en/production-and-exports/exports-of-oil-and-gas/](http://www.norskpetroleum.no/en/production-and-exports/exports-of-oil-and-gas/).

state is an extremely important issue.<sup>10</sup> The two aforementioned examples clearly show that Norwegians have good reasons to protect their maritime territories. A specialized formation called the Coast Guard (Kystvakten) is dedicated to this task.

## FROM FISHERIES SURVEILLANCE SERVICE TO THE COAST GUARD

Norway gained independence in 1905, breaking the union with Sweden and offering the crown to Danish Prince Christian Frederik Carl of the house of Glücksburg, who took the name Haakon VII. In 1906, the young kingdom expanded its territorial waters from 3 to 4 nautical miles, which was at the time a widely accepted number by naval powers that were as big as 4 nautical miles (the so-called Scandinavian concept, also recognized by Denmark and Sweden). However, the first steps to enforce this move were not taken until 1911, when the first British trawler was seized. The task of protecting fisheries was at the time given to the navy (during the union with Sweden, the Norwegian province had autonomous armed forces, including the fleet), although the Ministry of Fisheries also participated in financing patrol vessels (a state office performing administrative and control functions for fisheries has been continuously present in Norway for around 500 years).<sup>11</sup>

After the First World War, units optimized for control and inspection tasks, which were either adapted fishing vessels or ships modelled on them, began to enter service. The first was *Michael Sars* in 1924 (also performing the role of a research vessel), then *Fridtjof Nansen* in 1930 (structured similarly to a whale hunting ship. It sank in 1940 after running aground in the vicinity of Jan Mayen Island). In 1937, vessels *Nordkapp* (it was later used by the Norwegian Navy in exile during Second World War; it served as a military ship until 1954 when it passed onto civilian hands and finally, renamed to *Tor Hugo*, sank in 1972 in West African waters) and *Senja* (it was captured by a German destroyer-class ship on 9 April 1940 and was sunk three days later by a British plane; it was again raised from the seabed by the Germans and renamed *Löwe*; from 1945 it again flew the Norwegian flag but was withdrawn from active duty in 1954; it passed onto private hands and served until 1975) were called into service.<sup>12</sup>

10 Food and Beverages, accessed on 22.02.2018, [www.bizvibe.com](http://www.bizvibe.com), “Norwegian Seafood and Fish Industry Statistics”, accessed on 22.02.2018, [www.bizvibe.com/blog/norway-fishing-industry-largest-exporter/](http://www.bizvibe.com/blog/norway-fishing-industry-largest-exporter/), accessed on 22.02.2018.

11 Bowen L. Florsheim, “Territorial Seas – 3000 Years Old Question”, *Journal of Air Law and Commerce*, Vol. 36 (1970): 80.

12 Forsvarets Museer, accessed on 10.03.2018, [www.forsvaretsmuseer.no](http://www.forsvaretsmuseer.no); “Oppsynstjeneste fra 1906”, accessed on 10.03.2018, [www.forsvaretsmuseer.no/Marinemuseet/Sjoeforsvaret-organisasjon-avdelinger-og-drift-1814-2016/Kystvakten/Oppsynstjeneste-fra-1906](http://www.forsvaretsmuseer.no/Marinemuseet/Sjoeforsvaret-organisasjon-avdelinger-og-drift-1814-2016/Kystvakten/Oppsynstjeneste-fra-1906).

After the Second World War, protection of fisheries was initially the responsibility of the maritime civil administration. However, in the 1950s, the number of poaching incidents in the waters of western Norway, caused by Soviet trawlers, was on the rise. Soviet crews did not allow Norwegian inspectors on board their ships and completely ignored their presence. In this situation, at the beginning of 1956, Rapp motor torpedo boats were sent north along with the *Sarpen* support vessel. As a result, four fishing vessels and their support vessel were escorted to Ålesund (the units and their crews were quickly released after a financial penalty was imposed) on February 2, 1956. Following such events, and due to the planned expansion of territorial waters to 12 nautical miles, the Norwegian parliament established in 1960 the Fisheries Surveillance Service (Der sjømillitære fiskeriopp-syn) which remained under the jurisdiction of the navy.

Initially, the vessels serving under FSS were *Bangor*-class minesweepers and *Flower*-class corvettes. They were later joined by three, purchased in 1957 on the civil market, 500-ton whaling ships, which were fitted with 76 mm cannons. They were called *Andenes*, *Senja* and *Nordkapp*. In the years 1956–1965, three River-class frigates (*Draug*, *Garm* and *Troll*) were used for protection tasks. This solution was chosen because of necessity and was not met with enthusiasm, mainly due to high costs (including personnel costs, since the crews were large). *Harm* and *Heimdai* with a displacement of 600 tons and a 1000-ton *Nornen* (in 1970 it got a helicopter landing pad at the stern) entered service in 1962. Together with a dozen smaller units, this was enough to protect the initial territorial waters that covered the radius of 4 nautical miles, but was also sufficient when the territory expanded to 12 nautical miles (the expansion took place on August 1, 1961).<sup>13</sup>

In the seventies, it became clear that sooner or later the international maritime law would institutionalize a deeper extension of the states' jurisdiction over its coastal waters. This shift was initiated on December 3, 1973, during the Third United Nations Conference on the Law of the Sea in New York. The government in Oslo had a foretaste of things to come when in 1970 (signed in 1959) the North-East Atlantic Fisheries Convention came into existence. It introduced uniform control standards in extensive maritime territories, ranging from the Arctic to the coast of Portugal. To work out the right solutions, in April 1974 the *Storting* (Norway's parliament) set up a special commission led by Thorvald Stoltenberg (born in 1931, he became the Minister of Defence from 1979–81 and later the Minister of Foreign Affairs from 1987–1989 and 1990–1993. He should not be confused with his son, Jens Stoltenberg, born in 1959, who was the Prime Minister of Norway, and is currently the 13<sup>th</sup> Secretary General of

13 Forsvarets Museer, accessed on 17.03.2018, [www.forsvaretsmuseer.no](http://www.forsvaretsmuseer.no), "Det sjømillitære fiskeriopp-syn (1961)", accessed on 17.03.2018, <http://forsvaretsmuseer.no/Marinemuseet/Sjoeforsvaret-organisasjon-avdelinger-og-drift-1814-2016/Kystvakten/Det-sjoemilitaere-fiskeriopp-syn-1961>.

