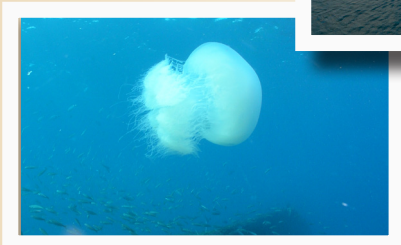
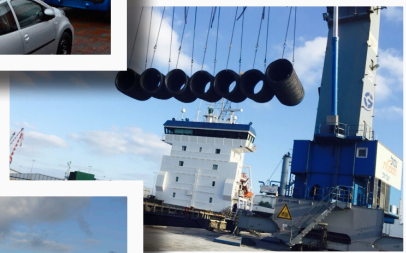
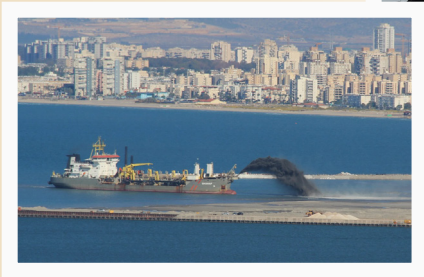


# MARITIME STRATEGIC EVALUATION FOR ISRAEL 2018/19

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## Global Developments in the Maritime Domain

***Shaul Chorev***

### General

Although this report focuses on **the Eastern Mediterranean and the Red Sea**, the events in this arena cannot be considered separately from recent global developments in general and in the maritime domain in particular and this is the result of the close links between events in the global arena and their effects on Israel's immediate environment.

It is first of all worth mentioning that the **tension in relations between the US and its allies and between the US on the one hand and China and Russia on the other** continued during 2018 and even intensified. The US views China and Russia as revisionist forces that are seeking to create "a world consistent with their authoritarian models."<sup>1</sup>

There are scholars in Political Science who point to the growing number of leaders in the world who **scorn the values of liberal democracy** and who seek complete control of politics, the economy, the legal system and the media. These leaders are liable to lead the world toward a future in which globalization, hi-tech industries, knowledge and the enlightenment that emerged in recent decades will begin sliding back into an "Age of Authoritarianism".<sup>2</sup>

With regard to the **globalized economy**, the **gradual shift of the center of gravity** in geopolitics, the economy and geostrategy **from the West toward East Asia**, as a result of the increasing importance of the latter in global economic development (which was described in previous reports) continued this year.

This phenomenon has also made it possible for the developing countries in Southeast Asia to consume a growing share of global imports, which has led to a large rise in the volume of trade in this region. Figure 1 below presents the change in GDP in 2017, which shows the growth in GDP in the countries of East and Southeast

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1 Mike Eckel, Pentagon Chief Calls Russia, China 'Revisionist Powers', RadioFreeEurope Radio Liberty, January 19, 2018

<https://www.rferl.org/a/pentagon-mattis-calls-russia-china-revisionist-powers/28985632.html>

2 Der SPIEGEL Staff, Rise of the Autocrats, Liberal Democracy Is Under Attack, Spiegel Online, June 13, 2018 <http://www.spiegel.de/international/world/trump-putin-and-co-liberal-democracy-is-under-attack-a-1212691.html>

Asia. Alongside these developments there is increasing understanding that there are also negative trends occurring in the ecological system, such as pollution and the emission of dangerous greenhouse gasses.

Following the imposition of tariffs by President Trump on Chinese goods (primarily aluminum and steel) and the lack of certainty they led to in the global economy with respect to the continuation of growth, China responded to this move by imposing tariffs on American goods—primarily agricultural products, cars and fish. Nonetheless, it is important to mention that recent indexes still do not show a retreat of the global economy and in the short run it appears that the global economy is still sufficiently flexible to absorb shocks of this sort.

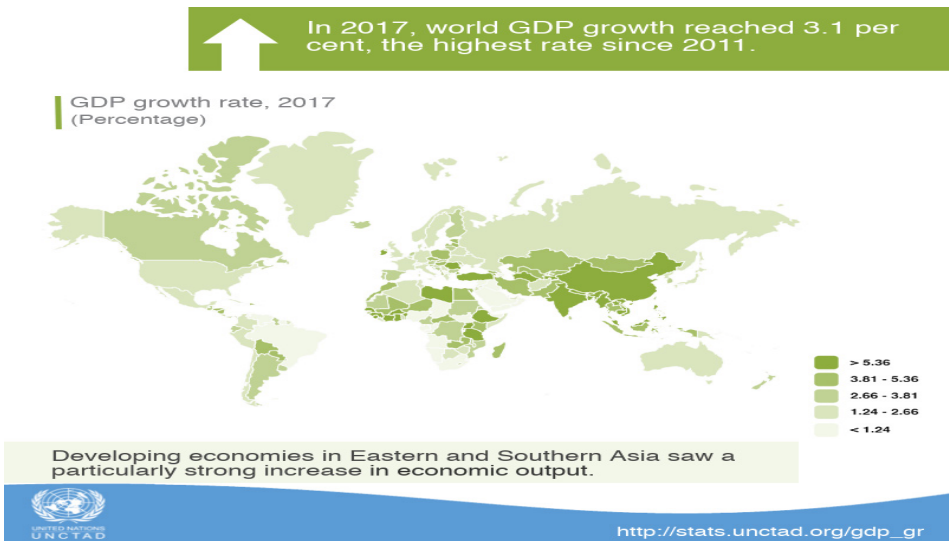


Figure 1: GDP growth rate, 2017

Despite the short-term economic volatility, it is expected that the American, Chinese and Indian economies will in the future constitute the "Big Three" (G-3). If the rate of growth of Indian GDP, which is currently 7.5 percent, continues also in 2019-20, then the Indian economy will overtake that of China. Each of these three countries will in the future be forced to deal with a spectrum of challenges, from defense and climate change to maintaining economic and industrial growth. The global events during the last decade have led experts in Political Science to the conclusion that **the international security environment** has shifted from a post-Cold-War era—in which the US was a superpower in a unipolar structure—to a new and different situation

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that is manifested in, among other things, the renewal of the competition for power with China and Russia. Accordingly, some scholars point out that the international system is now multi-polar. This multipolar world is an extreme substitute for the unipolar world due to the fact that it is based on the existence of several independent and sovereign centers of strategic decision-making on the global level. Nevertheless, it should be remembered that a multipolar world does not represent a return to a bipolar system, since there is currently no single strategic or ideological force that can seriously challenge the US.

Following the settling-in period of the Trump administration, the White House published a document in December 2017 called the National Security Strategy, signed by the President.<sup>3</sup> It led to the publishing of the National Defense Strategy by the Department of Defense in January 2018, signed by Secretary of Defense Jim Mattis. The leading motif of this document is "Sharpening the American Military's Competitive Edge."<sup>4</sup> The National Defense Strategy recognizes that the global security environment has become more complex, which has been manifested in challenges to the international order and the reappearance of long-term strategic competition between countries. In the view of the Pentagon, this calls for a clear assessment of the threats facing the US and a recognition that the nature of warfare is changing and therefore the orientation of the Pentagon itself must adapt. The document states that the main threat to continued US prosperity and security is the renewal of its long-term strategic competition with the revisionist powers. The document points to the desire of China and Russia to fashion a world that is consistent with their authoritarian model, which allows them to veto the economic, diplomatic and security decisions of other nations.

The document mentions another change in the strategic environment, namely the **resilient but weakening international order**, one that has been developing since the Second World War. The document claims that China and Russia are undermining the international order from within the system and that they are exploiting the principles of that order for their own purposes, although they do not hesitate to attack those principles.

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3 National Security Strategy of the United States of America, The White House, December 2017 <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905-1.pdf>

4 Department of Defense, Summary of the 2018 National Defense Strategy of the United States of America, Sharpening the American Military's Competitive Edge [https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf?mod=article\\_inline](https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf?mod=article_inline)

The document discusses the part of the **rogue regimes** such as North Korea and Iran in undermining the stability in various regions of the world, by means of their efforts to develop nuclear weapons and launch capabilities (ballistic missiles) and the patronage they provide to terror organizations.

The two aforementioned forces (revisionist forces and rogue regimes) are increasingly competitive on every level, though at the same they are avoiding an armed confrontation. They are doing so by means of coercion on new fronts, the violation of sovereignty and intentional obfuscation and blurring of boundaries between civilian and military goals.

The document also claims that in coming years, challenges to US military superiority will develop and they will constitute another transformation in the global security situation. After years of US superiority in all domains—air, land, sea, space and cyber—it now faces competition.

In addition, the document also mentions the changes occurring in the security environment, which are influenced by, among other things, **the rapid pace of technological progress and the changing nature of war**. Among the new technologies are advanced computing, big data, artificial intelligence, automation, robotics, directed energy, hypersonics and biotechnology. Proficiency in these technologies is essential to fight and win wars in the new era.

The document also mentions that **new commercial technology** will change society and in the end also the nature of war. The fact that many technological developments will come from the commercial sector involves dangers to the US since they will be easily accessible for adversaries and non-state players, a situation that will lead to the erosion of America's conventional advantage. Based on this diagnosis, the document states that in order for the US to maintain its technological advantage, changes will be necessary in industrial culture, in the sources of investment and in the protection of what it calls the National Innovation System.

The new strategy also claims that **technologies** developed by the Department of Defense should be evaluated according to an **index of their battlefield relevance** and that the improvement in the performance of a system should be evaluated by the time until it comes into use and its relevance. The measure of success is not dependent on the question of which country develops an advanced battlefield technology first but rather which country achieves the best and fastest integration on the battlefield. According to this view, the Department of Defense has set itself

the goal of exceptional performance in the development of weapons systems at the expense of putting the technology to use in a timely manner, a situation that calls for change in the Department of Defense's business culture.

The document calls for the realization that **the territory of the US** does not constitute just another region of immunity that is protected by the maritime domain, but rather as a preferred target for attack, including by terrorist elements seeking to attack its citizens, commercial targets and government infrastructures and also by means of political and social subversion. New threats arise as digital connectivity increases in all facets of life – business, government and the army – and is creating significant vulnerability.

The strategy calls for the **strengthening of current alliances and the creation of new ones** on the basis of mutual respect, responsibility, orders of priority and accountability. Similarly, it calls for the expansion of regional consultation mechanisms, joint planning and deepening of interoperability. With respect to the strengthening of existing alliances and the creation of new ones, the strategy describes, among other things, the importance of expanding Indo-Pacific alliances and partnerships, the strengthening of NATO and the creation of enduring coalitions in the Middle East.

Accordingly, the document presents the highlights of the new National Security Strategy:

- More lethal force.
- Strengthening of alliances and attracting new partners.
- Reforming the Department of Defense in order to improve its performance at a reasonable cost.<sup>5</sup>

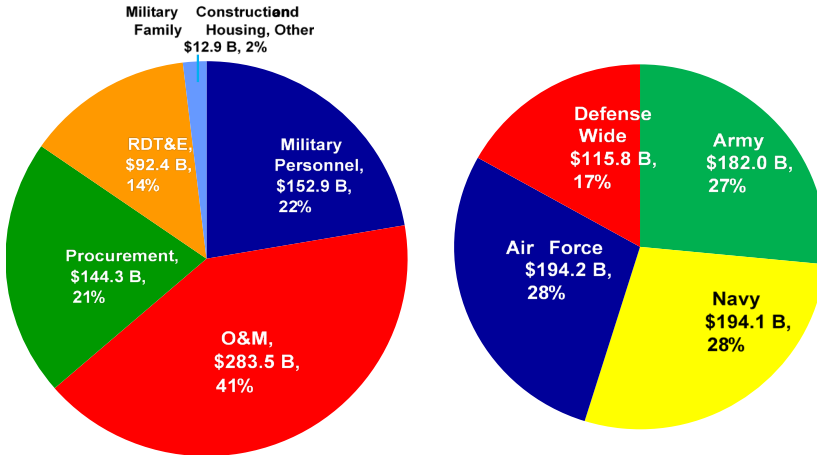
The administration's request that the Congress approve **a defense budget** of \$686 billion for 2019 represents an increase of \$74 billion relative to the 2018 budget (a real increase of 10 percent; see Figure 2 below).

**China and India** are continuing their acquisition of advanced weapons systems with a variety of capabilities and are gaining recognition as **regional superpowers**. With

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5 Ibid., 1-10.

respect to China, there are those who claim that it has already become a global superpower which is confronting the US and Russia in a multi-polar system.<sup>6</sup>



Request for fiscal year 2019 - \$686.1 billion  
 Request for fiscal year 2019 – Total base and OCO funding.

Figure 2: Requested defense budget for 2019

**The Chinese defense budget** for 2018 was over \$1.1 trillion yuan (\$174.5 billion), which represents an increase of 8.1 percent relative to the previous year and is about one-quarter the size of the US defense budget. Although the increase in the Chinese defense budget is not significantly greater than the 7-percent increase in 2017, it reflects the highest level of defense expenditure in the last three years. It should be remembered that starting in 2016 the increase in the defense budget dropped from double-digit to single-digit. China’s military buildup, alongside a policy of power projection in the maritime domain is causing concern in the region and particularly with respect to its unyielding position in maritime disagreements over sovereignty in the South China Sea region.

India’s defense budget for 2018-19 stands at \$62.8 billion, an increase of about \$9 billion relative to the previous year. The Indian navy’s budget accounts for about 15 percent of the total defense budget (see Figure 3).<sup>7</sup>

6 N. Janardhan, Is China Forging a New Tripolar World Order? The Diplomat, April 26, 2018 <https://thediplomat.com/2018/04/is-china-forging-a-new-tripolar-world-order>

7 Laxman K Behera, Defense Budget 2018-19: The Imperative of Controlling Manpower Cost, February 02, 2018 <https://idsa.in/issuebrief/defence-budget-2018-19-controlling-manpower-cost-lkbehera-020218>

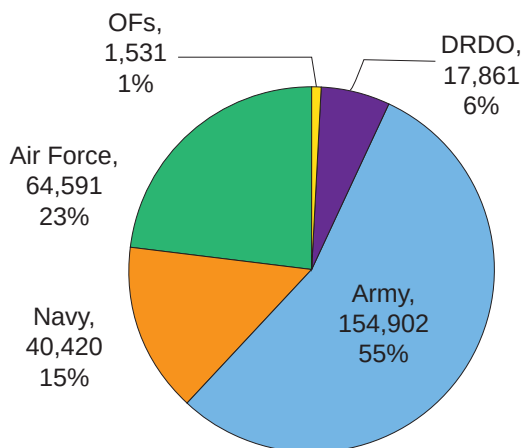


Figure 3: India's defense budget and its breakdown

The **EU** continues to constitute a major economic power and apparently the fourth largest economy in the world, even though it will grow at a low rate of about 2 percent.<sup>8</sup> In May 2018, the EU revised its forecast of GNP growth downward as a result of negative external influences that originate in the trade confrontation with the US and the rise in fuel prices. The EU is still in negotiations with Britain over its withdrawal from the EU (Brexit) which are meant to conclude by March 2019. It appears that the British decision to withdraw from the EU has aroused a **broad political movement** among the EU members, whose direction is still unclear, although there is a new feeling of unity emerging among the remaining 27 members.<sup>9</sup> British Prime Minister Theresa May is continuing the negotiations with the EU with the intention of maintaining close economic relations. Despite the Russian pressure on NATO members, Jens Stoltenberg, the Secretary General of NATO has promised John Bolton, the US National Security Advisor, that NATO will continue the process of accepting Georgia and Ukraine as members.<sup>10</sup> Due its lack of ability to project power, it does not appear that the EU's status in the international arena will resemble that of a G-3 power. NATO's **defense posture** is based on two principles: advanced weapons systems and platforms and forces that are trained to operate in an integrated

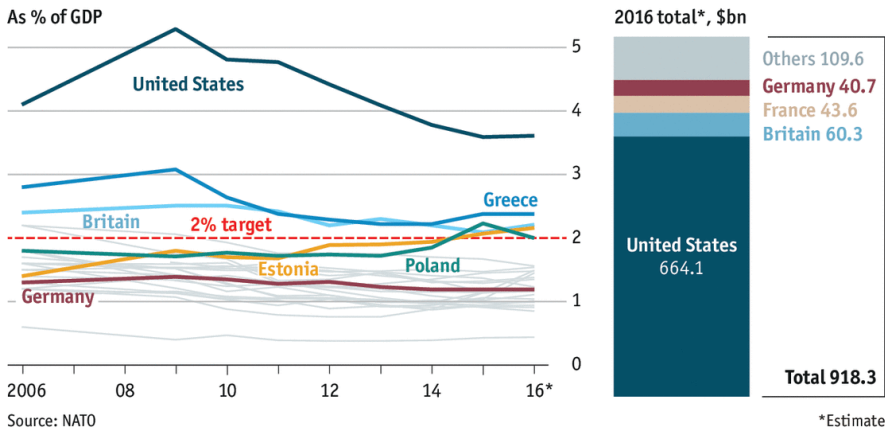
8 European Commission, European Economic Forecast. Summer 2018 (Interim), Economic and Financial Affairs, [https://ec.europa.eu/info/departments/economic-and-financial-affairs\\_en](https://ec.europa.eu/info/departments/economic-and-financial-affairs_en)

9 Caroline de Gruyter, There Is Life for the EU After Brexit, Carnegie Europe, March 23, 2018 <https://carnegieeurope.eu/2018/03/23/there-is-life-for-eu-after-brexit-pub-75876>

10 Stoltenberg promises that Georgia will become a NATO member, September 16, 2018 <http://uawire.org/#>



manner. As of the writing of this report, the EU is occupied by three main challenges: in the **East**, formulating a response to the possibility of a Russian invasion of the Baltic states; in the **South**, dealing with the flow of refugees arriving on the shores of the EU countries on the Mediterranean; and in the **Eastern Mediterranean**, where there is an irresolvable crisis in Cyprus. Notwithstanding NATO Secretary General Jens Stoltenberg statement in June 2017 that the NATO countries, including Canada, have increased their defense spending by 4.3 percent and in comparison to 2014 defense spending has increased by \$46 billion, at a summit meeting held in July 2018 President Trump reiterated his demand that the NATO countries increase their defense budget (Figure 4 presents the trend in the NATO defense budget from 2006 to 2010 as a proportion of GNP).



Source: NATO

Economist.com

Figure 4: The trend in the NATO defense budget from 2006 to 2010 as a proportion of GNP

In an interview given by the President to Fox News, Trump reiterated his claim that the US does not need to defend small countries in NATO such as Montenegro based on NATO's commitment to come to the aid of every one of its members if attacked. This view was in line with the US administration's demand of the NATO countries to increase their defense expenditure and to take a more significant role in the NATO alliance (accompanied by a veiled threat that if not, he will not fulfil the American commitment to protect the NATO members in the event that Russia invades their territory).

The **Russian Federation** continues to maintain its image and standing as a global and regional power, despite its **political, economic, social and demographic** problems.