NATO).<sup>14</sup> In 1975, the commission published a report calling for the formation of a specialized division within the navy that would act as the Coast Guard (Kystvakten). It would take the place of the existing Fisheries Surveillance Service (Der sjømillitære fiskerioppsyn). This solution was chosen from among a dozen (including the option to create a completely new civilian body), as it was considered to ensure an optimal division of competences and maximum effective use of limited resources (both material and intellectual, including those covering the institutional achievements collected so far, as well as staff experience) of the state. It was assumed that, while maintaining the existing organizational subordination, the existing fisheries inspection division would undergo a far-reaching metamorphosis and be able to effectively protect the interests of the state at sea. The recommendations were approved, and the task of developing detailed organizational solutions for the new (or rather deeply rebuilt) body was given to a different commission. It was headed by Johan Jørgen Holst (1937–1994; in future years he would become one of the mediators who helped in negotiating the Israeli-Palestinian agreement in Oslo in 1993). Based on recommendations developed under the direction of Holst, the parliament established the Norwegian Coast Guard (Kystvakten) on April 1, 1977. It took over the entire personnel and equipment of the Fisheries Protection Service. However, due to the establishment of an Exclusive Economic Zone with a range of 200 nautical miles, this proved to be not enough. In order to temporarily solve the problem of not having enough patrol units, seven civilian vessels were chartered at the time (six fishing boats and a sea mining service vessel, with a capacity between 827 and 1311 gross units) and adapted for inspection tasks. The names of the ships were: *Kr. Tønder*, *Sørfold*, *Møgsterfjord*, *Stålbas*, *Nordviking*, *Volstad Jr.* and *Rig Tugger*. At the same time, the development of new patrol boats of the *Nordkapp*-class entered its final stages (initiated in November 1976). A contract for three new units was signed with A / S Horten Verft in 1978. The first two ships entered service in 1981, and the last one in 1982. *Nordkapp*, *Andenses* i *Senja* remain in active duty to this very day.<sup>15</sup>

Apart from ships, Westland Lynx Mk.86 helicopters were to be paired with each vessel. The Parliament approved the acquisition of six new machines in 1978. On January 1, 1980, the 337<sup>th</sup> Squadron of the Royal Air Force, based in Bardufoss, was formally established. The unit obtained combat readiness in 1983. It should be emphasized that when making the decision to equip patrols with helicopters, the temptation to create a new naval force entity was avoided (*Nordkapp*-class patrol boats

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14 Norge Officers-Og Spesjalistforbund, accessed on 17.03.2018, [www.nof.no](http://www.nof.no), “Kystvakten feirer 40 år”, accessed on 17.03.2018, [www.nof.no/arkiv/Kystvakten-feirer-40-ar](http://www.nof.no/arkiv/Kystvakten-feirer-40-ar).

15 Jacob Børresen, “The Sea Power of the Coast State and the Management of Maritime Resources”, in: *Navies in Northern Waters*, red. Rolf Hobsona, Tom Kristiansena (London, Portland: Taylor & Francis, 2004), 329.

were the first Norwegian ships with a hangar bay and a helicopter landing pad). The on-board machines were kept within the auspices of the Air Force. In 2005, a contract was signed for the production and supply of eight new helicopters – the NHIndustries NH90. Due to delays, the squadron reached operational readiness with the new machine as late as May 1, 2015. It was high time because only three Lynxes were able to fly at that point.<sup>16</sup>

Helicopters were not the only machines that the Air Force received as part of building a new system for protecting maritime territories. The 333<sup>rd</sup> Squadron that consisted so far of five Lockheed P-3C Orion maritime surveillance aircraft received two more machines. They remained in service until the end of the nineteen – eighties, when five planes were sold to Spain (replaced by four P-3CN versions that were purchased in the United States), and the remaining two, that were in the best condition out of the whole unit, were kept and modernized to the P-3CL-3N standard. It should be noted that in March 2017 a contract was signed for the supply of five new Boeing P-8A Poseidon maritime patrol aircraft, which will replace the six remaining Orion planes in the years 2022–2023. Of course, the future machines will also be used by the Coast Guard.<sup>17</sup>

After the end of the Cold War, the Coast Guard underwent the most important reorganization in its history. It was part of the transformation of the entire Norwegian defence and public security sectors. For Kustvaken, the most important thing was to extend the formation's jurisdiction to coastal waters that were, up to that point, under the watchful eye of the police, the Maritime National Guard (Sjøheimevernet), coastal artillery and a volunteer organization called the Norwegian Maritime Rescue Association (Redningselskapet). As a result, two divisions were formed: Outer (in maritime sense) Coast Guard (Ytre Kystvakt, YKV),<sup>18</sup> which took over most of the equipment, and Inner (coastal) Coast Guard (Indre Kystvakt, IKV),<sup>19</sup> created from scratch through a parliamentary bill of 1997 (which came into force in 1999). The first vessels for Indre Kystvakt were acquired by charter from civilian vendors. They were: *Titran*, *Garsøy*, *Åhav*, and *Thorsteinson*. At the same time, they were working on a specialized unit. This led to the creation of the *Nornen*-class vessel.

Norwegian Coast Guard ships usually fly the Norwegian flag. However, while performing fishery inspection duties on EU waters they also use a blue and yellow

16 Jensen Jan P., *Havets voktere – historien om Kystvakten* (Oslo: Schibsted, 1998), 217–220.

17 Global Security, accessed on 4.04.2018, [www.globalsecurity.org](http://www.globalsecurity.org); “333 Squadron / 333 Skvadron”, accessed on 04.04.2018, [www.globalsecurity.org/military/world/europe/no-333-skv.htm](http://www.globalsecurity.org/military/world/europe/no-333-skv.htm).

18 Torgeir Tangedal, *Kystvakten – Alltid til stede – klar med det vi har – En undersøkelse om Kystvakten er organisert, bevisst og handlende på en måte som vil bygge en god sikkerhetskultur og forebygge skader og ulykker* (Høsten, Masteroppgave i Risikostyring og sikkerhetsledelse, Universitetet i Stavanger, 2015), 5–12.

19 *Ibidem*, 23–25.



pennant of the European Union’s inspection units. The pennant was first introduced on May 20, 1987. It directly derives from the so-called Hague Flag set up for fishery inspection units in the Hague Convention for Regulating the Police of the North Sea Fisheries from 1882. However, when operating on waters regulated by The North East Atlantic Fisheries Commission (NEAFC), they fly a different inspection pennant that has black “NE” letters in the upper left.

## COAST GUARD – AS OF 2018

The Norwegian Coast Guard is responsible, in accordance with the 1997 statutory regulations (Kystvaktloven), for maintaining Norwegian sovereignty and enforcing the law on Norwegian internal waters, the territorial sea, the Exclusive Economic Zone and the continental shelf. Its basic task is: to supervise fisheries and to explore inanimate resources, to oversee the safety of navigation, to carry out activities aiming at protecting the environment, maritime rescue and providing support for the police and customs officers. Being part of the organizational structure of the navy as its separate functional division (next to the fleet – naval forces, bases, schools and training centres) and having a separate budget, the Coast Guard performs tasks for:<sup>20</sup>

- Norwegian Coastal Administration (Kystverket), Directorate of Fisheries (Fiskeridirektoratet), Norwegian Institute of Marine Research (Havforskningsinstituttet) subordinate to Ministry of Fisheries and Coastal Affairs (Fiskeri-og kystdepartementet),
- Norwegian Police Service (Politi-og lensmannsetaten) subordinate to the Royal Ministry of Justice and Public Security (Det kongeligejustis – ogberedskapsdepartementet), which in Norway is also responsible for border traffic control and immigration,
- Customs Service (Tolletaten) subordinate to the Ministry of Finance (Finansdepartementet),
- Norwegian Environment Agency (Miljødirektoratet),
- Norwegian Mapping Authority (Statens kartverk or Kartverket) subordinate to the Ministry of Local Government and Regional Development (Kommunal-og moderniseringsministeren).

According to the establishment, the number of Coast Guard personnel is 370 (including about 100 conscripts, who after completing their service form the reserve forces, and 25 civilian employees). This, in conjunction with the reserve training system,

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<sup>20</sup> UNODOC, accessed on 21.03.2018; “Lov om Kystvakten (kystvaktloven)”, accessed on 21.03.2018, [www.unodc.org/res/cld/document/lov-om-kystvakten-kystvaktloven\\_html/Kystvaktloven\\_N.pdf](http://www.unodc.org/res/cld/document/lov-om-kystvakten-kystvaktloven_html/Kystvaktloven_N.pdf).

allows the maintenance of two full acting crews for each unit (helicopter pilots and technical personnel belong to the Air Force).<sup>21</sup>

The Coast Guard shares bases with the navy. One can be found in north-western Norway in Sortland by Djupfjorden (where the Coast Guard's command is located). The other one is in the southwest in Haakonsvern near Bergen (around 15 km away from the city). The Coast Guard also shares its personnel training system with the navy.<sup>22</sup>

### **PATROL VESSELS OF THE NORWEGIAN COAST GUARD – YTRE KYSVAKT**

The *Svalbard* patrol boat is currently the largest unit of the Norwegian Coast Guard. The vessel was designed to carry out missions in northern waters of the Norwegian Sea and in the Barents Sea (including the area around *Svalbard*). The unit was designed by the Akers Yards shipyards in accordance with the contract that was signed in 1987. Cutting of steel began on December 15, 1999, and the keel was laid on August 9, 2000, at the Tangen Verft shipyard in Kragerø (southern Norway, about 150 km northeast of Kristiansand). The hull was fitted by Langsten Slip & Båtbyggeri (at Tomre Fjord near Ålesund). Currently, the shipyard belongs to VARD (it has five shipyards in Norway, two in Romania, one in Brazil and one in Vietnam), of which Fincanteri holds all the shares. The Coast Guard took over the ship on December 21, 2001, in Langsten, where the vessel had been fitted. The unit has Det Norske Veritas +1A1 and Icebreaker POLAR-10 icebreaking classes.

*Svalbard* is a modern vessel that sets the standard, among others, for Canadians who are laboriously trying to create within their navy the capability to operate in the harsh environments of the Far North. The unit combines the functionality of a patrol unit and an icebreaker (operating on solid ice up to 1 m thick) with the possibility of conducting sea rescue, fire fighting, ecological rescue (dealing with oil spills) and towing vessels with a carrying capacity of up to 100,000 tons. Its all-purpose character is greatly improved thanks to being fitted with a hangar and a helicopter landing pad. With 6,375 tons of full displacement (for comparison, Norwegian frigates of the *Fridtjof Nansen*-class have 5,300 tons of full displacement) *Svalbard* is 103.7 m long, 19.1 m wide and has a 6.5 m draught. The engine room is running a diesel-electric powertrain. It should be emphasized, however, that four Rolls-Royce Bergen BRG-8

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21 Kystvakta, accessed on 22.03.2018; “Kystvakta er Noregs vaktarar på havet”, accessed on 22.03.2018, [www.forsvaret.no/fakta/organisasjon/Sjoeforsvaret/Kystvakten](http://www.forsvaret.no/fakta/organisasjon/Sjoeforsvaret/Kystvakten).