The hope President Putin has placed on the election of Donald Trump as US President has not yet justified itself with respect to the cancelation of economic sanctions imposed on Russia. At the summit meeting held between the two in July 2018 in Helsinki, Russia revealed an embarrassing dimension of this relationship. First, the US President refused to support the findings of the US intelligence community that Russia had intervened in the 2016 elections, rather than expressing immediate skepticism regarding Putin's denial in this matter. Nonetheless, Russia would have preferred more official talks rather than a one-on-one conversation between the two leaders. This would have allowed Putin to ensure that the bureaucratic officials on both sides would come to agreement on a number of issues that are strategically important to the Russians.<sup>11</sup>

After an uninterrupted period (starting in 2011) in which the **Russian defense budget** increased by an average of about 20 percent annually, the Russian government decided that as a result of economic difficulties it would make a permanent cut in its defense budget during the period 2017-19 (see Figure 5). The Russian defense budget for 2019, as published by the Ministry of Finance, will be \$B47.13,<sup>12</sup> which represents about 4.2 percent of the Russian Federation's GNP. The price of oil has a major influence on the defense budget but recently there have also been voices in the Russian establishment which point out that a wise political strategy can achieve military objectives without increasing the defense budget. The supporters of this approach point to the success—from Russia's perspective—of the British withdrawal from the EU (Brexit) which has weakened the EU and the election of Donald Trump as US President as landmark events, without Russia having to increase its defense budget.<sup>13</sup>

The **expenditure on national security** in Russia is expected to rise in 2019 by 3.7 percent, to about 2.83 trillion rubles. The new plans are in line with previous forecasts for 2018. Nevertheless, the defense allocation for 2019 is higher by about 0.5 percent than expected. This reflects the general crisis that Russia is experiencing, which is partly due to the drop in the price of oil. However, this is not preventing Russia—

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11 Patrick Wintour, who's wooing who in the Trump-Putin relationship? The Guardian, 21 July 2018  
<https://www.theguardian.com/us-news/2018/jul/21/whos-wooing-who-in-the-trump-putin-relationship>

12 Craig Caffrey, Russian defence budget expected to be cut by 5% in 2018, Jane's Industry, 20 September 2017

13 Russian Military Budget, Globalsecurity.org  
<https://www.globalsecurity.org/military/world/russia/mo-budget.htm>;  
<https://www.janes.com/article/74248/russian-defence-budget-expected-to-be-cut-by-5-in-2018>;  
<http://www.janes.com/article/68766/russia-announces-deepest-defence-budget-cuts-since-1990s>

with the means available to it—from achieving its global status, particularly in the maritime domain.<sup>14</sup>

Russia's military doctrine, which was approved by Putin in 2014, reflects the influence of the crisis with Ukraine and the Russian response to the stance of the US and NATO on this conflict. Accordingly, it is expected that from time to time Russia will try to distance the EU countries one from the other, with the goal of weakening their unity. Russia will continue to maintain influence over the former FSU countries, through both “soft power” and “hard power”. Russia will also continue to intervene in Ukraine, in the Caucasus and in Central Asia and will oppose any attempt by NATO to extend its influence in the FSU.

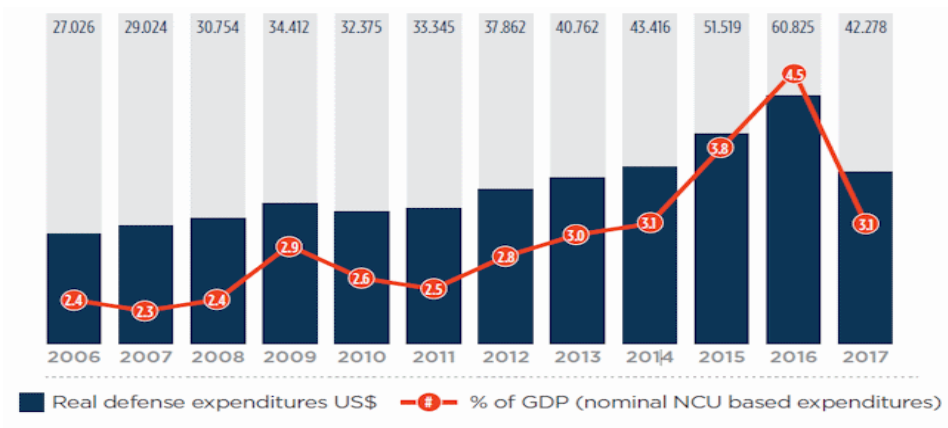


Figure 5:

<https://www.globalsecurity.org.military/world/russia/mo-budget.htm>

Russia completed a series of **large military exercises** in September 2018 which was called Vostok. Participating in the exercises this year for the first time were Chinese aerial, naval and ground forces. The Russians claim that this is the largest exercise in modern Russian history and that more than 300,000 soldiers, more than 1000 aircraft, helicopters and drones, about 80 warships and auxiliary ships and about 36,000 tanks participated. Both Moscow and Beijing issued declarations of cooperation in the exercise and the exercise was even accompanied by meetings between Russian President Vladimir Putin with senior Chinese officials during the

<sup>14</sup> Craig Caffrey, Russia announces deepest defence budget cuts since 1990s, IHS Jane's Defence Weekly, 16 March 2017, <http://www.janes.com/article/68766/russia-announces-deepest-defence-budget-cuts-since-1990s>

exercise. The main political significance of the declarations by Russia and China is the possible emergence of a strategic partnership whose goal is to deal with the threat that the two companies feel from continued US dominance in the international arena. It is not known whether the Chinese navy participated in any way in the exercise but this did not prevent it from sending a Dongdiao-class auxiliary general intelligence (AGI) ship which monitored the exercise.<sup>15</sup>

Russia is seeking to expand its control in the **Arctic region** based on the understanding that this territory is essential to its economic future and its security. Europe will remain at the focus of Russian economic activity, with emphasis on European markets for Russia's export of energy resources. The drop in the price of energy, which accounts for about 80 percent of Russia's exports, and the sanctions imposed on it by the West as a result of its invasion of Crimea have, as mentioned, contributed to the deepening economic crisis in Russia. Russia will continue to be **one of the largest exporters of weapons in the world**, and as a result of its dismal economic situation it will be prepared to offer highly advanced weapons—some of those weapons are even more advanced than those produced in the West—to anyone in the market. In 2017, **Turkey which is a NATO member** announced that it will acquire S-400 Triumf ground-to-air missiles from Russia in place of Western air defense missiles such as the Patriot. Turkey also reported that it had made a down payment on a contract worth \$2.5 billion and it is expecting to receive the missiles in October 2019.<sup>16</sup>

In order to meet the Russian challenge in Western Europe and Scandinavia the Americans have expanded the boundaries of the Second Fleet's activity to the region north of Scandinavia and the Arctic Circle and announced that this reflects the new national defense strategy which is being promoted by Secretary of Defense James Mattis. This move symbolizes the return to "Great Power Competition". According Admiral James Richardson, the commander of the US Navy, the new Second Fleet

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15 Sam Lagrone, China Sent Uninvited Spy Ship to Russian Vostok 2018 Exercise Alongside Troops, Tanks, US Naval Institute, September 17, 2018 [https://news.usni.org/2018/09/17/china-sent-uninvited-spy-ship-russian-vostok-2018-exercise-alongside-troops-tanks?utm\\_source=USNI+News&utm\\_campaign=ba137ef7e5-USNI\\_NEWS\\_DAILY&utm\\_medium=email&utm\\_term=0\\_0dd4a1450b-ba137ef7e5-233591665&ct=\(USNI\\_NEWS\\_DAILY\)&mc\\_cid=ba137ef7e5&mc\\_eid=6495944afc](https://news.usni.org/2018/09/17/china-sent-uninvited-spy-ship-russian-vostok-2018-exercise-alongside-troops-tanks?utm_source=USNI+News&utm_campaign=ba137ef7e5-USNI_NEWS_DAILY&utm_medium=email&utm_term=0_0dd4a1450b-ba137ef7e5-233591665&ct=(USNI_NEWS_DAILY)&mc_cid=ba137ef7e5&mc_eid=6495944afc)

16 Sebastien Roblin, America's Big Fear: Turkey Mixing F-35s and Russia's S-400 Air Defense System, The International Interest, July 7, 2017 <https://nationalinterest.org/blog/buzz/americas-big-fear-turkey-mixing-f-35s-and-russias-s-400-air-defense-system-25152>

“increases our strategic flexibility to respond — from the Eastern Seaboard to the Barents Sea – by means of expeditionary fleet operations where and when needed.”<sup>17</sup>

**Defense and security** will continue to be essential in both the virtual domain and the physical domain, including space and the cyber domain. The demand to protect the citizen of the various nations will increase in importance as a result of global population growth, climate change, a shortage of resources and a lack of stability in the international arena. The document National Defense Strategy 2018 describes an increasingly complex global security situation, which is characterized by open challenges to the free and open international order and the reappearance of long-term strategic competition between nations. The report itself admits that the military advantage previously enjoyed by the US is eroding, that there are more disruptions of the international order, which has been based on rules established after the Second World War and that the security situation is more complex than that faced by decision makers to date. International strategic competition, rather than terror, is now the main threat to US national security.<sup>18</sup> This strategic assessment views China as the main strategic competitor to the US and it is using economics in order to coopt its neighbors while maintaining a process of militarization in the South China Sea. Russia has violated the sovereignty of nearby countries and has suppressed—by means of veto—the economic, diplomatic and security decisions of its neighbors. Similarly, the foreign policy of North Korea and the rhetoric of its leaders continue despite the condemnation by the US and the sanctions it has imposed. Iran continues to sow the seeds of violence and remains the biggest challenge to stability in the Middle East. Despite the defeat of ISIS, the threats to stability remain. This complex security situation is defined by rapid technological change, challenges from adversaries in every operational domain and the effect on the current readiness for an armed confrontation. Such an environment does not allow for complacency. The US strategic assessment recommends carrying out a clear evaluation of the risks facing the US, recognition of the changing nature of war and a transformation of the way in which the US Department of Defense is run.

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17 Sam Lagorne, CNO: new 2nd fleet boundary will extend north to the edge of Russian waters, USNI News, August 27, 2018, [https://news.usni.org/2018/08/24/cno-new-2nd-fleet-boundary-will-extend-north-edge-russian-waters?utm\\_source=USNI+News&utm\\_campaign=97450bf836-](https://news.usni.org/2018/08/24/cno-new-2nd-fleet-boundary-will-extend-north-edge-russian-waters?utm_source=USNI+News&utm_campaign=97450bf836-)

18 US Department of Defense, Summary of the 2018 National Defense Strategy of the United States of America, Sharpening the American Military's Competitive Edge. <https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

**In the realm of maritime piracy**, in 2018 (up until the time of writing) there had been more than 20 boardings of ships which the pirates had intended to hijack, although only three cases—all of which occurred in the region of Western Africa—were successful.<sup>19</sup> In the region of the Gulf of Aden and the Horn of Africa, there were two incidents in which pirates opened fire on ships. In the first, in February 2018, they opened fire on a tanker east of the coast of Somalia, while in the second, in March 2018, they opened fire on a different tanker off the coast of Yemen. In both cases, the pirates did not manage to take control of the ships. The **cost** of dealing with the piracy threat in the Western Indian Ocean (East Africa) reached \$1.4 billion in 2017, a drop from \$1.7 billion in 2016 and from \$7 billion in 2010, which was the peak of attacks by Somalian gangs (see Figure 6). This improvement can be attributed to the activity of the naval forces and particularly in the north Indian Ocean and the Gulf of Aden. Nonetheless, the waters off Somalia and the Gulf of Aden, through which numerous tankers and other ships pass, is a high-risk region for piracy attacks.<sup>20</sup> Despite the international activity that was surveyed above, pirate groups have continued their illegal maritime activities, such as the smuggling of weapons and refugees.<sup>21</sup>

In recent years, various countries have organized to defend against the threat of piracy and in particular in the northwest Indian Ocean and in the Gulf of Aden. In November 2017, the UN Security Council renewed for another year the mandate of the international naval forces to participate in the struggle against piracy off the shores of Somalia and emphasized that this crime has intensified the instability in the country and has encouraged corruption and terror in the region. The Security Council stressed that the renewed authorization **applies only to the situation in Somalia** and does not affect the rights, obligations and responsibility of other member countries according to international law, including the Convention on the Law of the Sea.<sup>22</sup>

The problem of piracy is being dealt with by means of both international forces that were created for this mission and independent forces (China and Russia). Since 2008, China has been deploying its naval forces (People's Liberation Army Navy –

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19 MB Piracy & Armed Robbery Map 2018, <https://www.icc-ccs.org/piracy-reporting-centre/live-piracy-map>

20 The Telegraph, Piracy, 02 September 2018 <https://www.telegraph.co.uk/news/worldnews/piracy/>

21 Piracy and Armed Robbery Against Ships in East Africa 2016

22 United Nations, Meeting Coverage and Press Release, Unanimously Adopting Resolution 2383 (2017), Security Council Renews Authorization for International Naval Forces to Fight Piracy off Coast of Somalia, SC/13058, 7 November 2017, <https://www.un.org/press/en/2017/sc13058.doc.htm>

PLAN) to protect Chinese ships from pirate activity in the Gulf of Aden and Horn of Africa. The opening of a Chinese naval base in Djibouti and the operations of Chinese naval forces have led to an improvement in the operational capability of the Chinese navy far from its traditional theater of operations in East Asia and have indirectly given it blue water naval capabilities.<sup>23</sup> The activity has also led to a sharp drop in the number of incidents, although the economic burden of the activity remains heavy.

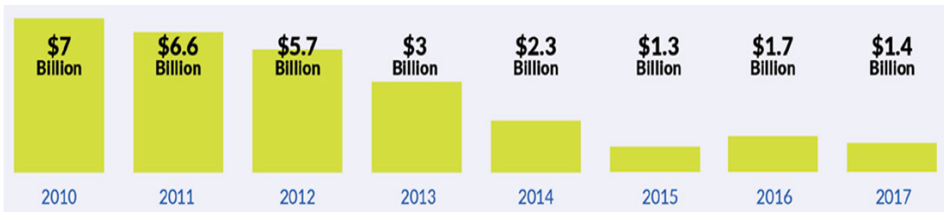


Figure 6: The economic price of Somali piracy during the period 2010-17. Source: The State of Maritime Piracy 2017 <http://oceansbeyondpiracy.org/reports/sop/summary>

## Main Trends in Global Maritime Trade

More than 80 percent of global trade by volume and more than 70 percent by value is transported by sea and handled by the various seaports all over the world. Thus, the contribution and importance of ocean transport to global trade and its development cannot be underestimated. In 2017, total seaborne trade grew by 2.8 percent, which represents an increase in terms of volume of 10.6 billion tons. The forecasts for the intermediate term indicate continued expansion with a planned annual growth rate of 3.2 percent from 2017 to 2022. The expected growth encompasses all of the types of cargo and the highest growth is expected in containers and dry bulk commodities.<sup>24</sup> Figure 7 below presents the trends in global seaborne trade during the period 2000-2017 and its breakdown according to type of cargo.

The three largest shipping companies (Maersk Line, Denmark; MSC, Switzerland; and the CMA-CGM Group, France) account for about 30 percent of the volume of container transportation (TEU).<sup>25</sup>

23 Emanuele Scimia, Anti-piracy mission helps China develop its blue-water navy, Asia Times, January 8, 2018, <http://www.atimes.com/anti-piracy-mission-helps-china-develop-blue-water-navy/>

24 Review of Maritime Transport 2017, United Nations Conference on Trade and Development UNCTAD, [http://unctad.org/en/PublicationsLibrary/rmt2017\\_en.pdf](http://unctad.org/en/PublicationsLibrary/rmt2017_en.pdf)

25 The Global Facilitation Partnership for Transportation and Trade (GFP), <http://www.gfptt.org/node/2785>

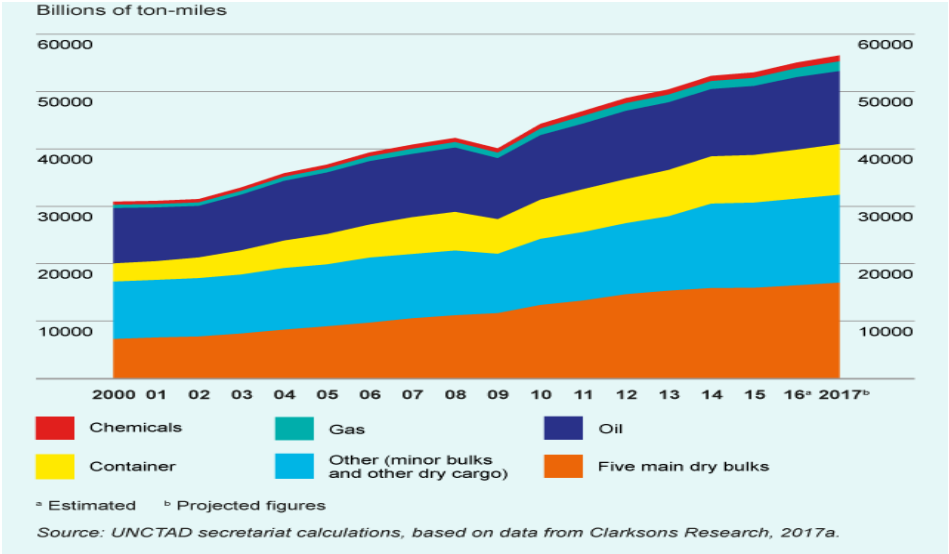


Figure 7:

With respect to container traffic, Figure 8 below presents the throughput of containers in ports during 2017 (in TEU) and also the global increase in that type of trade during 2017. The countries of Asia account for the majority of the increase (64 percent) while the European countries lag well behind them (16 percent).

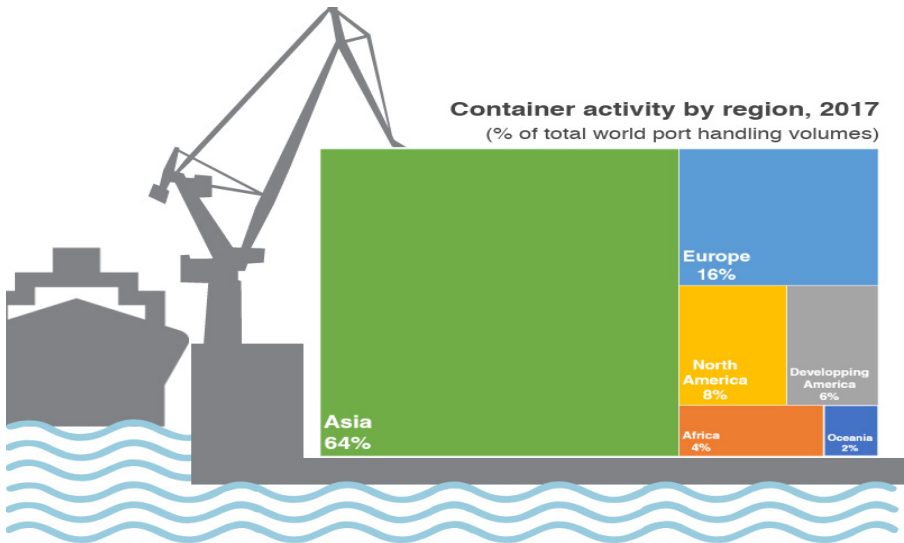


Figure 8:



Figure 9 presents the changes in the volume of transport for the fleet of oil tankers during the period 1980-2017. In 2017, the global fleet of oil tankers had a capacity of 535 million tons (deadweight tons) and it accounted for about 30 percent of global seaborne trade, which reflects the growing fuel needs of the developing economies (and particularly those in Asia).<sup>26</sup> This can also be seen in Figure 10 which presents the daily volume of oil transported by tankers through one of the main choke points in millions of barrels.