22 Kystvakta, accessed on 22.03.2018, “Kystvakta er Noregs vaktarar på havet”, accessed on 22.03.2018, [www.forsvaret.no/fakta/organisasjon/Sjoeforsvaret/Kystvakten](http://www.forsvaret.no/fakta/organisasjon/Sjoeforsvaret/Kystvakten).

diesel generators (3390 KW each) drive two Azipod propellers directly. It is a gearless solution, in which the propeller and the electric motor that rotates it are installed in an integrated shaft bossing, spinning in a 360-degree arc, under the vessel itself. The rotation of the bossing, i.e. turning the thruster towards the bow, allows for navigating through solid ice backwards with a much lower risk of damage to the propellers than in a classic build. Propellers also act as rudders. The maximum speed is 18 knots. The manoeuvrability of the unit is greatly increased thanks to the bow thruster.

The unit is equipped with standard military (and civilian) communication and reconnaissance systems, and is fitted with receivers that monitor ice conditions. The combat data system is based on the EADS TRS-3D / 16 ES / surveillance and target acquisition radar. The icebreaker's armament is almost non-existent and only consists of a universal 57 mm Bofors Mk 2 naval cannon (supplemented by two 12.7 mm machine guns). Special equipment includes a 12-ton hydraulic crane installed on the stern deck and two water cannons. Initially, the vessel had a Westland Lynx helicopter, but it was replaced by the NH-90. The crew consists of 48 officers, non-commissioned officers and sailors, but there is room for additional 20 crew members. The ship's home port is Sortland (approximately 60 km northwest of Narvik).<sup>23</sup>

**Table 1.** Large Norwegian icebreaker and patrol vessel *Svalbard*

| Name            | Pennant number | Built/fitted by  | Laid down  | Launched   | Commissioned |
|-----------------|----------------|--|------------|------------|--------------|
| <i>Svalbard</i> | W 303          | Tangen Verft, Kragerø (hull), Langsten Slip & Båtbyggeri, Langsten (fitting) | 10.08.2000 | 17.02.2001 | 21.12.2001   |

**Source:** self-study.

It should be noted that the construction of such a complex, single ship in less than 18 months is an excellent display of the prowess of the Norwegian shipbuilding industry, which once again proved that it operates on a world-class level. It is assumed that after an overhaul performed at Fiskerstarand Verft in 2006, the ship will remain in service for at least one and a half decades.

The first ships built for the Coast Guard after its establishment in 1977 were large *Nordkapp* patrol boats. Initially, there was a plan to acquire seven new vessels to replace the chartered merchant ships one for one, but the usual happened, and due to budget cuts the number of ordered units was reduced. The ships received traditional names: *Nordkapp*, *Senja* and *Andenes*.

23 Homeland Security, accessed on 10.03.2018, [www.homelandsecurity.com](http://www.homelandsecurity.com), "Svalbard (W 303) Icebreaker / Offshore Patrol Vessel (OPV)", accessed on 10.03.2018, <https://www.homelandsecurity-technology.com/projects/kv-svalbard-w-303-icebreaker-opv/>.

The experience gained during the building and operation of the *Nornen* patrol boat, which joined the fleet in 1963, was used in the construction of the new vessels. The ships took from *Nornen* its hull lines and overall structure, an Atlantic-style stem, a sponson cannon on the bow deck, an extensive quarterdeck on the midship that extends to a hangar and landing pad, and a large working deck on the stern.

**Table 2.** Large Norwegian *Nordkapp*-class patrol vessels

| Name            | Pennant number | Shipyard                | Launched   | Commissioned |
|-----------------|----------------|-------------------------|------------|--------------|
| <i>Nordkapp</i> | W 320          | Bergens Mek Verksteder  | 02.04.1980 | 25.04.1981   |
| <i>Senja</i>    | W 321          | Horten Verft            | 16.04.1980 | 06.04.1981   |
| <i>Andenes</i>  | W 322          | Haugensund Mek Verksted | 21.03.1981 | 30.01.1982   |

**Source:** self-study.

The ships have 3300 tons of full displacement. They are 105.5 m long, 14.6 m wide and have a draught of 4.9 m. They are powered by four Wärtsilä Wichmann 9AXAG diesel engines with a total power of 12,000 kW that move two propellers. The maximum speed is 21 knots. The range, while maintaining 15 knots, is estimated at 7,500 nautical miles. The crew consists of 52 officers, non-commissioned officers and sailors (including six members of the Air Force personnel – pilots and the helicopter maintenance team). Should such a need arise, it is possible to board 12 additional people (control teams, groups of scientists, special forces soldiers). Typically for Norwegian ships, the boats were fitted with a comprehensive array of technical observation and communication means that are integrated by the Navkis combat information system (modernized in the years 2001–2003 EDO).

The ships were built during the Cold War era. In accordance with the logic of the times, in the event of a high-intensity conflict, their anticipated task was to fill in the role of frigates capable of carrying out escort missions in the North Atlantic. For this reason, apart from the surface surveillance radar station and navigation radar, they were equipped with the Simrad SP 270 hydroacoustic station, as well as two triple 324 mm torpedo tubes (for Zone Honeywell Mk.46 torpedoes). Installation of deep-sea depth bomb launchers as well as six Kongsberg Penguin II anti-ship missiles and MBDA Simbad anti-aircraft missile launchers were also provided for. The Westland Lynx helicopters, which were initially stationed on the ships, have been now replaced by the NH 90s.<sup>24</sup>

24 Navaltoday, accessed on 22.03.2018, [www.navaltoday.com](http://www.navaltoday.com), “Nordkapp Class”, accessed on: 22.03.2018, [www.navaltoday.com/tag/nordkapp-class/](http://www.navaltoday.com/tag/nordkapp-class/).

In peacetime, however, the vessels are only armed with a 57 mm Bofors cannon (with the Sagem Vigy 20 optotronic guiding system). In addition, they can be mounted with four 20 mm Rheinmetall cannons, or possibly 12.7 mm machine guns and radar and thermal countermeasure launchers (coupled with a targeting device that marks the target with a radio-electronic station beam).

*Nordkapp*-class vessels were intensively used. *Andenes*, for example, took part in the Antarctic expedition of 1984–1985. It was performing research, but the ship's presence was a clear statement of Norway's interest in the Bellingausen Sea (in which Peter I Island is located) and Queen Maud's Land. The patrol boat also participated in the 1989–1990 expedition. As a side note, Norway maintains a year-round station in Antarctica named *Troll* (235 km from the coast, with a 3000 m runway) and a summer station named *Tor* (230 km from the coast). In addition, the Norwegian Polar Institute owns *Kronprins Haakon* – a modern research vessel. It was launched at the end of 2017. During its construction a lot of knowledge gained in the development and operation of the *Svalbard*, *Hardstad* and *Barenthav* patrol boats was used (see below). This is a noteworthy example of how the experience of one state agency (The Coast Guard) is absorbed by another entity (Norwegian Polar Institute and Norwegian Institute of Marine Research, which is the ship's operator).<sup>25</sup>

In 1990–1991 *Andenes* took part in the war for the liberation of Kuwait. At the time, it was carrying out, together with the Danish frigate *Olfert Fisher*, a mission aimed at enforcing compliance with sanctions imposed on Iraq by the UN. According to some publications, the ship was carrying six Penguin anti-ship missiles at that time, but the issue was not clearly explained.<sup>26</sup>

In 1994, *Andenes* protected Norwegian whaling vessels from the actions of ecological radicals from the Sea Shepard Conservation Society (SSCS), lead by eco celebrity Paul Watson. The conflict stemmed from the fact that Norway, like Iceland, did not protect common minke whales, claiming that the species was not threatened with extinction. This has not changed – in 2016 the catch limit was 880 specimens of minke whale, and in 2017 the number was increased to 999. On June 6, the SSCS *Whales Forever* collided with the Norwegian patrol boat. The ship belonging to the ecologists (former British *Switzer Mercator* seismic vessel with a capacity of 774 units) rammed *Andenes* and then attempted to flee to British Shetland. The Norwegians fired a few shots near the bow of the runaway ship, but they decided not to fire at the vessel itself. The

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25 Norsk Polarinstitutt, accessed on 24.04.2018, [www.npolar.no](http://www.npolar.no), “Troll – the Norwegian research station in Antarctica”, accessed on 24.03.2018, [www.npolar.no/en/about-us/stations-vessels/troll](http://www.npolar.no/en/about-us/stations-vessels/troll).

26 Danish Naval History, accessed on 22.03.2018, [www.navalhistory.dk](http://www.navalhistory.dk), “End of the Cold War opened up for New International Tasks”, accessed on 22.03.2018, [http://www.navalhistory.dk/English/History/1989\\_2003/TheNavyAfter1989.htm](http://www.navalhistory.dk/English/History/1989_2003/TheNavyAfter1989.htm).

damage to the bow of *Whales Forever* was so serious that the renovation was considered unprofitable and the ship was sold.<sup>27</sup>

In 2014, *Andenes* was directed to the Syrian coast. The ship took part in the RECSYR operation aimed at disarming Syria and destroying its chemical weapons that were in the hands of Bashar al-Assad's regime. The vessel assisted the frigate *Helge Ingstad* and a Danish ship of the same class, *Esbern Snare*, which escorted two freighters *Taiko* and *Ark Futura*, which were hired by both Scandinavian countries, carrying poison weapons to the Italian port of Gioia Tauro. There, the weapons cache was loaded onto *Cape Ray*, a unit belonging to the American Military Sealift Command (T-AKR-9679) that was equipped with two modules used for the utilization of chemical weapons (Field Deployable Hydrolysis System).<sup>28</sup>

*Nordkapp* vessels are currently approaching the end of their fourth decade of service. They are to be exchanged in 2021. It seems that they will be replaced by two different types of vessels. It will be one patrol boat with a hull reinforced for navigation in ice, which would allow Kystvaken to operate more efficiently in the Far North (Type 6615 working name), and two ocean patrol boats (Type 3049). It seems that patrol vessels currently referred to as type 3049 may be 30 m longer than those currently in service. Their displacement will approach 7,000 tons.<sup>29</sup>

In 2005, a large patrol vessel entered Kystvaken service. It has significant capabilities in the field of sea rescue (towing vessels with a carrying capacity of up to 200,000 tons) and ecological rescue, as well as being able to assume the role of a base unit for a special underwater vehicle and special equipment belonging to the NATO Submarine Rescue System (Allied Submarine Crew Rescue System, NSRS). The unit is called *Harstad* (W 318) and was designed by British Rolls Royce (which was also the author and implementer of the NSRS concept). The project was developed by Aker. The hull was ordered at the shipyard in Tulcea (Romania), which was completed in September 2004. It was later towed to Søviknes, where it was fitted. The ship was finally commissioned on January 28, 2005.

*Harstad* has 3,200 tons of displacement. It is 82.0 m long, 16.0 m wide and has a 6.4 m draught. It has two Rolls-Royce diesel engines, each with 4000 kW of power. They operate two propellers, allowing the vessel to reach a maximum speed of 18 knots

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27 Institute of Cetacean Research, accessed on 27.03.2018, [www.icrwhale.org](http://www.icrwhale.org), "Sea Shepherd's violent history", accessed on 27.03.2018, <http://www.icrwhale.org/eng/history.pdf>.

28 Forsvarets forskningsinstitutt, accessed on 29.03.2018, [www.ffi.no](http://www.ffi.no), "FFI – The Norwegian Research Centre on CBRNE Protection", accessed on 29.03.2018, <https://www.ffi.no/no/Publikasjoner/Documents/FFI-fakta-eng-CBRNE.pdf>.

29 Odd Magne Nilsen, Coast Guard Program New Vessels. Status and Plans, multimedia presentation, accessed on 3.04.2018, <http://www.sms1835.no/arkiv/2014-08-27%20New%20Coastal%20Guard%20Vessels%20-%20Status%20an%20Plans%20by%20Commander%20Odd%20Magne%20Nilsen.pdf>.