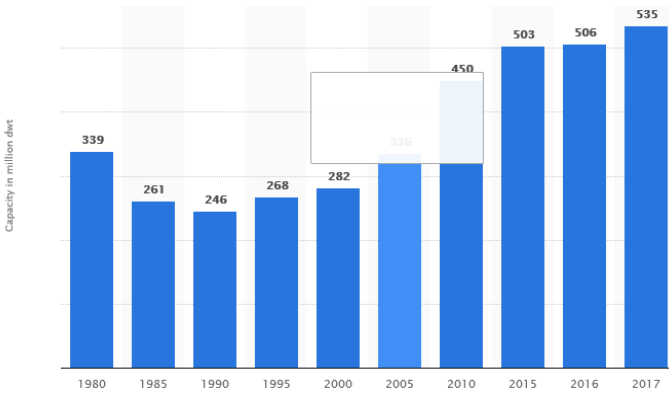


Figure 9: The changes in the volume of transport by oil tankers during the period 1980-2017 (in million DWT).

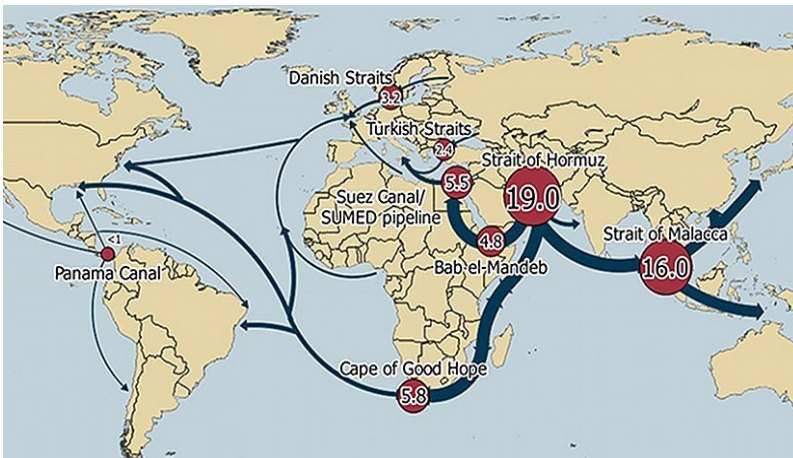


Figure 10: The daily quantity of oil transported through the main choke points and its principal destinations.

26 Statista, the statistic portal <https://www.statista.com/statistics/267605/capacity-of-oil-tankers-in-the-world-maritime-trade-since-1980/>

After having played a decisive role in the creation of the global trading network since the end of the Second World War, the US under President Trump has changed course and is no longer emphasizing a policy to seek new free trade arrangements as part of multilateral agreements. Even if the Americans view the free trade agreements positively, they have become increasingly skeptical on this issue, as a result of the situation of the US economy and the growing national debt (see Figure 7).

The discussion held at the beginning of September 2018 in Washington **between the US and China**, the two largest economies in the world, did not result in any visible progress. During the summer of 2018, the US imposed tariffs on additional Chinese goods with a value of \$16 billion. Beijing did not take long to respond, which raised the amount of trade affected by these moves to \$100 billion. In October 2018, the US, Mexico and Canada declared a new trade treaty between them. The President also placed new restrictions on investment from China. The Americans are demanding long-term structural changes in Chinese policy, such as ending industrial subsidization and the theft of intellectual property. Figure 11 presents the scope of trade between the US and China during the period 2000-2017 and the size of the annual trade deficit. Figure 12 presents the sea freight indicators for the period 2007-2017 and the adverse effect of the Trump administration following the declaration of its tariff policy.

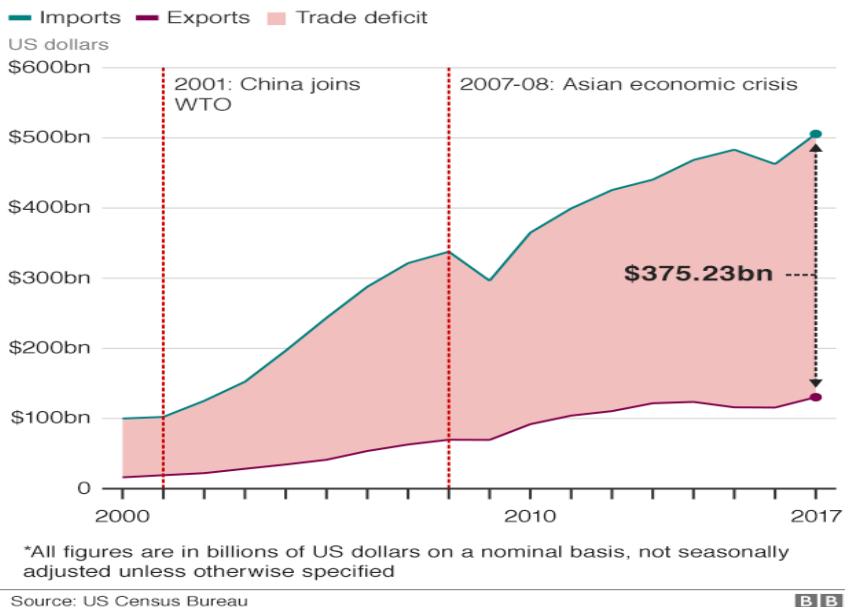


Figure 11:

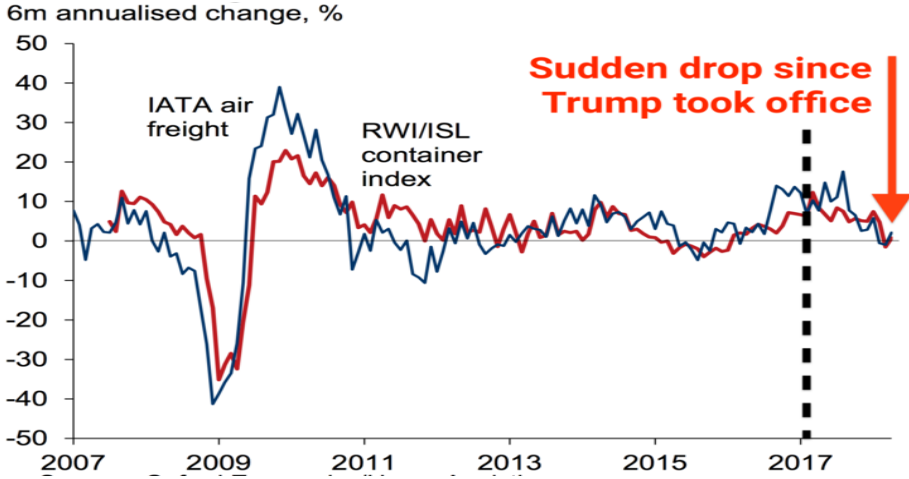


Figure 12:

Three countries dominated the shipbuilding industry in 2017: China (36 percent), South Korea (34 percent) and Japan (20 percent) (see Figure 13) and accounted for 90 percent of all merchant vessels worldwide. Figure 14 presents the commercial fleet in 2018 according to nationality (ignoring flag of convenience registration), which shows that the leading countries are Greece, Japan and China.



Ships built by country of building, 2014-2017  
Percentage of all economies, in Gross Tons (GT)

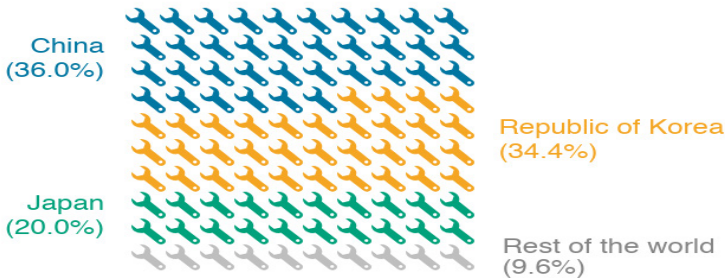


Figure 13:

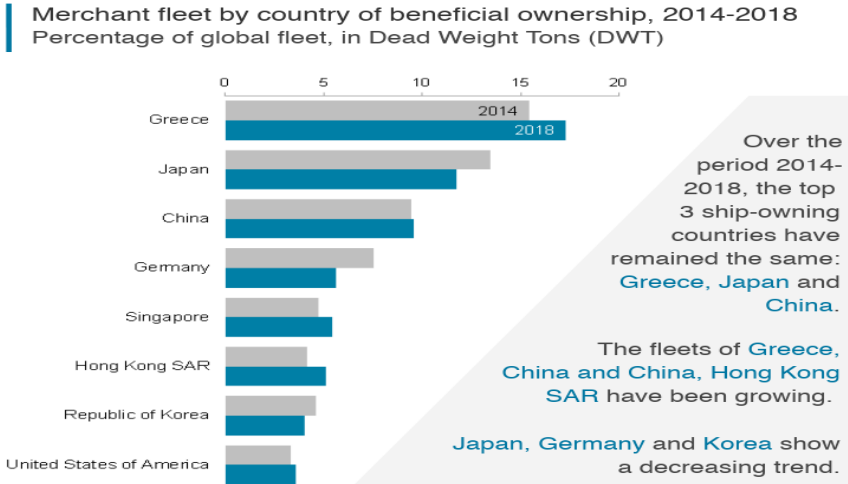


Figure 14:

## New Sea Routes

The desire to circumvent the existing choke points can be seen in the ambitious plans to build and expand canals worldwide. About two years ago, the expansion of the Suez Canal was completed and the projects that are currently on the drawing boards are a canal in Nicaragua and the Kra Canal in Central Thailand.

**The Nicaragua Canal** is meant to compete with the Panama Canal. A contract was signed in 2014 between the Chinese billionaire Wang Jing, by means of the Hong Kong-based Nicaragua Canal Development Group, an international finance group. As a result of losses incurred by the media billionaire and the loss of a large part of his wealth, which was estimated at \$10 billion, the digging of the canal was interrupted and its future is unclear.<sup>27</sup>

Notwithstanding the agreement signed in 2016 between China and Thailand regarding the long-term project to build the **Kra Canal**, which is also known as the Thailand Canal, there was no real progress in 2018. The canal is meant to cut across southern Thailand in the Kra region and will provide a new route that will

<sup>27</sup> Nicaragua's US\$50b rival to Panama Canal 'going ahead slowly' as funding evaporates and Chinese investor keeps low profile, The south China Morning Post, February 22, 2018 <https://www.scmp.com/news/world/americas/article/2134250/nicaraguas-us50b-rival-panama-canal-going-ahead-slowly-funding>

shorten sailing time from the East to Europe by about 1200 kilometers, due to the circumvention of the Strait of Malacca.



Figure 15: Possible routes for the Northwest Passage through the Arctic Ocean. Source: Geology.com/MapResources

There was an interesting development in this context with regard to the Northwest Passage through the **Arctic Ocean**. Until now, the route was not passable for regular merchant ships due to the permanent thick layer of ice (see Figure 15). Due to climate change, the ice is no longer as thick and it is predicted that if this trend continues, in another approximately two decades **it will possible to sail this route during most of the year**. As a result, the trip from Europe to East Asia will be shortened by about 2500 miles relative to the current route. In addition, the transport of oil from Alaska to the East Coast of the United States by tanker will be much quicker.

It is estimated that the savings in the cost of sea transport will be in the billions of dollar. In the meantime, Maersk Line, the largest shipping company in the world, is about to launch a new container ship line **on a different Arctic route along the northern coast of Russia**. The current layer of ice makes it possible to offer a possible future alternative to sail to the East not by way of the Suez Canal (see Figure 16).<sup>28</sup> Evidence of this was provided by the Venta Maersk container ship with

28 William Booth and Amie Ferris-Rotman, Russia's Suez Canal? Ships start plying a less-icy Arctic, thanks to climate change, The Washington Post, 8 September 2018 [https://www.washingtonpost.com/world/europe/russias-suez-canal-ships-start-plying-an-ice-free-arctic-thanks-to-climate-change/2018/09/08/59d50986-ac5a-11e8-9a7d-cd30504ff902\\_story.html?utm\\_term=.0fdf923e5fb9](https://www.washingtonpost.com/world/europe/russias-suez-canal-ships-start-plying-an-ice-free-arctic-thanks-to-climate-change/2018/09/08/59d50986-ac5a-11e8-9a7d-cd30504ff902_story.html?utm_term=.0fdf923e5fb9)

a displacement of 42,000 tons and a capacity of 3600 containers, which sailed in the summer of 2018 from the port of Vladivostok on the East coast of Russia to the destination port at St. Petersburg by way of this route, while carrying containers of frozen fish. The traffic on this route accumulated momentum in the summer months of 2018 and additional ships carrying oil and gas have used it. The ice layer in the Arctic Ocean reached record low levels in January 2018 and the ice thickness in the Bering Sea has reached the lowest levels ever recorded. In March 2018, temperatures in the region were higher than average by 15 degrees Celsius. There is concern about the **environmental impact** of the ships sailing on these routes because they use burn heavy fuel oil. It is feared that they will worsen the environmental situation due to their emission of harmful oxides of nitrogen and sulfur, as well as black carbon, which remain in a maritime environment for an extended period. In Antarctica, it is prohibited from using heavy fuel, but it has not yet been imposed in the Arctic region by the IMO.<sup>29</sup>

The Venta Maersk will attempt to become the first large container ship to journey through the Arctic Ocean. The Northern Sea Route passes predominantly Russian territorial waters and could be as much as two weeks faster than the typical Suez Canal passage.



Figure 16: Comparison of the sea route through the Arctic Ocean and the route through the Suez Canal

29 Harry Cockburn, Maersk launches first container ship through Arctic route in alarming sign of global warming, The Independent, 21 August 2018. <https://www.independent.co.uk/environment/maersk-ship-arctic-route-launch-global-warming-climate-change-a8500966.html>

### Exclusive Economic Zones (EEZ) and the disputes surrounding them

- Since the coining of the term **Exclusive Economic Zone in 1982** and the formulation of the UN Convention on the Law of the Sea, **technologies for the deep-water search for natural gas, its production and transport have developed at an impressive pace**. It is expected that by 2040, progress in underwater robotics and telepresence capabilities will result in a mature industry that will have access to oil and gas deposits and minerals below the seabed, which until now were inaccessible.<sup>30</sup>
- Many countries have begun the planning process for activity in their territorial waters by means of Marine Spatial Planning, which is meant to resolve conflicts between the various uses of this domain. **In Israel**, the Planning Branch of the Ministry of Finance has completed a policy paper planning process that included a proposed work plan for the preparation of a comprehensive policy document. In October 2017, a first draft was distributed of "A Policy for Israel's Maritime Domain in the Mediterranean; Stage II Report – First Draft for Comment."<sup>31</sup> In the opinion of the author, the plan (which in general is to be welcomed) has two main deficiencies: first, it does not include the Gulf of Eilat and the Red Sea as part of Israel's maritime domain; and second, it is lacking the overall targets of a maritime strategy (which are decided on by the political leadership).
- In the context of delimitation of the maritime borders between neighboring countries, there still remain a large number of **inter-state disputes** with respect to the borders of the EEZs and also fishing rights in these areas. The most prominent dispute continues to be that in Southeast Asia and it appears that despite the ruling against China in the International Court in the Hague in July 2016, China has recently been continuing in its efforts to create facts on the ground and has even recruited the support of the President of the Philippines (which submitted the claim to the International Court in the Hague in 2013).

In the **Eastern Mediterranean**, there remain **three** main unresolved disputes:

1. **The claim by northern Cyprus** (under the auspices of Turkey) to part of the EEZ around Cyprus.
2. **Turkey's claim** to part of Cyprus' EEZ.

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30 2040 timeline contents, Deep ocean mining operations are widespread, Future Timeline Net, <http://futuretimeline.net/21stcentury/2040.htm#deep-ocean-mining-2040>

31 Policy Paper for Israel's Maritime Domain – Stage II Report: Policy for Israel's Maritime Domain – first draft for comment, Ministry of Finance, Planning Authority, Israel's Maritime Domain, October 2017. [http://www.iplan.gov.il/Documents/Report\\_4.pdf](http://www.iplan.gov.il/Documents/Report_4.pdf) [Hebrew]

3. **Lebanon's claim** that the agreement between Israel and Cyprus includes within it part of the territory that belongs to Lebanon (definition of the maritime border between Israel and Lebanon).

In 2010, Lebanon submitted a complaint to the UN that the border of Israel's claimed EEZ is located within its EEZ. Israel submitted its interpretation to the UN a year later. The US has sought to mediate between the sides in an effort to reach a compromise. The size of the disputed area is about 850 square kilometers and it is shaped like a triangle, with its vertex in Rosh Hanikra and its base on the line shared by the EEZs of Israel, Lebanon and Cyprus. The agreement signed between Israel and Cyprus in December 2010 supports the Israeli interpretation. A similar agreement between Cyprus and Lebanon was not ratified by the Lebanese Parliament. In this context, it should be mentioned that the government of Lebanon issued a call for oil and gas survey companies to submit their candidacies to carry out underwater surveys in a number of areas, some of which are within the area disputed by Israel and Lebanon. The confrontation between Israel and Lebanon over Bloc 9 has already gone on for over a decade.



Figure 17: Lebanon's version of its territorial waters

The history of the dispute is dense with declarations of ownership and threats from both sides. However, the moment of truth is nearing since Lebanon has decided to take action. At the end of January 2018, Lebanon signed the first exploration and production agreements (EPAs) with a consortium of companies composed of Total,



a French company, as operator, ENI, an Italian company, and Novatek, a Russian company. The consortium proposed two alternatives to the government of Lebanon in October 2017, which, as mentioned, approved the proposal to drill in Bloc 4 and Bloc 9 (which is in the area in dispute with Israel). After the signing, the stage of exploration will begin and the consortium is required to drill two wells in 2019—one in each bloc. The main problem to be solved is the question of the disputed maritime border between Lebanon and Israel.

Israeli Defense Minister Avigdor Lieberman made the following declaration regarding Bloc 9 at a gathering held in Tel Aviv on January 31, 2018: “Multinational companies will make a serious error if they participate in Lebanon’s exploratory drilling in territory belonging to Israel and thus violate accepted rules.”<sup>32</sup> His words were met with anger in Lebanon and once again raised the issue of the maritime dispute between Lebanon and Israel. His speech again pointed the spotlight onto the conflict and again caught the attention of Washington. Nonetheless, a senior Lebanese official who spoke with Reuters said that Israel has conveyed messages by way of the special US envoy, according to which it is not interested in escalation. Despite the impassioned rhetoric on both sides, the quiet in the region has been maintained for over a decade. Is the US planning to renew its mediation efforts? Will the UN decide to intervene? The granting of a concession in Bloc 9, including the territory being demanded by Israel, again positions the issue as a problem that should be solved one way or another at the earliest possible opportunity.<sup>33</sup>

## The Main Naval Forces – Trends and Changes

In what follows, we will survey the changes and trends in the largest navies worldwide relative to the previous report, with emphasis on each navy’s theaters of operation, its **tactics** and its planned **buildup of force**.