(additionally, the unit is fitted with an 883 kW azimuth thruster located about 1/3 of the length of the hull, starting from the bow). Electronic equipment includes a standard set of surveillance and communication solutions used by Coast Guard units. The ship is armed with a single 40 mm Bofors cannon. The crew comprises 26 people. It is worth emphasizing that the crane installed on the stern deck has a 5-ton lift and a range of 15 meters. It helps with the operation of a special underwater vehicle which belongs to the NSRS. The unit carries two *Norsafe*-class MOB (Man Overboard Boat) fast rescue boats.

**Table 3.** Large Norwegian *Harstad*-class patrol vessels

| Name           | Pennant number | Built by  | Laid down | Launched   | Commissioned |
|----------------|----------------|---|-----------|------------|--------------|
| <i>Harstad</i> | W 318          | Aker Tulcea (hull), Langsten Slip & Søviknes Verft, Søvik (fitting) | 02.2003   | 06.09.2004 | 28.01.2005   |

**Source:** self-study.

Due to high sea availability and the possibility of transporting and handling palletized cargo (another function of the stern crane), the ship is also used to resupply Norwegian facilities on the Bear Island (*Bjørnøya*), where the Herwigamna weather station is located.<sup>30</sup>

In the years 2009–2010, three more units functioning as patrol vessels entered Coast Guard service. They have a wide range of functionalities in the field of maritime rescue (towing vessels with a carrying capacity of up to 150,000 tons) and protection of marine areas against pollution. They are also capable of operating as part of the allied NSRS system. They are called: *Barentshav*, *Bergen* and *Sortland*. They replaced boats that were chartered from civilian companies and used as patrol vessels: *Chieftain*, *Tromsø* and *Stålbas*. The contracting entity responsible for the new patrol boats was Remøy Management (see below). The design of the vessels was prepared by Vik-Sandvik (bearing the designation VS 794 CGV). They were built by the shipyard Kleven Myklebust from Gurskebotn using hulls supplied by the Romanian shipyard Severnav from Drobeta-Turnu Severin near the Danube river. The contract for the first patrol boat was signed in March 2006.

The double-bottom units have 3,250 tons of displacement in the bow. They are 92.0 m long, 16.0 m wide and have 6.1 m draught. The propulsion has been configured in a hybrid system and consists of a Bergen B32 4000 kW diesel engine and two liquefied

<sup>30</sup> Maritime Journal, accessed on 3.04.2018, [www.maritimejournal.com](http://www.maritimejournal.com), “Norwegian multi-role coast-guard vessel Harstad”, accessed on 3.04.2018, [http://www.maritimejournal.com/news101/tugs,-towing-and-salvage/norwegian\\_multi-role\\_coastguard\\_vessel\\_harstad](http://www.maritimejournal.com/news101/tugs,-towing-and-salvage/norwegian_multi-role_coastguard_vessel_harstad).

natural gas (LNG) generators: Mitsubishi GS16R-MPTK and GS12R-MPTK with a total power of 3200 kW. They power two propellers. Manoeuvrability is maintained thanks to a transversal thruster and bow azimuth thruster. This is the first national unit of this size in which the described solution was used. It should be emphasized that currently there are 25 LNG-powered ships in operation, and despite strong political pressure motivated by environmental considerations (and not only), this number is growing but at a relatively slow rate (mainly in the Baltic Sea and the North Sea), primarily due to high costs. It should be noted that LNG is a promising future-oriented fuel for ships, because it offers significantly lower emission levels of harmful substances into the atmosphere compared to traditional marine fuels, such as marine diesel oil (MDO) or heavy fuel (HFO). According to available data, Norwegian hybrid engine patrol boats emit 80% less sulphur and nitrogen oxide and solid particles (including soot), as well as 25% less carbon dioxide. Savings on fuel costs are estimated at around 20%. The maximum speed while using diesel is 18.5 knots. Switching to the electric drive gives the ship a maximum speed of 16.5 knots. While both systems are on, the ship can go as fast as 21 knots. The range while maintaining 14 knots is about 8,000 nautical miles. The vessels have extensive communication and technical observation systems, but the weaponry is almost non-existent and only includes a single 40 mm Bofors cannon.<sup>31</sup>

On-board equipment includes, among others, a crane on the aft deck (with an 8-tonne lift and a range of 6.3 m), two towing winches, two fast rescue boats (MOB class), two water cannons and a water curtain system. The everyday crew consists of 16 people, but the units are capable of accommodating 40 additional crew members.

**Table 4.** Large Norwegian *Barentshav*-class patrol vessels

| Name              | Pennant number | Shipyard   | Laid down | Commissioned |
|-------------------|----------------|--|-----------|--------------|
| <i>Barentshav</i> | W 340          | Kleven Myklebust Verft from Gurskebotn, Severnav hull from Drobeta-Turnu Severin | 02.2006   | 10.08.2009   |
| <i>Bergen</i>     | W 341          |  | 05.2006   | 10.04.2010   |
| <i>Sortland</i>   | W 342          |  | 12.2006   | 14.07.2010   |

**Source:** self-study.

It should be emphasized that the Coast Guard is not the owner, but only a user of the three *Barentshav*-class vessels. They belong to Remøy Management – a large entity specializing in tonnage management (including issues related to contracting vessels,

31 Homeland Security, [www.homelandsecurity-technology.com](http://www.homelandsecurity-technology.com), accessed on 2.04.2018, “Barentshav Class Offshore Patrol Vessels (OPV)”, accessed on 2.04.2018, <https://www.homelandsecurity-technology.com/projects/barentshav-offshore-patrol-vessels-norway/>.