The **US navy**: The US has the largest defense budget in the world and accordingly the US Navy is the most powerful in the world. **In July 2018, the US navy numbered 285 vessels.**<sup>34</sup> In 2016, the commander of the US Navy published an evaluation of

32 Pazit Rabina, “Stormy waters: the first gas warfare between Israel and Lebanon,” *Makor Rishon*, February 7, 2018. (Hebrew)

33 Lebanon’s oil and gas sector: A roadmap for 2018, Middle East Strategic Perspectives, 6 February 2018. <https://www.mesp.me/2018/02/06/lebanons-oil-gas-sector-roadmap-2018/>

34 Status of the US Navy as of September 18, 2018  
[https://www.navy.mil/navydata/nav\\_legacy.asp?id=146](https://www.navy.mil/navydata/nav_legacy.asp?id=146)

the naval arm and the number of vessels needed by the Navy (355) in order to fulfill its various missions. Table 1 shows the required vessels according to type.

On Trump's entry into the White House, a new National Defense Strategy was formulated and approved in January 2018, with focus on China and Russia as potential adversaries in a new era of competition for power between the superpowers. According to the guidelines of the new strategy and despite the fact that the US is still in confrontation with terror groups in Afghanistan, Iraq and Syria, the new strategy views the military buildup of China and Russia as the main threat to the United States, alongside the threat of ballistic missiles and the nuclear threat from rogue states, such as North Korea and Iran.

Following the publishing of the National Defense Strategy, the US Navy announced that notwithstanding the work done in 2016, it is carrying out a Fleet Structure Assessment (FSA), which may lead to a modification of the Navy's previous target of 355 vessels.

Table 1: Comparing the 2014 assessment of vessels needed by the US Navy and the 2016 assessment

Type / Class	2014 FSA	2016 NNN
Ballistic Missile Submarines <sup>35</sup>	12	12
Aircraft Carriers <sup>36</sup>	11	12
Attack Submarines	48	66
Guided Missile Submarines <sup>37</sup>	0	0
Large, Multi-Mission, Surface Combatants	88	104
Small, Multi-Role, Surface Combatants	52	52
Amphibious Warfare Ships	34	38
Combat Logistics Force	29	32
Command and Support	34	39
<b>Total</b>	<b>308</b>	<b>355</b>

35 Replace the 14 Ohio-class SSBNs with 12 new Columbia-class SSBNs starting in the late 2020s. Operational availability will be comparable.

36 The current profile will achieve the NNN requirement of 12 ships beyond 2060; options to accelerate are under review including multi-ship procurements and reducing procurement centers.

37 The 4 SSGNs now in service retire in the mid-2020s. To meet NNN submarine payload and Special Forces requirements when the 4 SSGNs retire, Navy is inserting Virginia Payload Modules (VPM) into Block V Virginia-class attack submarines beginning in FY2019. A payload-based large diameter submarine will follow VPM late in the plan in accordance with the Tactical Submarine Evolution Plan (TSEP), which features a fast, lethal next generation attack submarine and a large-diameter, next-generation payload based submarine.

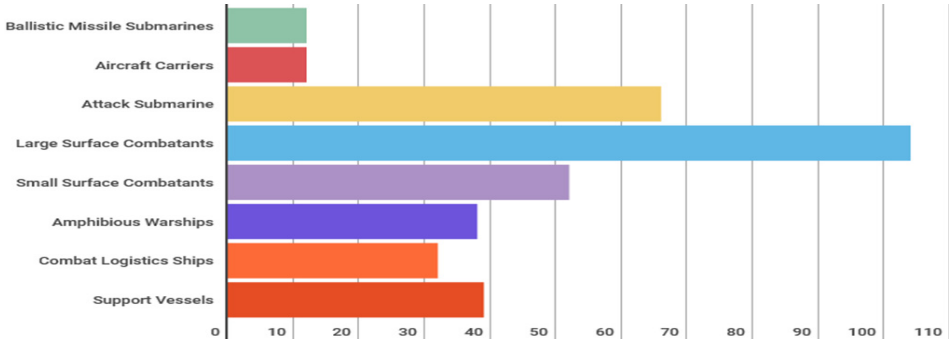


Figure 18: Composition of the 355-vessel Navy according to the 2016 assessment

Chief of Naval Operations Admiral John Richardson has stated that "We have a new National Security Strategy, a new National Defense Strategy and we'll be putting out a naval component to that National Defense Strategy out here shortly" and he added that it makes sense that the implementation of this strategy should relate to the structure of forces that was planned in the 2016 assessment carried out by the Navy.<sup>38</sup> The commander claimed that the 2016 assessment related to the growing power of both Russia and China, such that the assessment carried out by the Navy in 2016 constitutes a suitable basis of the New Defense Strategy.

Vice Admiral Bill Merz, the Deputy Chief of Naval Operations for Warfare Systems (OPNAV N9), who is responsible for carrying out the FSA stated that since 2016 "We have done multiple studies on the architecture of the Navy and the size of the Navy. Every single one of them says we have to grow, and we have to grow in these fundamental types of ships. So we don't expect much of that to change with the next FSA; maybe it changes on the margins, maybe another number we're shooting for, but it's going to be bigger than we are today."

The **2019 budget of the Naval Office** grew by about \$21 billion relative to the 2018 budget (which was \$52 billion larger than in the previous year; see Figure 19). In the presentation of the budget request to the subcommittee of the US House of Representatives, Assistant Secretary of the Navy James Geurts presented the complex challenges facing the US navy. Geurts stated that the strategic environment is becoming increasingly sophisticated, uncertain and technologically dense. This is in addition to the spread of advanced conventional and cybernetic weapons among state and non-state players and

38 Sam Lagrone, Navy Working New Fleet Size Study Following Latest Strategic Reviews, USNI News, March 7, 2018 <https://news.usni.org/2018/03/07/navy-working-new-fleet-size-study-following-latest-strategic-reviews>

the erosion of the US Navy's competitive advantage in regions where it had long enjoyed relative superiority, a phenomenon that is expected to continue as long as rival nations try to undermine American hegemony at sea. Furthermore, in certain regions there is also violent competition over national resources and there are natural disasters, social unrest, cyber attacks and regional conflicts, in addition to the proliferation of advanced weapons. All this creates a series of challenges to a force with global response capability.<sup>39</sup> The Assistant Secretary of the Navy stated that the 2019 budget will prioritize three objectives: (1) Steady, sustainable growth and establishment of minimum baseline acquisition profiles that grow the force at a stable, affordable rate. This includes the sustainment of the industrial base at a level that supports affordable acquisition, predictable and efficient maintenance and modernization, and an appropriately sized workforce for more aggressive growth if additional resources become available. (2) Aggressive growth that more rapidly attains the same warfighting requirements as increased resources and industrial capacity permit. (3) Service Life Extensions (SLEs) that evaluate the potential additional service life that can be gained through restoration and modernization based on capability improvement costs versus unit replacement criteria.

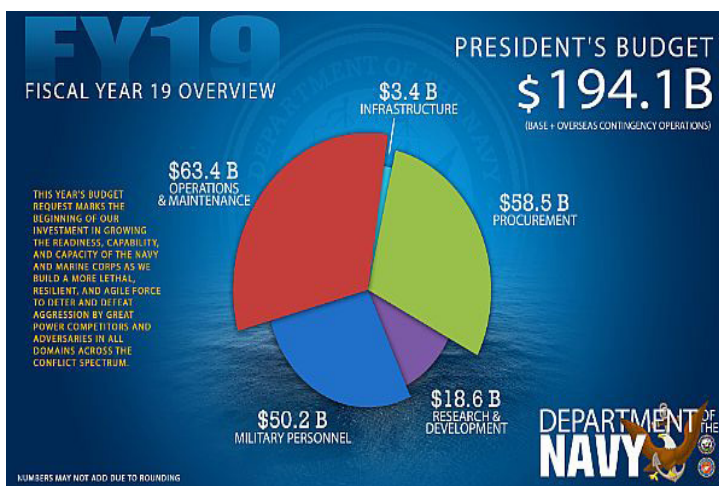


Figure 19: Proposed Office of the Navy budget and its uses for 2019

39 Statement of the honorable James F. Geurts, Assistant Secretary of the Navy for Research, Development and Acquisition, and Lieutenant General Robert S. Walsh Deputy Commandant Combat Development and Integration Commanding General Marine Corps Combat Development Command and Vice Admiral William R. Merz Deputy Chief of Naval Operations for Warfare Systems (OPNAV N9), before the Subcommittee on Sea power and Projection Forces of the House Armed Service Committee on Department of the Navy Sea power and Projection Forces Capabilities, P. 2, MARCH 6, 2018. <https://docs.house.gov/meetings/AS/AS28/20180306/106950/HHRG-115-AS28-Wstate-MerzW-20180306.pdf>

The number of vessels in the US Navy is planned to grow in 2019 from 282 to 299. The target of 355 vessels set by the US Navy will not be achieved within the framework of the multi-year budget even by the end of the next decade, at which time the total number of vessels will be 320. Table 2 presents the increase in the various types of vessels as submitted for approval to the US Congress in the proposed 2019 budget.<sup>40</sup> The plan increases the number of warships by 11 relative to the plan presented in 2018 and although the target of 350 vessels—which was recommended by the commander of the US navy in the assessment published at the end of 2016—is not achieved, it creates a foundation that will make it possible—starting from 2030—to accelerate shipbuilding in order to reach the target. It is worth mentioning that the plan presented by the Office of the Navy will have to cope with a more challenging budget environment and possible changes in the composition of the House of Representatives following the mid-term elections in November 2018, which may make its approval more difficult.

Table 2: Plan for construction of US naval vessels for the period 2020-2048

Year	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
Aircraft Carrier	11	11	11	12	12	12	11	11	11	11	11	11	11	11	11
Large Surface Combatant	92	95	98	99	101	104	103	101	101	100	99	97	93	92	91
Small Surface Combatant	31	34	37	35	39	32	32	33	35	37	39	41	43	45	46
Attack Submarines	52	53	52	52	51	48	46	45	44	42	44	45	47	48	50
SSGNs/Large Payload Submarines <sup>4</sup>	4	4	4	4	4	4	4	2	1						
Ballistic Missile Submarines	14	14	14	14	14	14	14	14	13	13	12	11	11	11	11
Amphibious Warfare Ships	33	33	34	34	35	36	36	37	36	37	37	37	37	37	39
Combat Logistics Force	29	29	30	31	31	32	32	32	32	32	32	31	32	32	32
Support Vessels	33	35	34	37	39	39	40	40	41	41	41	41	40	41	41
<b>Total Naval Force Inventory</b>	<b>299</b>	<b>308</b>	<b>314</b>	<b>318</b>	<b>326</b>	<b>321</b>	<b>318</b>	<b>315</b>	<b>314</b>	<b>313</b>	<b>315</b>	<b>314</b>	<b>314</b>	<b>317</b>	<b>321</b>
Year	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Aircraft Carrier	11	11	11	11	11	11	10	11	10	10	10	11	10	10	9
Large Surface Combatant	90	88	89	90	93	95	96	96	95	94	93	92	91	91	92
Small Surface Combatant	48	51	54	55	56	58	59	58	57	54	52	51	50	51	49
Attack Submarines	52	54	56	58	58	59	59	59	61	61	62	63	64	65	66
SSGNs/Large Payload Submarines										1	1	1	2	2	2
Ballistic Missile Submarines	11	11	11	10	10	10	10	11	12	12	12	12	12	12	12
Amphibious Warfare Ships	37	35	36	36	36	38	37	37	36	36	36	36	37	35	35
Combat Logistics Force	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Support Vessels	41	42	42	42	40	39	38	38	38	38	38	38	38	38	38
<b>Total Naval Force Inventory</b>	<b>322</b>	<b>324</b>	<b>331</b>	<b>334</b>	<b>336</b>	<b>342</b>	<b>341</b>	<b>342</b>	<b>341</b>	<b>338</b>	<b>336</b>	<b>336</b>	<b>336</b>	<b>336</b>	<b>335</b>

40 Office of the Chief of Naval Operations, Deputy Chief of Naval Operations (Warfare Systems) (N9) Report to Congress on the Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019, Annual Long-Range Plan for Construction of Naval Vessels for Fiscal Year 2019 February 2018.

Alongside the increase in number of vessel required by the US navy, there has been vocal criticism among government officials regarding the **operational availability of the aircraft carrier fleet**. Figure 20 below presents the operational availability of the US fleet of aircraft carriers since 1965. It can be seen that since the end of the Cold War in 1992 and since 2013 operational availability has not managed to pass the 25-percent threshold.<sup>41</sup>

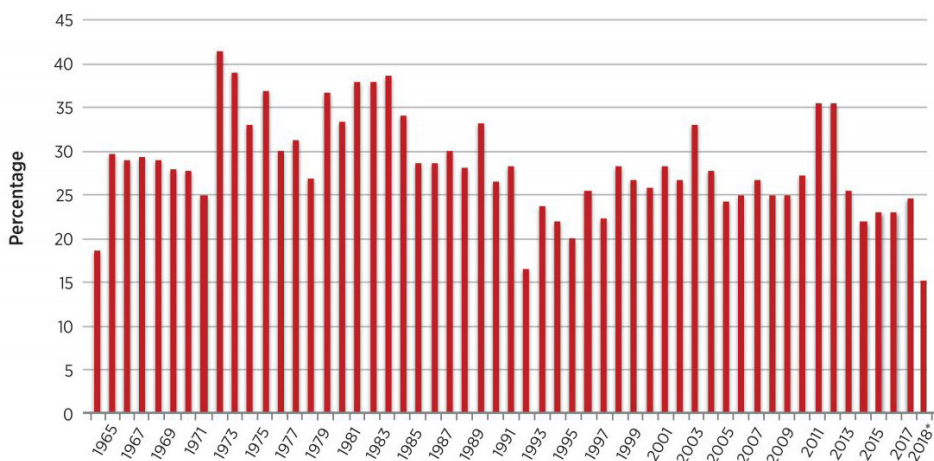


Figure 20: Operational availability of American aircraft carriers during the period 1965-2018

With respect to the **development of unmanned platforms**, the US navy has stated in an unclassified document published in 2018 that it sees huge potential in unmanned systems and the capabilities they provide and accordingly it has formulated a roadmap for their development. Nonetheless, it states that the use of unmanned autonomous systems will not bring about "fundamental changes in the way the navy operates," which constitutes somewhat of a contradiction.

The roadmap formulated three years ago was meant to be implemented by the US navy (by the Unmanned Warfare Systems Directorate - N99) was shelved in March 2018 on the instructions of Assistant Secretary of the Navy for Research, Development and Acquisitions James Geurts and it was claimed that a new roadmap had been adopted in a new organizational framework. Geurts admitted

41 Sam Lagrone, U.S. Aircraft Carrier Deployments at 25 Year Low as Navy Struggles to Reset Force, USNI, September 26, 2018 [https://news.usni.org/2018/09/26/aircraft-carrier-deployments-25-year-low?utm\\_source=USNI+News&utm\\_campaign=827217a1a4-USNI\\_NEWS\\_DAILY&utm\\_medium=email&utm\\_term=0\\_0dd4a1450b-827217a1a4-233591665&ct=t\(USNI\\_NEWS\\_DAILY\)&mc\\_cid=827217a1a4&mc\\_eid=6495944afc](https://news.usni.org/2018/09/26/aircraft-carrier-deployments-25-year-low?utm_source=USNI+News&utm_campaign=827217a1a4-USNI_NEWS_DAILY&utm_medium=email&utm_term=0_0dd4a1450b-827217a1a4-233591665&ct=t(USNI_NEWS_DAILY)&mc_cid=827217a1a4&mc_eid=6495944afc)

that "unmanned systems will have to overcome policy and technology barriers, but the fact that there are barriers and boundaries today does not mean that there are going to be boundaries also in the future."<sup>42</sup> It is possible to say that despite the development of systems such as Knife Fish, a minesweeper for seabed mines, the large Snakehead underwater vehicle for intelligence gathering missions, the huge Orca underwater anti-mine vehicle and the unmanned Sea Hunter surface vehicle, there are numerous barriers in the US navy to the introduction of unmanned vessels for operational activities.

**The approval of the new Nuclear Posture Review and its effect on the US Navy:** In January 2017, President Trump instructed Defense Secretary James Mattis to carry out a Nuclear Posture Review. The President make it clear that his first priority is to protect the United States, its allies and other partners. He further emphasized that although there is a long-term goal of nuclear disarmament, in the meantime the United States must ensure that it has modern, flexible and resilient nuclear capabilities which will be safe and secure, as long as there exist nuclear weapons in the world. The directive states that the US itself remains committed to its efforts to support eventual nuclear, biological and chemical disarmament. The US has reduced its nuclear arsenal by more than 85 percent since the height of the Cold War and has not developed any new nuclear capabilities for more than two decades. Nevertheless, the various threats it faces have intensified since the publishing of the last Nuclear Posture Review in 2010. The US is currently facing a more varied and sophisticated nuclear threat than in the past, with its adversaries working are feverishly on development programs, both of nuclear warheads and the delivery systems themselves (see Figure 21).<sup>43</sup>

In the context of the part played by the **US navy in the new Nuclear Posture**, the Review states that "The United States currently operates 14 OHIO-class SSBNs and will continue to take the steps needed to ensure that OHIO SSBNs remain operationally effective and survivable until replaced by the COLUMBIA-class SSBN. The COLUMBIA program will deliver a minimum of 12 SSBNs to replace the current OHIO fleet and is designed to provide required deterrence capabilities for

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42 Richard Tuttle, The U.S. Navy sees vast potential for unmanned systems, The Association for Unmanned Vehicle Systems International (AUVSI), 7 September 2018. <https://www.auvsi.org/unmanned-systems-magazine-us-navy's-new-roadmap-sees-vast-potential-unmanned-systems>

43 Office of the Secretary of Defense, US Nuclear Posture Review, Secretary Preface, February 2018 <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF>

decades." A major change in American nuclear capability will be accomplished by the development of a nuclear warhead with reduced payload, both for submarine-launched ballistic missiles (SLBM) and submarine-launched cruise missiles (SLCM). The justification for introducing this type of warhead into the US nuclear arsenal is to allow it to penetrate the enemy's advanced air defense systems, as well as facilitating the options for graduate exacerbation of the nuclear response and increasing its reliability. In this context, it is worth mentioning the missile systems that have until now been deployed on American ballistic missile submarines (SSBN) included only high-payload warheads.<sup>44</sup>

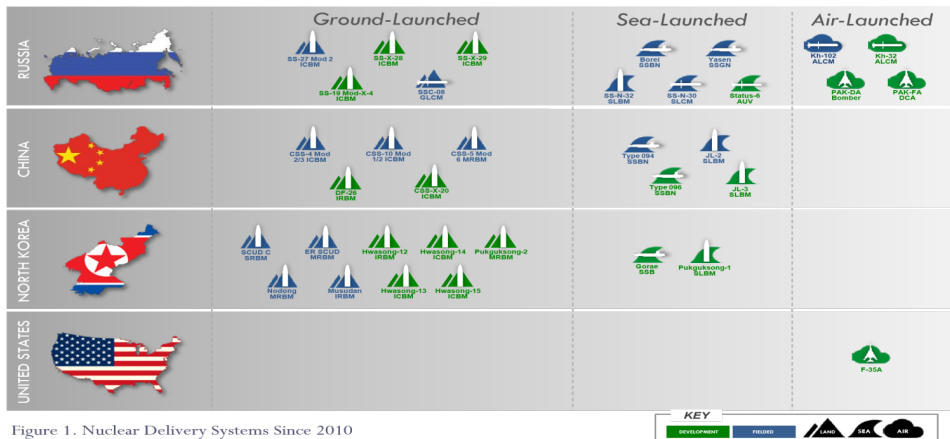


Figure 1. Nuclear Delivery Systems Since 2010  
Data provided by the DoD

Figure 21: Development of new nuclear warhead delivery systems by Russia, China, North Korea and the US since 2010

Figure 22 presents the **deployment of American vessels** in the various theaters of operation in 2017 and the planning and execution during 2018. The chart shows the continuing shift of the US center of gravity toward the western Pacific Ocean and the South China Sea region, where there are about 50 vessels deployed. The shift of the center of gravity has led to a situation in which the number of warships in the Mediterranean (the Sixth Fleet) has dropped to an unprecedented low and only includes one command ship and a number of destroyers.<sup>45</sup>

44 Ibid. P. XII

45 Highlights of the Department of the Navy FY 2016 Budget, Introduction, P. 1-3



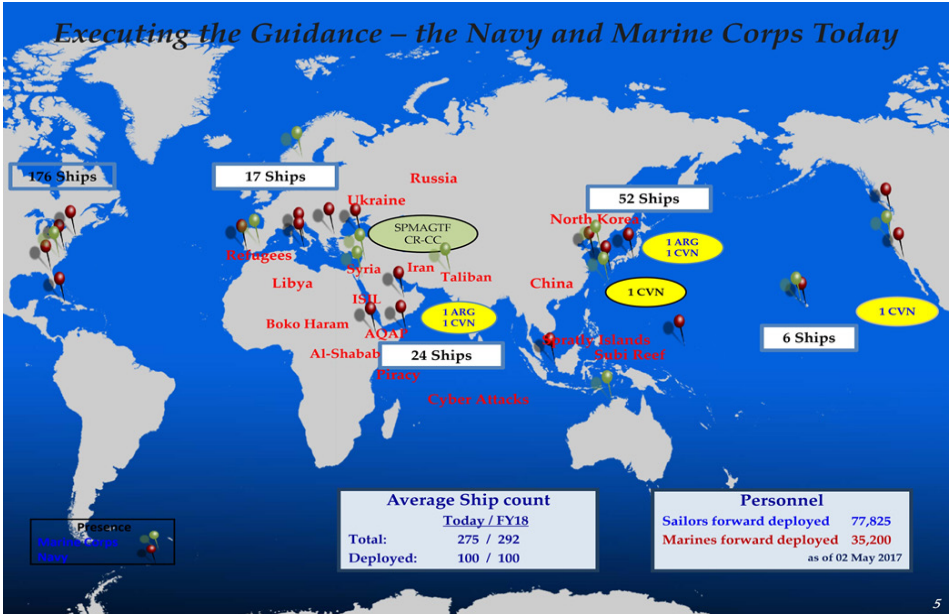


Figure 22: Deployment of US naval and marine forces in the summer of 2018

Another region of strategic importance to the US navy is the **Korean peninsula**, where North Korea—considered to be a rogue state—still constitutes a threat to the states in the region, and in particular South Korea, and especially in view of the expansion of North Korea's nuclear program and its development of long-range ballistic missiles. In the summer of 2017, North Korea threatened to use nuclear weapons against the US and its allies in the region.

The tension between the US and North Korea has declined somewhat following the summit talks held in Singapore in June 2018 between President Trump and the North Korean leader and a 12-point document that the two leaders signed. President Trump for his part suspended the joint maneuvers of the American and South Korean armies while North Korea reciprocated in July 2018 by returning the bodies of American soldiers that had been missing since the Korean War and also dismantling a nuclear test site. Following the meeting between Trump and Kim Jong-un, North Korea is trying to appease President Trump, and at the North Korean military parade at the beginning of September 2018 to mark 70 years since the founding of North Korea, no long-range ballistic missiles with nuclear capability were displayed, unlike in previous years. US Defense Secretary Mattis stated that the “We took the step to suspend several of the largest exercises as a good-faith measure coming out of the

Singapore summit; the small-scale exercises of the two armies will continue."<sup>46</sup> The President himself cancelled the joint military exercise in June because it was "costly" and "provocative". In any case, the demilitarization of the Korean peninsula is still a long way off.

**The activity of the Sixth Fleet in the Mediterranean:** The deployment of the fleet in the **Mediterranean** and its size has in the past been influenced by two main factors:

1. The Cold War.
2. A major source of oil.

The conclusion of the Cold War and the drop in the price of oil and gas, including the growth of its domestic energy sources, have led the US to reduce its presence in the Mediterranean. The Sixth Fleet has shrunk in size to one command ship which is based in Italy and four Ticonderoga-class missile destroyers. In April 2017, US forces attacked targets in Syria in response to chemical attacks by the regime. A total of 59 Tomahawk cruise missiles were launched at the base from which the aircraft that had attacked the Syrian city of Idlib with chemical weapons had taken off.

Prior to the attack by Assad's forces and those of his Russian allies on Idlib in the autumn of 2018, Moscow claimed that the Jihadists controlling Idlib planned to stage a chemical attack and to blame the Assad regime for carrying it out, with the goal of involving the West in the Idlib campaign. In a typical show of strength, the Russians reinforced their naval force west of Syria, even if it was clear that they have no significant role to play in the planned attack. By reinforcing its naval forces and positioning S-400 ground to air missiles, the Russians are creating an area that is inaccessible to the US and NATO navies or in other words they have implemented an A2/AD (Anti-Access / Area Denial) strategy.<sup>47</sup> The incident in which an Aleutian 20 airplane was downed by Assad's anti-aircraft forces during an attack by the Israeli air force (mid-September 2018) on the Iranian infrastructure in the Latakia area further complicated the situation in the region and was followed by the delivery of Russian S-300 missile batteries to the Syrian anti-aircraft forces and the resulting constraints on air traffic along the Syrian coast.

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46 Amanda Macias, Pentagon has no plans to suspend more exercises with South Korea amid nuke talks with North, Mattis says, NBC Defense, August 28, 2018 <https://www.cnbc.com/2018/08/28/us-has-no-plans-to-halt-future-exercises-with-south-korea-amid-talks-with-north-mattis.html>

47 Paul Iddon, Why Is a Russian Naval Fleet Gathering Near Syria? Moscow could be hoping to deter a U.S. attack, The National Interest, September 4, 2018. <https://nationalinterest.org/blog/buzz/why-russian-naval-fleet-gathering-near-syria-30462>

**In conclusion**, the US navy is still the largest and strongest navy in the world and has the most diverse capabilities of any navy. Nevertheless, the **budget constraints and the new challenges in the various theaters** have forced it to, among other things, set priorities in the use of force, to seek out new alliances in regions such as Southeast Asia and to induce NATO to revise its strategy based on the developments in the Atlantic and in the Mediterranean.

### **The Chinese Navy (the People's Liberation Army Navy – PLAN)**

The growing significance of Chinese naval interests, which were reported on in previous reports, has led the **Chinese navy** to continue increasing the frequency and duration of its operations and their distance from China. This activity is in line with the new **white paper** published by China in May 2015, which bore the title: "**Defense on the Open Sea**".<sup>48</sup> This major shift in Chinese strategy—which until now called for control of local waters—reflects China's growing economic and diplomatic influence throughout the world. This represents a change in the priority assigned by China in the past to its ground forces and China is essentially abandoning its traditional mentality that the land is more important than the sea. The new strategy reflects the growing importance of managing activity at sea and in the oceans and achieving effective protection of China's maritime rights and interests (see Figure 23). In order to adapt its naval capabilities to these missions, China is developing a naval force according to its national security policy. Accordingly, in 2016 China completed the construction of its first aircraft carrier—the Liaoning—which began in mid-1985 in the USSR and was completed at the Dalian naval shipyard in northern China. The second aircraft carrier (Type 001A) completed its sea trials in May 2018 and went into active service in the Chinese navy. Although this aircraft carrier is the second in China's navy, it is the first to be built entirely in China. The completion of its construction is a reflection of the plan for expansion and renewal of the Chinese navy, which is meant to transform it into a "blue-water navy". Currently, only the United States, with 11 nuclear-propelled aircraft carriers has more than one aircraft carrier. The third Chinese aircraft carrier is already under construction in a shipyard near the port of Shanghai. The Chinese navy has three geographic headquarters (North, East and South) and it can be assumed that each of them will want at least one aircraft carrier under its command. The Liaoning will be transferred also to the

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48 Blasko j. Dennis, "The 2015 Chinese Defense White Paper on Strategy in Perspective: Maritime Missions Require a Change in the PLA Mindset. The Jamestown Foundation, May 29, 2015. [http://www.jamestown.org/programs/chinabrief/single/?tx\\_ttnews%5Btt\\_news%5D=43974&cHash=d67db88687507367b668f71cd4199603#.VjH0IPkrLIW](http://www.jamestown.org/programs/chinabrief/single/?tx_ttnews%5Btt_news%5D=43974&cHash=d67db88687507367b668f71cd4199603#.VjH0IPkrLIW)

training command and therefore analysts believe that in the end China will build five or six aircraft carriers.<sup>49</sup>



Figure 23: Naval bases and balance of naval forces between the US and China/India in the Indo-Pacific theater.<sup>50</sup>

The aircraft carriers in general draw the most attention but the expansion of the rest of the Chinese navy has been no less impressive. In the last decade, China has constructed more than 100 battleships and submarines, more than any other navy other than the US navy.

Last year, China also presented its first model of heavy cruisers—or "super destroyers"—which, according to the US Defense Intelligence Agency, "can be compared in many respects to most of the modern Western vessels." Two heavy cruisers of this class were launched from dry dock in Dalian in July 2018.

49 Frank Lavin, The Long March of the Chinese Navy, National Review, September 26, 2018 [https://www.nationalreview.com/2018/09/china-naval-power-growing-new-doctrines-new-missions/?utm\\_source=Sailthru&utm\\_medium=email&utm\\_campaign=NR%20Daily%20Monday%20through%20Friday%202018-09-26&utm\\_term=NR5PM%20Actives](https://www.nationalreview.com/2018/09/china-naval-power-growing-new-doctrines-new-missions/?utm_source=Sailthru&utm_medium=email&utm_campaign=NR%20Daily%20Monday%20through%20Friday%202018-09-26&utm_term=NR5PM%20Actives)

50 SAMs And Anti-Ship Missiles Are Now Guarding China's Man-Made South China Sea Islands <http://www.thedrive.com/the-war-zone/20616/sams-and-anti-ship-missiles-are-now-guarding-chinas-man-made-south-china-sea-islands>

In 2017, the Chinese navy number 317 warships and submarines in active service (as compared to 283 in the US navy). Although with respect to quality, there is no doubt that the Chinese vessels are inferior to those of the US navy; however, China's technological development is closing the gap. The Chinese defense budget is currently \$228 billion, which is second in size only to that of the US navy.<sup>51</sup> Figure 22 presents the deployment and balance of forces between the US and China/India in the Indo-Pacific theater.

The Chinese navy is participating in joint exercises with the Russian navy, although only ground forces took part in the large Vostok exercise held by the Russian army in Siberia in September 2018.

In April 2018, the Chinese navy held a naval exercise in the South China Sea, which involved 40 warships. The exercises was meant to be a show of force opposite the three American task forces sailing in the region. Also participating in the exercise for the first time was the Liaoning aircraft carrier and warships from the North, East and South China Sea. It was also the first time that the exercise involved live fire.<sup>52</sup>

China is ramping up its naval and military activity and taking it farther afield, a process that began with the establishment of the naval base in Djibouti in 2017. It also intends to establish additional bases at Gwadar and Jiwani in Pakistan and at Hambantota in Sri Lanka. Additional bases will apparently be established in East Africa, in the Maldives Islands, in Myanmar and at additional locations in the Central and Western Indian Ocean.<sup>53,54</sup>

Table 3: Presents the breakdown of Chinese forces according to type of vessel:

2	Aircraft carriers
6	Amphibious transport docks (LPD)
1	Mobile Landing Platform

51 Steven Lee Myers, With Ships and Missiles, China Is Ready to Challenge U.S. Navy in Pacific, The New York Times, 29 August 2018.

<https://www.nytimes.com/2018/08/29/world/asia/china-navy-aircraft-carrier-pacific.html>

52 Tariq Tahir, Chinese navy carries out live-fire drills with more than 40 warships in the South China Sea as three US aircraft carrier battle groups prepare for their own exercises, 6 April 2018 <https://www.dailymail.co.uk/news/article-5587003/Chinese-navy-carries-drills-aircraft-carrier-battle-groups-prepare-exercises.html>

53 The Interpreter, David Brewster, 30 January 2018, China's new network of Indian Ocean bases. <https://www.lowyinstitute.org/the-interpreter/chinas-new-network-indian-ocean-bases>

54 The Maritime Executive, David Brewster, 2018-05-15, China's Play for Bases in the Indian Ocean. <https://www.maritime-executive.com/editorials/china-s-play-for-bases-in-the-indian-ocean>

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32	Landing ship tanks (LST)
31	Landing ship medium (LSM)
8	Attack submarines (SSN)
55	Attack submarines (SSK)
5	Ballistic missile submarines (SSBN)
2	Experimental submarine
37	Destroyers
52	Frigates
42	Corvettes
109	Missile boats
94	Submarine chasers
17	Gunboats
29	Mine countermeasures vessels
12	Replenishment oilers
232	Auxiliaries (various) *

## The Indian Navy

During the last two decades, the Indo-Pacific region has been attributed growing strategic importance, since it is the location of the global economic center of gravity and is characterized by processes of social mobility. The situation is the outcome of commercial maritime activity in the region and the growing need to provide maritime security to the countries and residents of the region.

The activity of the Indian navy takes place in the shadow of its large northern neighbor. While the border disputes on dry land between India and China are now less intense, the main focus of tension between the countries has moved to the Indian Ocean, where China has significantly increased its presence. One dimension of the tension is played out on the military level, with Chinese submarines moving through the area and Chinese warships periodically patrolling it. However, there is another dimension which involves development projects (primarily ports) that are being built by China in countries such as Sri Lanka, Bangladesh and the Maldives Islands, which are considered to be the "backyard" of India and its traditional sphere of influence.

Accordingly, India is adopting a pro-active naval strategy in the Indian Ocean and is taking action to maintain free movement of goods to and from India, particularly at the choke points leading into and out of the Indian Ocean. By means of this strategy and closer relations with the US (without neglecting its special relationship with Russia with regard to the buildup of India's naval forces), India hopes to neutralize the Chinese threat, which is perceived by its leaders as the main threat in the Indian Ocean. The Indians are concerned by the Chinese intention of making the Indian

Ocean into a Chinese lake by constructing civilian infrastructures in the ports of other countries in the region (Seychelles and Sri Lanka), thus allowing Chinese vessels to operate from those ports. In addition, Chinese nuclear submarines routinely patrol the Indian Ocean, which is perceived by the Indians as penetration into their theater of operations.

In order to maintain its economic growth, India must import growing quantities of oil and gas, which provides it with an incentive to participate in the war on naval piracy taking place primarily in the Gulf of Aden and the Horn of Africa. India is concerned by the possibility that terrorists, especially Pakistani terrorists, will make use of the sea lanes, as they did in Mumbai in 2008.

This strategy is translated into the objectives of the Indian navy in two main areas:

1. Protection of the sea lines of communication (SLOC) used to bring oil and gas to India, and other countries, which is essential to its economic growth.
2. Expansion of its political influence in the region as a response to the growing Chinese activity in the Indian Ocean.

Nonetheless, India has often stated that its navy is not restricted to the Indian Ocean region. This is manifested in India's maritime strategy, which is viewed as having a larger global dimension than its predecessor (see Figure 24).

India's ambitions to achieve dominance in the Indian Ocean and the strategic dialog that accompanies it are discussed at the highest levels of the Indian establishment. As already mentioned in the previous report, India continues to implement the maritime strategy document published in 2015, which had two main components:

1. The link between India and the Indo-Pacific Ocean and its influence on India's maritime security.
2. The expansion of the Indian navy's spheres of influence (primary and secondary) which reflect India's desire to be a player with a greater diversity of roles in the region. For example, the Red Sea which was considered by the 2007 strategy to be of secondary importance has now been given primary importance. The Gulf of Aden, the Southwestern Indian Ocean and East Africa have also now been attributed with primary importance by the Indian navy.

**The Chinese naval threat:** According to Admiral Sunil Lanba, the commander of the Indian navy, there are 8 vessels of the Chinese navy (PLAN) deployed in the Indian Ocean at any given moment and if short excursions are counted then the

number rises to 14. He claimed sarcastically that "it was odd for China to deploy submarines for anti-piracy operations in the Indian Ocean region."<sup>55</sup> He also stated that the Indian navy is prepared to take on a greater role in this region, as part of a four-sided coalition between the navies of India, the US, Australia and Japan. The US is continuing to play a major role in maintaining regional security and India, Japan and Australia are essential regional partners in that effort.

The US policy to give greater priority to the East Asia region ("Rebalance to Asia") alongside the Indian desire to project power in the region provide a geopolitical opportunity to change the configuration of power. Accordingly, the development of a new architecture for maritime security is needed, in which India will play a central role alongside the naval superpowers led by the US along with the participation of Japan and Australia.<sup>56</sup> Evidence of the growing importance of India from the American perspective can be seen in the mutual declarations made on the conclusion of the visit by the commander of the Indian navy to Washington in March 2018. During the visit, John Richardson, the commander of the US navy, hosted Admiral Sunil Lanba, the commander of the Indian navy, and they also met with Secretary of the Navy Richard V. Spencer to discuss the improvement of interoperability between the two navies. Admiral Richardson declared that "the relations between the US navy and the Indian navy have never been stronger," and added that "There has been meaningful progress made in strengthening the cooperation between our two great democratic and maritime nations. We are exploring every way to expand that partnership even further based on our shared interests."<sup>57</sup> These statements reflect the tightening of relations between the two navies as a counterweight to the Chinese navy, which is expanding its activity and influence in the Indo-Pacific region.

In June 2018, ships and aircraft of the Indian, Japanese and American navies held a joint naval exercise called Malabar 2018, during which they simulated surface and anti-submarine warfare near the Island of Guam in the Western Pacific. The exercise was the first following the change-of-name from the Pacific Ocean Command to the Indo-Pacific Command and it occurred against the background of the increasing

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55 Press Trust of India, Wary of China, Indian Navy kicks off process to build 6 nuclear submarines, Business Standard, December 2, 2017 [https://www.business-standard.com/article/current-affairs/wary-of-china-indian-navy-kicks-off-process-to-build-6-nuclear-submarines-117120100923\\_1.html](https://www.business-standard.com/article/current-affairs/wary-of-china-indian-navy-kicks-off-process-to-build-6-nuclear-submarines-117120100923_1.html)

56 Prakash Gopal, Maritime Security in the Indo-Pacific: The Role of the US and its Allies, Maritime Affairs: *Journal of the Maritime Foundation of India*, Volume 13, 2017 - Issue 1, 22 May 2017.

57 Navy Leaders Host Head of Indian Navy to Expand Partnership, Story Number: NNS180321-02Release Date: 3/21/2018 [https://www.navy.mil/submit/display.asp?story\\_id=104810](https://www.navy.mil/submit/display.asp?story_id=104810)



activity of the Chinese navy in these regions, including the construction of artificial islands in the South China Sea, which will eventually become military bases.<sup>58</sup> Figure 24 presents the US areas of command that border on the Indo-Pacific region.