classification, ongoing maintenance, crew matters and insurance). The company managed the entire project of selecting the contractor that would build the ships. They supervised the whole process of construction and fitting, and then chartered the ships to the state in a manner very similar to that used on the shipping market, which is referred to as *bareboat charter*. Currently, maintenance and service of the units is Remøy Management's responsibility. According to the Norwegian Ministry of Defence, this solution saves significant resources related to the management of the process of introducing new units (and later their maintenance) into service, since state agencies are exempted from the need to maintain specialized functional departments and the delegation of personnel who would not be as skilled (which is also linked to experience) as civilian specialists. A similar solution is also used in other countries, where there are fixed rules governing the functioning of state services, and public-private cooperation is one of the recognized forms of acquiring resources and capabilities of armed forces and structures responsible for public security. In addition to the three Coast Guard vessels, Remøy Management is also currently responsible for the maintenance and operation of the Royal Norwegian Navy patrol/training ship *Olav Tryggvason*.<sup>32</sup>

### COASTAL PATROL BOATS OF THE NORWEGIAN COAST GUARD – INDRE KYSTVAKT

They were acquired as part of the public-private partnership mechanism by companies from Fosnavåg (belonging to two members of the same family: Remøy Management AS and Remøy Shipping AS). Initially, there were supposed to be 10 ships, but finally, the number was reduced to five (with two more in a modified version). Twenty European shipyards took part in a tender for the construction of patrol vessels, including Gryfia Szczecin, which was finally selected in the second stage of the procedure, defeating a Spanish company and two Norwegian ones. The contracts signed on February 12, 2005 secured the construction of five units (with the possibility to extend the number by an additional five, from which – as mentioned above – only two have been built so far). Sheet metal fabrication for the first patrol began on June 27, 2005, the fuselage was launched on January 6, 2006, and on July 6 of the same year the baptism ceremony of the first unit, named *Nornen*, took place at Wały Chrobrego. In October 2008, the Norwegians received the last unit of the first batch. Upon arriving from Poland, the patrol boats were fitted with specialized equipment (mainly military communication systems and cryptographic devices) and armed (12.7 mm Browning M2 HB machine gun).

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32 Remøy Management, accessed on 2.04.2018, [www.remoy.management.no](http://www.remoy.management.no), "Ship management", accessed on 2.04.2018, [www.remoy-management.no/business-areas/ship-management](http://www.remoy-management.no/business-areas/ship-management).

*Nornen*-class vessels are intended for patrolling waters (navigation supervision and control, inspection and control of fisheries, support for police and customs services, activities within a uniform system of naval situation recognition) along the entire coast of Norway and within 24 nautical miles from the shore. They carry out rescue and environmental protection missions. Lastly, they are tasked for ecological rescue – patrol boats are equipped with systems dedicated to removing oil spillages from the surface of water. They can push the hulls of other units using their bow (the so-called “pusher bow”). They also have a large aft deck on which additional specialized equipment can be kept. They are characterized by very good seaworthiness and high manoeuvrability. They also provide the crew with a high social standard of service. The boats are fitted with very extensive electronic equipment: radar stations with a wavelength of 3 and 10 cm, two GPS receivers, a sonar, an electronic map system, a satellite communication system, GMDSS – Global Maritime Distress Safety System receivers, a system that controls in real-time the location of both deck boats and provides communication between them, and an encrypted military communications system. It should be worth noting that the ships have an innovative superstructure design, ensuring very good visibility from the platform and allowing for full observation of all the activities carried out on the work deck. The diesel-electric propulsion system and two azimuth thrusters are both economical and functional in terms of heavy loads.<sup>33</sup>

*Nornen*-class patrol boats have a displacement of 761 tons and a total length of 47.20 m. The distance between perpendiculars is 42.00 m, with a width of 10.30 m and draught of 3.25 m. The vessels are equipped with a diesel-electric drive, which consists of two main power generators with a capacity of 970 kW each, a generator with a capacity of 484 kW and a generator with a capacity of 201 kW. The ships have two electric azimuth thrusters (placed in stern gondolas, serving also as the rudders) with a capacity of 1100 kW each. The maximum speed is 16 knots, while economic speed is 12 knots. The patrol boats have a bow thruster (1,25 m in diameter, 300 kW). Their bollard pull is 20 tons. They have a fuel tank capacity of 107 m<sup>3</sup> and freshwater tank capacity of 95 m<sup>3</sup>. Lubricating oil tanks can hold 2 m<sup>3</sup> and used oil tanks – 140 m<sup>3</sup>. The on board cargo space is about 100 m<sup>2</sup>. The deck equipment consists of: two electrohydraulic cranes with a 2.77 tonne lift and an arm reach of 5.21 m, two stern capstans with a pulling capacity of 5 tons and a towing lift with a pulling capacity of 35 tons. The vessel is fitted with two boats:

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33 Homeland Security, accessed on 02.04.2018, [www.homelandsecurity-technology.com](http://www.homelandsecurity-technology.com), “Nornen Class Patrol Vessels”, accessed on 02.04.2018, [www.homelandsecurity-technology.com/projects/nornen-class-patrol-vessels/](http://www.homelandsecurity-technology.com/projects/nornen-class-patrol-vessels/).

- fast, semi-rigid MOB class 7,8 m rescue boat (Sjøbjørn 25),
- fast 12.6 m chase and inspection cutter (MST 1050 HPB or Alusafe 1050).<sup>34</sup>

Patrol boats are designed to minimize ongoing maintenance time – it is assumed that they will be on duty 330 days per year. The living quarters are designed for 20 people (8 single and 6 double cabins).<sup>35</sup>

**Table 5.** Small Norwegian *Nornen*-class patrol vessels

| Name           | Pennant number | Shipyard                            | Laid down | Commissioned |
|----------------|----------------|-------------------------------------|-----------|--------------|
| <i>Nornen</i>  | W 330          | Stocznia Remontowa Gryfia, Szczecin | 2005      | 2006         |
| <i>Farm</i>    | W 331          |                                     | 2006      | 2007         |
| <i>Heimdal</i> | W 332          |                                     | 2006      | 2007         |
| <i>Njord</i>   | W 333          |                                     | 2007      | 2008         |
| <i>Tor</i>     | W 334          |                                     | 2007      | 2008         |

**Source:** self-study.

In 2013, the Coast Guard took the patrol boat / training ship *Magnus Lagabøte* from the naval branch of the Home Guard. It was built (as in the case of *Olav Tryggvason*) by Stocznia Gryfia. They commissioned the construction of the hull to Stocznia Szczecińska Nowa. It was built according to slightly modified *Nornen* blueprints. It is larger (49.6 m long, 800 tons of displacement). The vessel is owned by Remøy Shipping, which is responsible for its operation and maintenance.