Figure 24: Areas of command of US forces that border on the Indo-Pacific region

The tightening of cooperation between the two navies is also manifested in the increased acquisition of American weaponry. Thus, there have recently been large purchases of aircraft from the US, such as 24 MH-60 Romeo multi-role helicopters, as well as dozens of long-range marine patrol planes, with the intention of reinforcing the Indian ability to detect Chinese submarines patrolling the Indian Ocean.

In addition to the close cooperation between the US navy, the **French and British navies** have also begun to increase their activity in the Indian Ocean. As part of the annual Jeanne d'Arc training and patrol mission for 2018, the French task force included a helicopter carrier, the Dixmude Mistral-class helicopter assault ship, and the Surcouf La Fayette-class frigate. The force included British military personnel and a unit of Wildcat helicopters, which sailed to the Indian Ocean in the spring of 2018 (see Figure 25). In Paris and London, it was announced that his deployment, which continued for about five months, was meant to improve naval cooperation between the British and French navies. In practice, it can be viewed as a new initiative of the

58 The Economic Times, Defence, India, US, Japan, begin war game, exercise Malabar, in Guam, June 8, 2018 <https://economictimes.indiatimes.com/news/defence/india-us-japan-begin-war-game-exercise-malabar-in-guam/articleshow/64509646.cms>

two countries to support the US freedom of passage in the region in order to counter the military activity of China and to ensure India's access to this region.<sup>59</sup>



Figure 25: The route of the Joan of Arc operation by the French navy in the Indian Ocean in the spring of 2018

Other countries in the region with which India would like to establish naval cooperation are Thailand and Singapore. During the visit of Indian Prime Minister Modi in Thailand and Singapore, he proposed to his hosts the establishment of trilateral cooperation, part of which would involve an annual joint naval exercise. A date for the first exercise has not yet been set, but the initiative points to the importance with which India views the creation of alliances with various countries in the Indo-Pacific region as a counterweight to the Chinese navy.

India also fears the undermining of regional stability by Jihadi groups on the Maldives Islands and/or the Seychelles Islands, or those who can reach India from Pakistan by sea or those operating in the Gulf of Aden, who might attack Indian tankers bringing oil to India.<sup>60</sup>

59 Emanuele Scimian, New alliance could emerge in Indo-Pacific, Asia Times, March 4, 2018 <http://www.atimes.com/new-naval-alliance-emerge-indo-pacific/>

60 Vicky Nanjappa, As Lashkar, Jaish plan sea borne attacks, how equipped is India to fight the maritime threat, One India, July 19, 2018 <https://www.oneindia.com/india/as-lashkar-jaish-plan-sea-borne-attacks-how-equipped-is-india-to-fight-the-maritime-threat-2738070.html>

**Buildup of power:** The Indian military in general and the Indian navy in particular is the largest importer of weapons in the world and it is also focusing on the creation of the infrastructure for a defense industry. Modi's government has since 2014 also increased the share of the budget going to foreign defense industries that collaborate with local industry from 6 to 49 percent.<sup>61</sup> In the presentation of the Modi government's last budget prior to the general elections in 2019, the defense budget was set at \$62.8 billion, which represents an increase of 7.81 percent relative to the 2017-2018 budget. Within that budget, about \$43.4 billion was allocated to India's net defense budget (after deduction pensions and other transfer payments). As in past years, the defense budget for 2018-2019 grew only somewhat and a large part of the increase was due to increasing manpower costs. In this context, it is worth mentioning that the share of the army in the 2018-2019 defense budget grew by 5 percent relative to 2010-2011, which came at the expense of the naval and aerial branches. The main reason for the growth of the army's budget is its large number of personnel, which result in salary costs that claim a large part of the defense budget.<sup>62</sup> It should be remembered that the R&D budget, which has maintained its share (6 percent) of the defense budget relative to the 2017-2018 budget, includes a not insignificant expenditure on development for the Indian navy (which essentially increases the total budget allocated to India's navy).

Figure 3 presents the division of the budget between the various branches and also the share (15 percent) of the Indian navy in the total net defense budget, while Table 4 shows the breakdown of expenditure on the Indian navy's modernization program for 2018-2019.

In order to establish its position as a regional naval superpower, the Indian navy is carrying out an ambitious buildup of power. In 2017, the Indian navy numbered about 140 vessels and 220 aircraft. The target of the buildup program is to attain a blue-water navy that operates in three dimensions (surface, air and below surface) by 2027, and which will have 212 vessels and 458 aircraft. It is likely that budget problems and the delays at the shipyards will not facilitate the meeting of those targets.

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61 Gady Franz-Stephen, Is India's Defense Budget Adequate? New Delhi's defense spending will rise modestly in the new fiscal year, *The Diplomat*, March 03, 2015.

<http://thediplomat.com/2015/03/is-indias-defense-budget-adequate>

62 Laxman K Behera, Defence Budget 2018-19: The Imperative of Controlling Manpower Cost, *The Institute for Defence Studies and Analyses (IDSA)*, February 02, 2018. <https://idsa.in/issuebrief/defence-budget-2018-19-controlling-manpower-cost-lkbehera-020218>

Table 4: The breakdown of the Indian navy's modernization budget

Modernization Head	2017-18 (BE) (Rs in Crore)	2017-18 (RE) (Rs in Crore)	2018-19 (BE) (Rs in Crore)	% Increase in 2018-19 (BE) over 2017-18 (BE)
Aircraft & Aero-Engine	3364	3047	1900	-44
H&MV	31	23	20	-35
Other Equipment	2299	3299	4863	112
Joint Staff	744	744	844	13
Naval Fleet	11023	9223	10300	-7
Naval Dockyard	1288	2002	2000	55
Total	18749	18338	19927	6.3

During the past years, India has upgraded its **strategic nuclear capabilities** with the entry into service of the Arihant nuclear submarine, which is armed with K-15 ballistic missiles with a range of 750 kilometers. The missile was developed for the navy by the Indian Defense Research and Development Organization (DRDO). At a later stage, the submarines will be armed with the X-K missile with a range of 3500 kilometers.<sup>63</sup> India is planning to complete the construction of 3 additional submarines of this type and to create a nuclear triad which will provide it with second-strike capability. This is an important step for India since India's nuclear strategy is "no first strike".

By the end of 2018, India is meant to absorb a second diesel-propelled Kalvari-class attack sub, which is based on the French Scorpene model and which was built at the Mazagon Dock shipyard. The submarine is part of a deal between the Indian government and the French shipyard Direction des Constructions Navales Services for the construction of 6 diesel-powered attack submarines.

Starting in 2013, India has operated the INS Vikramaditya **aircraft carrier** and the second INS Vikrant was launched in 2018 and is scheduled to enter active service in the coming year. The two aircrafts are identical to the Russian Kiev-class carrier. Furthermore, planning has begun for the next generation of aircraft carrier which will be built at the Cochin shipyard. India would like to plan and build the aircraft carriers on its own, a capability currently possessed by only a few naval superpowers. However, the Bhabha Atomic Research Centre has stated that the development of a reactor for an aircraft carrier of this type will require an extended period of time and therefore is not feasible for the next generation of aircraft carrier.

63 Naval Technology.com, SSBN Arihant Class Submarine, India, Arihant armament, <http://www.naval-technology.com/projects/arihant-class>

In order to preserve the special relationship between the Indian and Russian navies (and perhaps for other reasons as well), India has decided to construct two of the Krivak-class stealth frigates in Russia and the other two at the Goa shipyard in India.<sup>64</sup>

The Indian navy continues to suffer from a **deficient culture of safety** and in recent years has paid a high price in lives and property. As a result, the Indian navy is creating the new position of Inspector General (safety) which will help raise safety awareness and reduce accidents, during both the construction of ships and their operation.<sup>65</sup> It is worth recalling the very serious accident experienced by the Indian navy in August 2013, when the INS Sindhurakshak, a Russian-built submarine, sank in the port after an internal explosion, killing 18 sailors. In 2014, a fire broke out on the INS Sinhuratna, an Indian Kilo-class submarine, and two crew members lost their lives. The accident occurred as a result of poor maintenance, rather than operational error. Also this year, there were reports of safety incidents on the INS Arihant, the new nuclear submarine, in which seawater entered the propulsion system and caused heavy damage.<sup>66</sup> This is the reason that military experts are skeptical of the Indian Navy's ability to safely and reliably operate a force of submarines, which is of such importance to India.<sup>67</sup>

The Shipping Corporation of India (SCI) company owns the largest **fleet of oil tankers** in India. The fleet has diverse capabilities and is composed of tankers of all sizes, which supply India's demand for imported crude oil. India, which is one of the largest oil importers in the world, has encountered problems in complying with the US sanctions on Iran, which came into effect in November 2018. India imports about 25 million tons of crude oil from Iran each year. In order to deal with the problem and

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64 Vivek Raghuvanshi, Goa Shipyard nominated to build two stealth frigates for the Indian navy, Getac, Mach 15, 2017, <https://www.defensenews.com/naval/2017/03/15/goa-shipyard-nominated-to-build-two-stealth-frigates-for-the-indian-navy>

65 Rauh Singh, Indian Navy likely to appoint inspector general to ensure safety of warships, Hindustan Times, New Delhi, July 20, 2018 <https://www.hindustantimes.com/india-news/indian-navy-likely-to-appoint-inspector-general-to-ensure-safety-of-warships/story-UOYGHp3eZ6BHCdKE9Sp4H.html>

66 George Allison, India's first nuclear missile submarine crippled as sailor leaves hatch open, the UK Defence Journal, January 10, 2018 <https://ukdefencejournal.org.uk/indias-first-nuclear-missile-submarine-crippled-sailor-leaves-hatch-open>

67 Sonia Naz, INS Arihant Accidents: Question Mark on the Sustainability of India's Naval Force, Modern Diplomacy, August 27, 2018 <https://moderndiplomacy.eu/2018/08/27/ins-arihant-accidents-question-mark-on-the-sustainability-of-indias-naval-force>

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not to use the SCI company, India will allow the public sector to import Iranian oil in foreign tankers.<sup>68</sup>

## The Russian Navy

Since the beginning of the last wave of reforms in Russia's armed forces in 2009, the Russian leadership has broadcast the message that the Russian navy has emerged from its crisis and is returning to its former glory and that it is capable of completing missions that are worthy of a superpower's navy. This was manifested into major events:

- **The annexation of Crimea** and the achievement of Russian control over the port city of Sevastopol, which is also the home port of the Russian navy in the Black Sea. The navy shipyard is also nearby and it plays a major role in the navy's maintenance.
- **Expansion of the navy's mission** in its six theaters of operation (the Atlantic, the Arctic, Antarctica, the Indian Ocean, the Black Sea and the Pacific), while giving priority to its permanent presence in the Mediterranean and the buildup of its power in the Arctic and Atlantic theaters.

As mentioned in previous reports, President Putin approved the **New Naval Doctrine of the Federation** on July 26, 2015. The document describes the strategy of the Russian navy, its missions and the plan for its buildup of power. This doctrine replaces the previous one which was approved in 2001.

As part of the Russian Naval Day events in July 2018, Russia held a parade of 40 war ships in the port of St. Petersburg, during which President Putin sent greetings to the crews and stated that "the Russian navy is fulfilling all of its missions to defend the State, is making a significant contribution to the war on international terror and is playing an important role in ensuring strategic equality." Putin added by saying that "during a period of more than 300 years, the Russian navy has protected the Russian Federation and its national interests." The navy's new stealth frigate (the Admiral Gorshkov) was meant to participate in the show for the first time. The ship has a displacement of 4500 tons and it the first of six that are meant to become part of the Russian forces by 2025.<sup>69</sup> The maximum speed of the frigate is 29 knots and it

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68 Reuters, PSU refiners to use Iranian tankers for oil imports, the Hindu, September 4, 2018 <https://www.thehindu.com/news/national/psu-refiners-to-use-iranian-tankers-for-oil-imports/article24858669.ece#>

69 Russian Navy to get Admiral Gorshkov frigate on July 28, TASS, July 18, 2018 <http://tass.com/defense/1013838>

is armed with Oniks and Kalibr cruise missiles, as well as Poliment-Redut surface-to-air missiles. Paul Schwartz, a researcher at the Center for Strategic and International Studies (CSIS) in the US, points out in a research study that this type of vessel, relative to its size, is well-armed and may even be preferred over Arleigh Burke-class guided-missile destroyers that serve in the US navy.<sup>70</sup>

According to the Russian Minister of Defense, the Russian navy included **about 280 vessels** of different types in 2018, although there is a conflicting report with regard to some of these vessels. Carl Schuster, the former Director of Operations at the US Pacific Command's Joint Intelligence Center, claims that the Russians are counting vessels whose construction has been completed in the shipyard and therefore it does not accurately reflect the number of Russia's operational vessels. Schuster also claims that the Russian navy's order of priorities are as follows: construction of new vessels; operations in the various theaters of operation; training of crews; and only in fourth place – the vessel's level of maintenance.<sup>71</sup>

With regard to the **Russian navy's buildup of power**, there is currently a **turnaround in thinking**, some of whose components are economic and some of which are the result of an analysis of future warfare, which is becoming increasingly biased toward littoral warfare. The Russians are getting ready to abandon the construction of capital ships and by means of a radical shift in operational thinking are beginning to plan and build smaller ships, which are equipped with advanced weapons systems and which will create an advantage over the enemy on the strategic, systemic and tactical levels. The new program of the navy's buildup of power for the period 2018-2025 has been allocated 25 percent of the budget for acquisition, modernization and R&D, more than any other branch of the military. The navy has become the politician's preferred branch of the military, which is manifested in the text of the Russian naval strategy document (Morskaia Strategiiia). The Admiral Kuznetsov **aircraft carrier**, which last year completed an unsuccessful tour of the Eastern Mediterranean, returned to Russia and went into dock for refurbishing that will be complete only in 2021.

According to the 2015 strategy, the Russian navy is focusing on the following three objectives: nuclear strike capability by means of its fleet of nuclear-powered ballistic missile submarines (SSBN); the integration of the navy within land attack capabilities

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70 Paul Schwartz, Admiral Gorshkov Frigate Reveals Serious Shortcomings in Russia's Naval Modernization Program, the Center for Strategic and International Studies, March 2016, <https://csis-prod.s3.amazonaws.com/s3fs>

71 Bred Lendon, Russia's navy parade: Big show but how much substance? CNN, July 29, 2018 <https://edition.cnn.com/2018/07/29/europe/russia-navy-parade-intl/index.html>

by means of cruise missiles (as was manifested in the attacking of targets in Syria) and the protection of the homeland's coasts (including territory held by Russia in the Eastern Mediterranean) by means of anti-access/area-denial (A2/AD). The two latter missions can be carried out well both by submarines and by small surface vessels the size of frigates and corvettes. Thus, according to the current Russian naval strategy, the missions of the large surface vessels mentioned above are highly limited.

In the summer of 2018 and after 13 years of development and construction, the Russians launched a second Lada-class attack submarine which is a "fourth generation" development program of Kilo-class attack submarines. The submarine is meant to be quieter and has new weapon systems and at a later stage in the program also air-independent propulsion.<sup>72</sup> The long duration of the project (over 13 years) is evidence of the difficulties that arose both in terms of resources and the ability of the shipyard to finish projects on schedule. Another example of such problems can be seen in the handover of the Ivan Green landing vessel, which was built in the Kaliningrad shipyard and delivered to the Russian navy in June 2018, 14 years after the project began. The ship did not pass its sea tests and was returned to the shipyard for some major repairs.

In 2018, the **Russian navy maintained its presence in the Eastern Mediterranean** and its presence in Syria was reinforced. In 2017, the Russians renewed their lease contract in the port of Tartus for an additional 49 years and continued the construction of infrastructure in the Russian section of the port. The Russian navy in the Eastern Mediterranean is primarily based on the Black Sea fleet and its size ranges from 8-15 vessels of various types. In mid-August 2018, prior to the attack by Assad's forces on the Idlib area in northern Syria, the Russian fleet increased its forces in the Eastern Mediterranean by more than 10 warships (see Figure 26). This is essentially the largest Russian force deployed in this region since Russia declared its active support of the Assad regime in 2015. The task force includes three frigates, a destroyer, a missile cruiser, two corvettes, two Kilo-class submarines and number of supply ships. According to reports in the Russian media, the buildup is a response to warnings from the US and its allies in Europe against the use of chemical weapons in the planned attack on Idlib and the debriefing given by US National Security Advisor John Bolton to reporters, in which he expressed concern that Syria

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72 Russia's second Lada-class submarine launched 13 years after construction, Naval Today.com, September 20, 2018, <https://navaltoday.com/2018/09/20/russias-second-lada-class-submarine-launched-13-years-after-construction-start/>



would use chemical weapons and that "the US will respond to any verified chemical weapons use in Idlib or elsewhere in Syria in a swift and appropriate manner."<sup>73</sup>

### Российские корабли в Средиземном море



Figure 26: Polygons showing the territory of the Russian navy's exercise which took place at the beginning of September 2018 in the Eastern Mediterranean. Source: Izvestia

At the beginning of September, the Russian navy carried out a naval exercise in the Eastern Mediterranean in which 25 warships and about 30 aircraft took part. During the exercise, large swaths of the ocean were closed and the units participating in it practiced warfare scenarios against threats from aircraft and from submarines and scenarios of minelaying were practiced. Leading the exercise was the Marshal Ustinov guided-missile cruiser, and there were also Tupolev 16 bombers and Sukhoi 30 and Sukhoi 33 aircraft participating. Figure 27 presents the map of the exercise published by the Russians in an open message prior to the exercise in the Eastern Mediterranean.

On the night between the 17th and 18th of September 2018, a Russian Aleutian 20 airplane was shot down by the Syrian air defense system, while Israeli planes attacked an ammunition warehouse in Latakia. As a result of the incident, 15 Russian soldiers were killed and the Kremlin expressed rage against Israel's behavior which led to an urgent conversation between Russian President Vladimir Putin and Israeli Prime Minister Benyamin Netanyahu. An IDF delegation, headed by Amikam Norkin,

73 Russia deploys large task group off Syria ahead of potential new Syria attacks, Naval Today.com, August 29, 2018 <https://navaltoday.com/2018/08/29/russia-deploys-large-task-group-off-syria-ahead-of-potential-new-syria-attacks/>

the commander of the Air Force, travelled to Russia to present the findings of the IDF investigation of the incident. However, an announcement by the Russia Ministry of Defense rejected each of the claims made in the investigation, as presented by the commander of the Air Force. The restrictions that will apparently be imposed on the activity of the Israeli Air Force in attacks of this kind and on the freedom of movement of the Israeli navy off the coast of Syria will make the Eastern Mediterranean less accessible to Israeli activity. This provides support for researchers who have long claimed that the Russian strategy is to make the Eastern Mediterranean into an **inaccessible region for the US navy and its allies** (anti-access/area-denial) in a time of crisis.<sup>74</sup> If indeed this is accomplished, it is liable to restrict the access of the US and its allies to the Suez Canal, the Black Sea and the Eastern Mediterranean.