**Table 6.** Small Norwegian *Magnus Lagabøte*-class offshore patrol vessel

| Name                   | Pennant number | Shipyard  | Laid down | Commissioned |
|------------------------|----------------|---|-----------|--------------|
| <i>Magnus Lagabøte</i> | W 335          | Stocznia Remontowa Gryfia, Szczecin<br>(hull – Stocznia Szczecińska Nowa) | 2008      | 2011         |

**Source:** self-study.

It should be emphasized that until 2016, Kystvakten used a specially adapted fishing vessel as a patrol boat. It was Ålesund, owned by Remøy Shipping. The Coast Guard had been chartering the vessel since 1996. It was built by the Kleven Myklebust shipyard from Gurskebotn in western Norway. It has a displacement of 1,350 tons. It is 63.2 m long, 11.5 m wide and has a draught of 4.7 m. It is powered by the Wärtsilä Wichmann

<sup>34</sup> Ibidem.

<sup>35</sup> Håkon Lunde Saxi, *Norwegian and Danish Defence Policy: A Comparative Study of the Post-Cold era* (Oslo, Forsvaret hØgskole, 2010), 27.

8V28B 3600 hp diesel engine, which gives it a maximum speed of 18 knots. The vessel is armed with a 40 mm cannon and a 12.7 mm machine gun. It was initially supposed to be withdrawn from service after the introduction of the new *Barentshav* patrol boats, but the unit was finally retired after the acquisition of *Magnus Lagabøte*. What is interesting is that a 2100-ton Tromsø trawler that was built in Gdynia remained in service in the years 1995–2007.

## CONCLUSIONS

The Norwegian Coast Guard is a unique formation on a Scandinavian scale. While being part of the armed forces (Navy), it performs a wide spectrum of tasks for several civil departments. This solution stems from the need for a model that combines relatively low maintenance costs with high efficiency. It should also be noted that since the beginning of the 21st century, the Coast Guard's internal tonnage renewal program is being consistently implemented (which bows down to replacing the adapted units with multi-task patrol boats with a wider spectrum of capabilities). This makes the Coast Guard one of the most modern and comprehensive formations of this type in the world. There is, in fact, such a thing as a "Norwegian Coast Guard model".<sup>36</sup>

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English version: Mateusz Matuszczak, Mark Atkinson

#### SUMMARY

Norwegian maritime areas span over 2.5 million square kilometres. Among Norwegian maritime resources, oil and natural gas deposits play the most important role (about 6000 oil wells were drilled: 4996 in the North Sea, 836 in the Norwegian Sea and 168 in the Barents Sea). Norway is currently the sixth-largest gas producer and 13<sup>th</sup> largest producer of crude oil in the world. In 2016, oil and gas exports gave Norway a total revenue of 350 billion kroner, constituting 37% of the value of en bloc exports (47% of the value of exports of goods). The stability of the commodity market and the maintenance of the undisturbed operation of erected mining installations are, therefore, of paramount importance for maintaining a high level of Norway's social, economic and political security. In an unfavourable political and military situation, however, sea mining can turn into the most difficult element to protect of the critical infrastructure of the state. In turn, the value of exports of fishery products and the closely related processing industry is estimated at around 48 billion NOK, which is a significant part of the state's revenue. In addition, these branches play an important social role, which in a welfare state is an extremely important issue. The two aforementioned examples clearly show that Norwegians have good reasons to protect their maritime territories. A specialized formation called the Coast Guard (Kystvakten) is dedicated to this task.

#### KYSTVAKTEN – NORWESKA STRAŻ WYBRZEŻA

**Słowa kluczowe:** Norwegia, obszary morskie, straż wybrzeża

#### STRESZCZENIE

Norweskie obszary morskie to ponad 2,5 mln km<sup>2</sup>. Spośród morskich zasobów norweskich największą rolę odgrywają złoża ropy naftowej i gazu ziemnego znajdujące się w obrębie obszarów morskich państwa (wykonano około 6 000 odwiertów, 4996 na Morzu Północnym, 836 na Morzu Norweskim i 168 na Morzu Barentsa). Norwegia jest obecnie szóstym producentem gazu i 13 producentem ropy naftowej na świecie. Eksport ropy i gazu dał Norwegii w 2016 roku wpływy 350 mld koron, co stanowi 37% wartości eksportu *en bloc* (47% wartości eksportu towarów). Stabilność rynku surowców oraz utrzymanie niezakłóconej eksploatacji wzniesionych instalacji wydobywczych mają więc pierwszoplanowe znaczenie dla utrzymania wysokiego poziomu bezpieczeństwa socjalnego, ekonomicznego i politycznego Norwegii. W niesprzyjającej sytuacji polityczno-wojskowej istnieje jednak ewentualność

przeistoczenia się górnictwa morskiego w najtrudniejszy do ochrony element infrastruktury krytycznej państwa, jego prawdziwą *piętę achillesową*. Z kolei wartość eksportu produktów rybołówstwa i powiązanego z nim ściśle przemysłu przetwórczego szacowana jest na około 48 mld koron, co również jest wartością znacząca na liście dochodów budżetu. Poza tym wymienione gałęzie odgrywają istotną rolę społeczną, co w państwie dobrobytu również jest zagadnieniem niezwykle ważkim. Dwa powyższe przykłady świadczą dobitnie, że Norwegowie mają powody by chronić swoje obszary morskie. Zadaniu temu dedykowana jest specjalistyczna formacja zwana Strażą Wybrzeża (Kystvakten).

**Citation:** Kubiak, Krzysztof. "Kystvakten – Norwegian Coast Guard". *Studia Maritima* 32 (2019): 207–230. DOI: 10.18276/sm.2019.32-09.