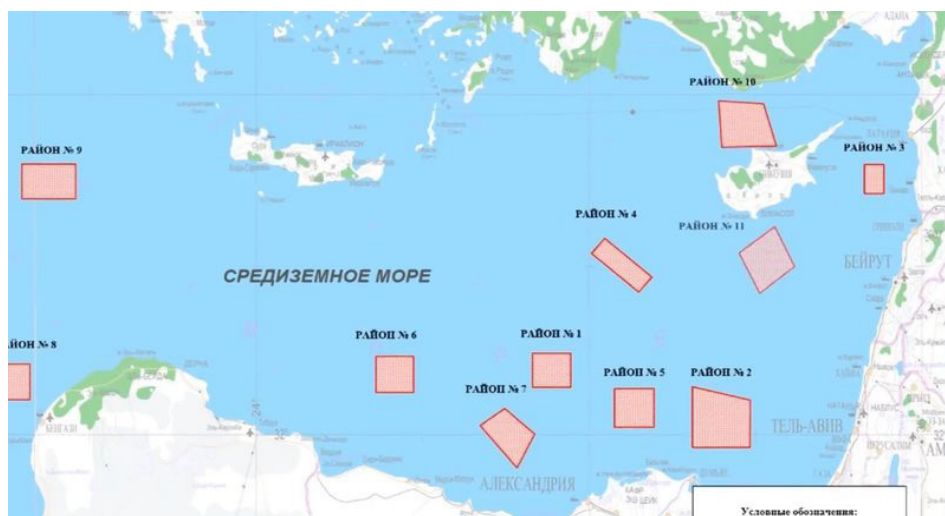


Figure 27: The forces in the Russian naval taskforce in the Eastern Mediterranean after reinforcement – September 2018

**Russia has had the largest fleet of attack submarines** for the last two decades. In recent years, it has been patrolling and projecting power in a number of theaters: off the coast of Scandinavia and Scotland, in the Mediterranean and in the North Atlantic. This activity is perceived as competition with the US and NATO submarine forces which until now have maintained their dominance in these regions. In the autumn of 2015, Admiral Mark Ferguson, the commander of the American forces

74 North Atlantic Treaty Organization, Science and Technology Organization, Analysis of Anti-Access Area Denial (A2AD), November 13, 2017  
<https://www.sto.nato.int/SitePages/newsitem.aspx?ID=3546>

in Europe, stated that the scope of Russian submarine patrols had risen by almost 50 percent over the past year.”<sup>75</sup> In the context of the **littoral warfare** carried out by the Russian navy in the Eastern Mediterranean, it recently demonstrated its ability to carry out an **attack against land targets** using cruise missiles launched both from the Caspian Sea and from the Mediterranean. American commentators point out that the launch of cruise missiles from the Caspian Sea or from the Black Sea, which have the ability to “deny hostile powers access to vital areas”, creates **almost complete survivability** for these vessels.<sup>76</sup> In this context, US officials claim that Russia is continuing to violate the Intermediate-Range Nuclear Forces Treaty (INF) on which it is signed in view of its development program for SSC-8 cruise missiles.

Another **change in doctrine** that is taking place in the Russian submarine fleet and which represents a return to the Cold War period with regard to the use of **submersible weapons** is the introduction of a new torpedo known as the Kanyon which carries a nuclear warhead. The US Nuclear Posture Review, which was published in January 2018, mentions Russia’s aspiration to develop an “autonomous submersible torpedo”. The torpedo was first identified by the US in 2016 during launch trials of the torpedo from a Sarov-class submarine. It is believed that the torpedo is 24 meters long and has a diameter of 1.6 meters, that it has a thermonuclear warhead with a 100 megaton charge, a high speed of 185 kph, and a range of about 10,000 kilometers. It has two main purposes: to strike the enemy’s coastal/port cities and to attack and sink the American aircraft carriers.<sup>77</sup> One way or the other, this is an extension of nuclear weapons to the tactical battlefield, which is a throwback to the Cold War period, before there were any agreements between the US and Russia (such as START) that deal with the proliferation of this type of weapon.

In August 2018, prior to the Vostok exercise, Russia’s Pacific fleet launched seven guided cruise missiles in the Sea of Okhotsk. The missiles were of three types according to launch platform: from a surface vessel, from a submarine and from a coastal battery. The Sava-class Varyag cruiser launched the cruise missile against surface vessels; the Oscar-class Tomsk submarine launched the Granit-class cruise

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75 Schmitt Eric, Russia Bolsters Its Submarine Fleet, and Tensions with U.S. Rise”, The New York Times, April 20, 2016

76 Fink Andrew, Troubled Waters, Russia, Iran and Inland Seas – A bastion strategy for the second nuclear age, The American Interest, April 15, 2016

77 Russia releases first video footage of new Kanyon/Status-6 nuclear torpedo, Naval Today.com, July 19, 2018 <https://navaltoday.com/2018/07/19/russia-releases-first-video-footage-of-new-kanyon-status-6-nuclear-torpedo>

missile and a coastal missile battery launched a P-800 Oniks supersonic anti-ship cruise missile. Although not all the data on performance were presented, the Pacific Command declared that the seven missiles hit their targets.<sup>78</sup>

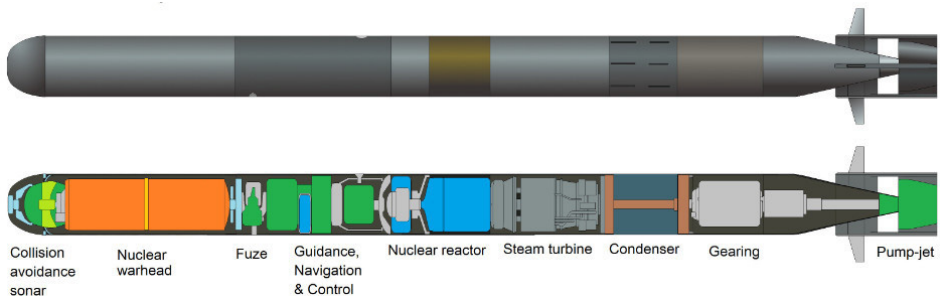


Figure 28: The Kanyon Status – 6 Russian torpedo with a nuclear warhead

In view of the growing importance of the Arctic Ocean, the Russian navy continued constructing nuclear-powered icebreakers that will be able to lead convoys in areas where there is iceberg danger. In September 2017, the Russian navy launched another icebreaker (the second in a series of three) called the Sibir, which according to the Russians can break through the thickest and strongest ice in the world. Its length is 173 meters and it is able to clear a path through ice that is 2.8 meters thick. The icebreaker was built according to the plan of the Russian nuclear agency (Rosatomflot) to operate in the Arctic Ocean and at the mouth of the Yenisei River in the Bay of Ob.<sup>79</sup>

An original solution to the growing demand for electricity needed for the development of the Arctic was found by constructing a floating nuclear power plant in April 2018 in the Port of St. Petersburg. The Rosatom Russian nuclear agency planned and built the Akademik Lomonosov floating nuclear power plant over the last nine years in the St. Petersburg shipyard. The floating power plant, which has two nuclear reactors, will be towed from St. Petersburg and will arrive in the port of Murmansk in the autumn of 2018 and there it will be loaded with the nuclear fuel needed for

78 Russia conducts cruise missile tests ahead of largest drill in three decades, Naval Today.Com, August 28, 2018 <https://navaltoday.com/2018/08/28/russia-conducts-cruise-missile-tests-ahead-of-largest-drill-in-three-decades/>

79 Russian shipbuilder Baltic Shipyard has launched the second of three Project 22220, nuclear-powered icebreakers at its shipyard in St. Petersburg, Naval Today.Com, September 25, 2017 <https://navaltoday.com/2017/09/25/video-russia-launches-second-nuclear-powered-icebreaker-sibir/>

its operation. The power plant will be located in the arctic port of Pevek, will be connected to the existing electricity network and will replace the existing nuclear power plant which is being taken out of service.<sup>80</sup>

**In conclusion**, the Russian navy has received preference over the other branches in the allocation of resources for the buildup of power and for its operations, despite Russia's difficult financial situation in recent years. The navy serves geopolitical and geostrategic goals and in some sense it is exhibiting behavior patterns with respect to the US and NATO that are reminiscent of the **Cold War period**. In recent years, **the Russian navy has tightened its relations with the Chinese navy** and has held joint exercises in various theaters. Although in 2018, Chinese naval sources did not participate in the major Vostok exercise held by the two countries, on May 7, 2018 three Russian ships of the Pacific fleet—two destroyers and a tanker—left Vladivostok for a patrol in East Asia, which included among other things an exercise with the Chinese navy. In a joint meeting of the Russian and Chinese navies held in July 2018 in Severomorsk, the main base of Russia's northern fleet, the possibilities were discussed for increased cooperation in the Barents Sea, as well as joint exercises in the Arctic Ocean, to which both navies attribute great importance.<sup>81</sup>

**With respect to the export of naval weapons systems**, Russia is still a major supplier of vessels and advanced weaponry to numerous navies, including the Indian navy, which in spite of its improved relations with the US navy continues to maintain a special relationship with the Russian navy. As part of the attempt to overcome its economic crisis, Russia is interested in expanding the export of naval platforms and weapons systems. In a report written for the EU in December 2017 on the Russian weapons industry, the researchers looked at the effect of the war in Syria on this industry and concluded that, "The war in Syria has had a mixed impact on the Russian armaments industry. On the one hand, the war has served as a testbed and as a showcase for new Russian military equipment. On the other hand, the high cost of the war has led to cuts in the Russian military budget and a reduction in the number

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80 Bill Chappell, Russia Launches Floating Nuclear Power Plant; It's Headed to The Arctic, The Two Ways, April 30, 2018 <https://www.npr.org/sections/thetwo-way/2018/04/30/607088530/russia-launches-floating-nuclear-power-plant-its-headed-to-the-arctic>

81 Thomas Nilsen, Russia's Northern Fleet works on increasing ties with Chinese Navy, Eye on the Arctic, July 31, 2018 <http://www.rcinet.ca/eye-on-the-arctic/2018/07/31/russia-china-navy-cooperation-military-defence-security-northern-fleet-severomorsk/>

of weapons acquired by the Russian Ministry of Defense."<sup>82</sup> With regard to the future of this industry, researchers do not foresee a bright future. The industry must offer a large variety of products and must shift to civilian products in order to survive. It also has to overcome the sanctions placed on it by the West in the acquisition of technologies and Western components and to adapt its programs to the budget allocated to it within the Russian defense budget for 2018-2025. Moreover, some of the leading companies in the defense industry sector in Russia are burdened with heavy debts that are liable to threaten Russian military production for years to come.

### NATO's Naval Forces

A number of events during the past year had an impact on NATO in general and on its naval forces in particular:

- The continuing shift of American naval forces to the East Pacific region.
- The demand by the new American president that the NATO countries increase their investment in the defense budget to 2 percent of their GDP.<sup>83</sup>
- The planned exit of Britain from the EU by May 2019.
- The deterioration in relations with Turkey which is also shifting its orientation to the East and is interested in acquiring Russian weapons.

NATO is operating according to its naval strategy, which also defines the parameters of NATO naval operations. This activity falls with the categories of collective defense, crisis management, joint security and naval security. NATO is currently holding the Sea Guardian exercise in the Mediterranean and provides assistance to refugees and migrants in the Aegean Sea. Furthermore, it collaborates with non-NATO countries and other international organizations.<sup>84</sup>

At the NATO Security Conference held in February 2018 in Munich, Jens Stoltenberg, the Secretary General of NATO, related to the US President's demand to **increase the defense budget** of the NATO members to 2 percent of GDP and claimed that

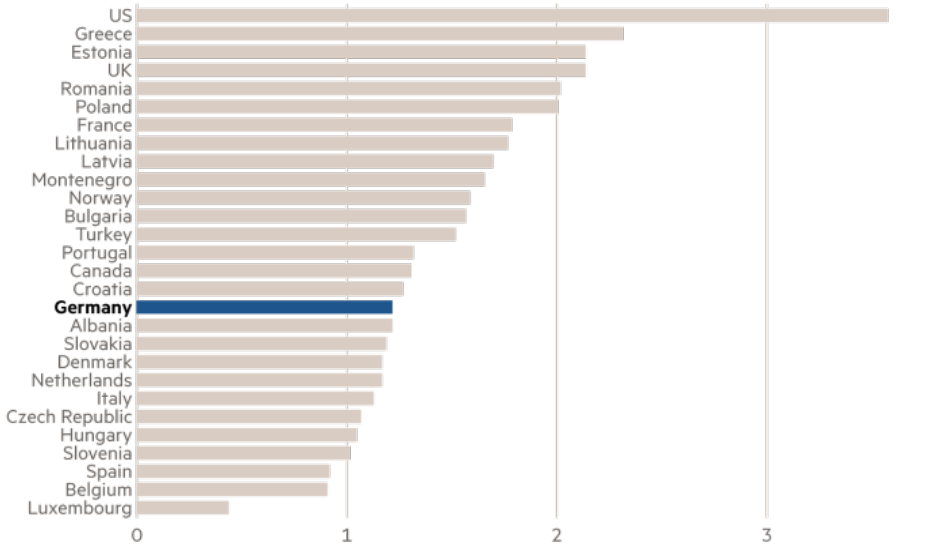
82 Richard A. Bitzinger and Nicu Popescu, *Defence industries in Russia and China: players and strategies*, Report No.38, Published by the EU Institute for Security Studies and printed in Luxembourg by Imprimerie Centrale. Luxembourg: Publications Office of the European Union, P. 18, December 2017

83 Martin Bank, *Defense spending increased 'significantly' among NATO allies*, defenseneews.com, Europe, June 30, 2017, <https://www.defenseneews.com/global/europe/2017/06/30/defense-spending-increased-significantly-among-nato-allies>

84 North Atlantic Treaty Organization, *NATO's maritime activities*, June 18, 2018 [https://www.nato.int/cps/ic/natohq/topics\\_70759.htm](https://www.nato.int/cps/ic/natohq/topics_70759.htm)

indeed this is the general trend, although in 2018 only six countries met this target and by 2024 it is expected that at least 15 will do so (out of 28 NATO members). Stoltenberg added that "all NATO Allies have put forward plans to increase spending in real terms but it was not possible to meet this target by the end of 2017."<sup>85</sup> Figure 29 presents the defense expenditures of the NATO members in 2017 as a proportion of their GDP.

With respect to the **operational readiness of the NATO forces** there have recent worrying reports that as of the end of 2017 more than one-half of the French army's aircraft were not able to fly and at the beginning of 2018 the German navy was unable to put to sea even one of its submarines and the German air force could not deploy even one of its A400M transport planes.<sup>86</sup>



Source: Nato  
© FT

\* Nato member Iceland has no armed forces

Figure 29: The defense budgets of the NATO countries in 2017 as a proportion of GDP

85 Azita Raji, Salvaging Trump's Legacy in Europe: Fixing NATO Burden Sharing, National Security Network, University of Texas, February 26, 2018, <https://warontherocks.com/2018/02/salvaging-trumps-legacy-europe-fixing-nato-burden-sharing>

86 Lima Charlie, How The UK is Critical In NATO's Future To 'Keep The Russians Out, Force Network, July 16, 2018 <https://www.forces.net/evergreen/comment-how-uk-critical-natos-future-keep-russians-out>

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Accordingly, NATO will have to deal with a series of **security challenges** in the near future:

- Complex challenges created by Russia, perhaps not as an enemy but as a bitter rival nonetheless.
- The complex challenges of the civil war in Syria and the Eastern Mediterranean.
- The uncertainty in the Black Sea and the vicinity in view of the possibility of additional moves by Russia.
- The increasing uncertainty on the South coast of the Mediterranean including the situation in Libya.
- In the North – the increasing importance of the North Sea and the Baltic Sea and its role in NATO security.

The challenges being created by Russia led the Pentagon to announce in May 2018 that as a result of the increasing tension with Russia it had been decided to reestablish the naval fleet in the Atlantic and to bolster US and NATO forces in the Atlantic Ocean. The fleet will be commanded from NATO's new Atlantic Command headquarters in Norfolk, Virginia. The outline of the plan was approved in a meeting of the NATO defense ministers in February 2018 as part of a broader effort to ensure the security of ship lanes between Europe and North America.

During the second half of August 2018, NATO naval forces of Naval Group One carried out a passing exercise with a Japanese task force that was sailing in the Baltic Sea. Japan is a traditional ally of NATO outside of Europe and it works with NATO in a number of areas – from security in Afghanistan to nuclear non-proliferation, naval security and cyber.<sup>87</sup>

In the context of **NATO involvement in the civil war in Syria**, it is worth mentioning that the continual criticism by President Trump of the Obama administration during the presidential elections that it had "drawn a line in the sand" with Syria with respect to the use of chemical weapons and after the fact had allowed Syria to cross the line without an appropriate response, now puts him and the other NATO countries in the same dilemma; and so far all of his threats have remained on paper.

**In the context of NATO activity in the Black Sea**, two NATO naval groups participated in the Breeze 2018 exercise, which was held jointly with the Bulgarian navy during July 13-20 opposite the coast of Bulgaria in the Black Sea. The exercise was meant to

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87 NATO and Japan conduct exercise in the Baltic Sea, August 21, 2018  
[https://www.nato.int/cps/en/natohq/news\\_157770.htm?selectedLocale=en](https://www.nato.int/cps/en/natohq/news_157770.htm?selectedLocale=en)



improve the coordination between the participants and to strengthen cooperation by practicing various warfare techniques in a multi-dimensional scenario (aerial, ground and anti-submarine). The exercise provided an excellent opportunity for NATO forces to develop and strengthen joint operational abilities with the naval forces of allies in the Black Sea. The presence of NATO vessels in the Black Sea is part of its effort in the region to increase the duration of NATO naval operations in the Black Sea from about 80 days in 2017 to the planned 120 days in 2018.<sup>88</sup>

It appears that the question posed in the previous report on the effect of **Britain's planned exit from the EU**, and in view of its senior position in NATO, has become less urgent and the possibility that France would exploit the opportunity in order to take Britain's place remains only theoretical. The deterioration in relations between Britain and Russia and Prime Minister Theresa May's plan to moderate the exit processes left Britain's relations with NATO and its status basically unchanged. Furthermore, the entry into service of two new aircraft carriers—the HMS Queen Elizabeth and the HMS Prince of Wales—will constitute a force multiplier for NATO in this essential domain.

With respect to **Turkey and its relations with NATO**, it should be mentioned that although most of the attention in the Middle East is devoted to the developments in Iran, the other non-Arab force in the Middle East—namely Turkey—is often ignored. Turkey has undergone significant changes during the last decade, both internally and externally. With respect to its foreign relations, it appears that Turkey is in the midst of a strategic shift in its orientation—a **shift towards the East**. After some friction with Russia in recent years, Turkey is aligning itself with Russia at the expense of its relations with Europe and the US. President Trump's decision in August 2018 to impose economic sanctions on Turkey due to its unwillingness to free an American priest held in Turkey on charges of espionage brought the relations between the two countries to a new low. In July 2018, the Turkish President warned the United States that it is liable to lose an important ally, unless it changes its current approach. Turkey objects to the State Department's demand that NATO countries halt their imports of crude oil from Iran by November 2018. Turkey is building a military base at Doha in Qatar, a move that is bring it closer to the Gulf States and in particular the most radical of them, namely Qatar. Qatar, which is known as a supporter of Iran and terror organizations, has committed to investing \$15 billion in Turkey with the goal of offsetting the effect of the new US sanctions. A maritime element was recently

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88 NATO Groups exercise in the Black Sea, July 17, 2018  
<https://mc.nato.int/media-centre/news/2018/nato-groups-exercise-in-the-black-sea.aspx>

added to the longstanding dispute between Turkey on the one hand and Cyprus and Greece on the other with respect to Cyprus' EEZ, which is rich in gas deposits. Turkey is adamantly opposed to Cyprus' attempt to initiate oil and gas exploration in disputed maritime areas and the intervention of the Turkish navy in this dispute is a definite possibility.

As mentioned in the previous report, current NATO doctrine was not formulated to deal with the challenges that have developed and in particular those in the **Mediterranean**. Accordingly, at the NATO Summit Conference held in Warsaw in July 2016, the member states' leaders decided to change NATO's operational plans and military strategy. The new operational plan (which replaced the 2001 operational plan called Operation Active Endeavour) was given the name Operation Sea Guardian and it is "aimed at working with Mediterranean stakeholders to deter and counter terrorism and to mitigate other risks to security." The missions assigned to this force include: building an accurate picture of activity in the Mediterranean in order to help identify possible security risks and the execution of three main tasks: maritime situational awareness, counter terrorism and capacity building.<sup>89</sup> The command center for the task force will be located at Northwood in the UK and it will maintain an up-to-date picture of the operation.

**As part of the Sea Guardian exercise held in September 2018 in the Mediterranean** as part of NATO's effort to involve additional nations in this mission, British and Croatian naval forces were also invited to participate. Ships from these navies joined the ITS Espero, a frigate of the Italian navy, and other participating ships and aircraft to carry out joint patrols of the Central Mediterranean.<sup>90</sup>

**During the course of 2017, the Italian navy and coast guard were intensively involved in preventing the arrival of refugees** from Libya in Italy. In reality, the navy and the coast guard were forced to engage in activity to rescue thousands of refugees in distress.

**Humanitarian missions** of this type that have been carried out by the **Italian navy** receive public recognition for their importance and thus despite the reduction in the Italian defense budget since the end of the Cold War (from 2.3 percent to GDP in 1990 to 1.3 percent in 2015) the navy has been allocated a designated budget in the

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89 Fact Sheet, Operation Sea Guardian, Allied Maritime Command Northwood UK, Media Center, <http://www.mc.nato.int/media-centre/fact-sheets.aspx>

90 Croatian and UK ships join NATO's Operation Sea Guardian, September 7, 2018 [https://www.nato.int/cps/ic/natohq/news\\_157986.htm?selectedLocale=en](https://www.nato.int/cps/ic/natohq/news_157986.htm?selectedLocale=en)

unprecedented amount of 5.4 billion euros in order to bolster its ability to carry out missions in the Mediterranean. The reason for this was mentioned by Vice Admiral Ferdinando Sanfelice di Monteforte who is also the Italian military representative to NATO: "...because security issues in Mediterranean countries have shifted from land to water – In the nineties, the focus was on land-based defense, but today it's maritime security." The new vessels include seven multi-purpose patrol boats that are particularly suited to search and rescue; a logistic support vessel and two high-speed multi-functional ships for special operations. Most of the ships will be built by the state-owned Fincantieri shipyard. The new vessels will be delivered to the Italian navy between 2021 and 2026, by which time the refugee crisis may already be over while the Italian navy will be at the peak of its refurbishment.

There are 10 Italian navy vessels that currently patrol the Mediterranean, two of which are frigates that have been assigned to search and rescue missions and the prevention of smuggling. The Italian vessels, including Italian submarines on intelligence-gathering missions, also patrol the coast of Libya.<sup>91</sup>

### Naval Operations against Terror and Piracy in the Indian Ocean Region

**Maritime piracy and terror** present a serious challenge to shipping safety, to human lives and to economic welfare, in addition to disrupting the fabric of inter-state relations when the activity originates from the territory of a particular country. At the time of writing, it was still possible to differentiate between the activity of **maritime piracy** and **maritime terror** according to the nature of the attack, the methods used and the means used, as well as the region in which the activity is taking place. Although there is similarity between the methods of operating between them (attacking ships, stealing of sea cargo and taking of hostages), the goals of the two differ: terror activities have an ideological motive and therefore publicity is important to them in order to create psychological pressure on governments and the public, while piracy uses the property it captures and the hostages it takes for profit only.

During the course of 2017, the Combined Maritime Forces continued their activity to **counter maritime piracy and terror in the areas of the Persian Gulf**, the Indian Ocean and the Horn of Africa. The force is composed of three subforces: Force 150 which is a joint French-British force that focused in 2017 on maintaining a presence and carrying out patrols in the area of the Bab el Mandeb Strait, with the goal of securing freedom of movement in the area. This followed a number of incidents early

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91 Elizabeth Braw, How Migrants Rescued the Italian Navy, RUSI's Modern Deterrence program, May 31, 2016 <https://foreignpolicy.com/2016/05/31/how-migrants-rescued-the-italian-navy/>

on in the year;<sup>92</sup> Force 151 whose mission is to maintain security in the area of the Red Sea, the Gulf of Aden and the Gulf of Oman; and Force 152 which operates in the Persian Gulf. It should be mentioned that apart from this force, a number of countries, including **China, Japan and India**, among others, are involved in this mission on an independent basis, with the goal of protecting the interests of their own trade, although they do not hesitate to answer distress calls from commercial ships of other countries. In August 2018, Brazil became the 33rd country in the Combined Maritime Forces.

From the beginning of 2018 until September 2018, the IMB Piracy Reporting Center reported only two incidents in which ships were fired on in the area east of the Somali coast, in the Gulf of Aden and in the Red Sea. Nonetheless the three forces report an increase in the capture of ships that are involved in drug smuggling in the Gulf of Aden and Horn of Africa regions. Up to September 2018, a total of 1200 kilos of heroin were sized in three separate incidents.<sup>93</sup>

There has been a decline in the total economic cost of maritime counter-terror activity in the western Indian Ocean. In 2017, the cost was estimated at about \$1.4 billion (in comparison to \$1.7 billion in 2016). Figure 30 presents the total cost of the operations to counter maritime piracy in the Horn of Africa and the Gulf of Aden during the period 2010-2017 – in terms of hostages and economic price. In 2017, of 54 attempts by pirates at hijacking and armed robbery in the region, 15 ended in failure and 4 ships were hijacked by the pirates. In order to reduce the costs of security that are borne by the civilian shipping companies, they have begun to employ private companies that have provided them with trained and armed guards (3-4 per ship). The annual costs of this protection in the Western Indian Ocean reached \$292.5 million.<sup>94</sup> The conditions and sociopolitical environment in Somalia (including the lack of economic opportunities, the lack of governance and the lack of law enforcement) that have allowed piracy to flourish have unfortunately not changed very much.

92 Combined Maritime Forces, Warships Operating in Support of CTF – 150 Continue Presence patrols in the Western Gulf of Aden, August 10, 2017, <https://combinedmaritimeforces.com/2017/08/10/warships-operating-in-support-of-ctf150-continue-presence-patrols-in-the-western-gulf-of-aden>

93 <https://combinedmaritimeforces.com/2018/06/20/marine-nationale-ship-nivose-seizes-illegal-heroin-in-western-indian-ocean/>

94 Oceans Beyond Piracy OBM, The State of Maritime Piracy 2017, Assessing the Economic and the Human Cost, Executive Summary, <http://oceansbeyondpiracy.org/reports/sop/summary>

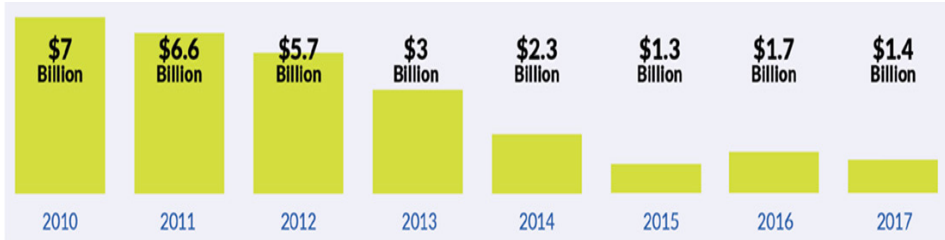


Figure 30: The total cost of operations against maritime piracy in the Horn of Africa and the Gulf of Aden during the period 2010-2017 – hostages and economic price

**The likelihood of terror attacks** by organizations such as al Qaida and ISIS in this region is estimated to be high and is based on the declared intentions of these organizations to disrupt the traffic of commercial vessels in critical shipping lanes. The results of a terror attack of this kind in the region of the Gulf of Aden is liable to have a major effect on trade and the global economy. Three are three choke points in this region which are important to global trade and primarily to the transport of fuel (Figure 10 presents figures for the transport of fuel in millions of barrel per day). At the main choke points in the Indian Ocean—which include the Suez Canal, the Bab el Mandeb Strait and the Strait of Hormuz, through which about 20 percent of global oil shipments pass—it is possible to disrupt shipping with relative ease. Iran attributes great strategic importance to the Red Sea region due to its desire to take control of the main maritime route for oil and gas to the West. Iran already uses its ships in order to supply Yemen directly or by way of Somalia, thus circumventing the efforts of the coalition to intercept shipments. In January 2018, the Houthi rebel movement in Yemen threatened to block the strategic shipping lane through the Red Sea. A tanker was attacked by Houthis at the beginning of August 2018 was flying a Saudi flag and was carrying oil to Egypt. As a result of the attack, Saudi Arabia suspended the export of oil by way of the Bab el Mandeb Strait for a short time.<sup>95</sup>

At the height of the typical Twitter exchange between US President Trump and the Iranian leadership—during which the Iranians threatened to disrupt international oil shipments if the US imposes sanctions in November 2018 that harm the Iranian oil industry—Iran carried out a naval exercise in the Persian Gulf. This was a few days before the US renewed its sanctions on Teheran with the goal of demonstrating an ability to close the main oil route. Since some of the threats have been directed towards Israel, Prime Minister Benyamin Netanyahu warned Iran that any attempt

95 KSA suspends oil shipments through Bab Al Mandab after Houthi terror attack, Arab News, July 26, 2018 <http://www.arabnews.com/node/1345626/saudi-arabia>

to block the Bab el Mandeb Strait in the Red Sea will encounter an international coalition that will include Israel.<sup>96</sup> The Americans believe that in January 2017 the Houthi rebels laid maritime mines in the coastal waters of the Gulf of Muka in Yemen. The US navy and Force 150, which is made up of French and British vessels, is currently operating to guarantee freedom of movement in the Bab el Mandeb Strait. It can be said that the region is characterized by all of the elements of asymmetric warfare and littoral warfare.

### Migration by the Sea Routes

The movement of refugees by way of the Mediterranean to Europe is not a new phenomenon and it has already claimed the lives of many thousands of them. Nonetheless, the flow of migrants has intensified during the last decade as a result of the **civil war in Syria and African refugees arriving by way of the Libyan coast**. According to the report by the UN International Organization for Migration (IOM), by the end of September 2018, 78,372 migrants and refugees managed to enter Europe by way of the sea (in contrast to 132,715 during the corresponding period in 2017). 34,238 of them arrived in Spain, 20,859 in Italy and 22,261 in Greece. 10,000 were returned to the coast of Libya by the Libyan coast guard. Figure 31 presents the situation of migration by way of the sea to the coasts of Europe up until August 2018 (including those killed and drowned).

In 2018, a downward trend could be seen in the number of refugees trying to cross the Mediterranean from Africa to Europe, although the proportion of refugees who lost their lives in these attempts rose sharply. The UN Refugee Agency announced that up to July 2018, 1095 individuals had died on the main route through the Mediterranean from Libya to Italy and the proportion of deaths is now about 1 for every 18 refugees that make it to Europe. For purposes of comparison, in 2017 2276 refugees died (a ratio of 1 to 42) on their way to Europe. Vincent Cochetel, the UN envoy to the Central Mediterranean, said that "The reason the traffic has become more deadly is that the traffickers are taking more risk, because there is more surveillance exercised by the Libyan coastguards and smugglers are taking greater risks while transporting the refugees." In addition, the UN reported that more than 300 refugees died on the sea route from North Africa to Spain, an increase of 50 percent relative to 2017.<sup>97</sup> Against

96 Daniel Siriuti and Lilach Shuval, "Iran will find itself facing a determined coalition," *Israel Today*, August 1, 2018. (Hebrew)

97 Jon Henley, Sharp rise in proportion of migrants dying in Mediterranean, says UN, *The Guardian*, September 3rd 2018, <https://www.theguardian.com/world/2018/sep/03/sharp-rise-in-proportion-of-migrants-dying-in-mediterranean-says-un>

this background, the EU is considering the idea of building an absorption and sorting center for migrants in North Africa, in an effort to deter individuals from taking the life-threatening voyage to Europe by way of the Mediterranean.



Figure 31: Arrival of refugees in Europe by way of the sea, up until August 2018 (including those who died on the way)

**Warfare in the cyber domain** has been on the rise in recent years on all levels: national, economic, military and operational. The intervention by Russia in the 2016 US presidential elections is still being investigated. The recognition of cyber as an additional domain (even if virtual) demands attention at all levels. Accordingly, and as part of the formulation of strategies in the various areas (such as the US Nuclear Posture), the White House published a document signed by President Trump entitled National Cyber Strategy on September 20th. The report opens with a declaration that the prosperity and security of the United States is dependent on the way in which we respond to opportunities and challenges in the cyber domain.<sup>98</sup>

The rise of the Internet and the growing centrality of cyberspace to all facets of the modern world corresponded with the rise of the United States as the world's lone superpower. For the past quarter century, the ingenuity of the American people drove the evolution of cyberspace, and in turn, cyberspace has become

98 National Cyber Strategy of the United States of America, Introduction P. 1, September 2018

fundamental to American wealth creation and innovation. Cyberspace is an inseparable component of America's financial, social, government, and political life. Meanwhile, Americans sometimes took for granted that the supremacy of the United States in the cyber domain would remain unchallenged, and that America's vision for an open, interoperable, reliable, and secure Internet would inevitably become a reality. Americans believed the growth of the Internet would carry the universal aspirations for free expression and individual liberty around the world. Americans assumed the opportunities to expand communication, commerce, and free exchange of ideas would be self-evident. Large parts of the world have embraced America's vision of a shared and open cyberspace for the mutual benefit of all. Our competitors and adversaries, however, have taken an opposite approach. They benefit from the open Internet, while constricting and controlling their own people's access to it, and actively undermine the principles of an open Internet in international forums. They hide behind notions of sovereignty while recklessly violating the laws of other states by engaging in pernicious economic espionage and malicious cyber activities, causing significant economic disruption and harm to individuals, commercial and non-commercial interests, and governments across the world. They view cyberspace as an arena where the United States' overwhelming military, economic, and political power could be neutralized and where the United States and its allies and partners are vulnerable. The role of the national strategy in this domain is to ensure the continued existence of the cyber domain in way that will reflect the values of the United States, will protect its security and will promote its prosperity.

In practice, it is worth emphasizing that the civilian maritime sector that is most vulnerable to this type of attack is the shipyards and ports sector (as pointed out in more detail in the previous report). The damage to the maritime sector has increased over time since it adapts slowly to the developing threat and it has only gradually come to the realization that ships and ports, like anything else, are now part of the cyber domain. The International Maritime Organization (IMO) is a body of the UN that is responsible for regulation of the maritime domain. It has been tardy in understanding the developments in this area and the need to establish regulatory frameworks for cyber security. Although in 2014 the IMO consulted with its member companies with regard to cyber security guidelines and in 2016 it issued the Interim Cybersecurity Risk Management Guidelines, they are not very specific and do not protect global



shipping from such attacks. Experts in the field believe, not surprisingly, that in the meantime over 50,000 ships are exposed to cyber attacks.<sup>99</sup>

### **Marine environmental protection and global trends in the planning of the maritime domain**

Oceans, seas and coastal areas constitute an **integrated and vital component of the Earth's ecosystem** and they are essential to the continuing use of its resources. There is a need to control the ongoing exploitation of the oceans, the seas and the resources found within them, even if it appears that they can be used to eliminate poverty and to support economic growth, food security and creation of employment. Alongside controlling the use of these resources, attention must be devoted the protection of the maritime environment in all its aspects, including **preparations for the effect of climate change**.

The **Regional Seas Convention** and the triennial **Action Plans** are meant to achieve these goals by means of deepening the involvement of the signatory nations, through appropriate national legislation and the adoption of effective control and enforcement mechanisms.

**The Action Plan for 2017-2020** was drawn up and approved by 143 member nations located in 13 different regions of the world. The difficulties in implementing the plan are primarily political and economic. Since this report focuses on the Eastern Mediterranean, the main environmental threat originates from **activity that pollutes the marine environment** and thus affects both human uses of the sea and the fisheries in the region.

Israel is signed on the **Barcelona Convention** for the protection of environmental quality in the Mediterranean, which includes six Regional Activity Centers (RAC). **In March 2018, a report was published by the UN Environmental Programme (UNEP)** on the status of the Mediterranean. According to the Ministry of Environmental Protection this is the first report of the Integrated Monitoring and Assessment

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<sup>99</sup> David Rider, the maritime cyber threat, why 50,000 ships are so vulnerable to cyberattacks, Maritime Security Review, June 18, 2018 <http://www.marsecreview.com/2018/06/the-maritime-cyber-threat/>

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Program (IMAP). The report is based on data gathered by all of the nations signed on the Barcelona Convention as part of national monitoring programs and research.<sup>100</sup>

The report contains **worrying findings** according to a number of measures, such as the number of areas with concentrations of mercury in the seabed and the steady increase in the number of invasive species that are entering the Mediterranean by way of the Red Sea and the Suez Canal. Israel is taking a leading role in the monitoring and study of this subject and indeed the only case study presented is of Israel's coasts.

Nonetheless, the report points to an improvement in some of the parameters. In Israel, for example, there has been a significant downward trend in the concentration of poisonous tin compounds, which originate from the antifouling paint on ships.

The report also points to the gaps in existing information and suggest ways of closing them. A clear example is the lack of scientific data for the North African countries. Maritime waste is an important challenge to the marine environment, but monitoring only began in recent years and in some countries has never been done. In Israel, monitoring of maritime waste began in 2017. It is important to mention that the report is only preliminary and that the monitoring program is only in its initial stages.

## Conclusion

The world is in the midst of far-reaching changes that will have an impact on the maritime domain in its widest possible sense. The year 2018 is liable to be a turning point in global trade—as a result of the imposition of tariffs on Chinese goods by the US administration and the response by China, which is liable to slow international trade and the very processes of globalization.

In the international arena, the **United States** is still the leading superpower but it is increasingly being challenged by China and Russia and in the Middle East it has abandoned its role as superpower, thus allowing Russia to step in. Despite the resources invested by the Trump administration in the expansion of the US navy and its ability to deal with its expected challenges in the various theaters, it does not appear that the navy will reach its target of 355 vessels that it set for itself during the coming decade.

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100 A summary of the Barcelona Convention Report on the Status of the Mediterranean – March 2018, the Ministry of Environmental Protection website. <http://www.sviva.gov.il/subjectsEnv/SeaAndShore/MonitoringandResearch/Documents/summary-report-Barcelona-convention.docx> (Hebrew)

The Trump administration adopted the term **Indo-Pacific** region which appears in the National Security Strategy (NSS) document, in order to capture the idea that the US has more critical interests beyond the Pan-Asian region. The full exploitation of this strategy's potential requires smoothing out the differences beyond the boundaries of the Indo-Pacific region and to decide what is feasible and what should be done in this huge geographic area. The NSS describes the geopolitical competition in the Indo-Pacific region between a vision of freedom and a vision of coercion in the world order, in which China is using economic incentives and sanctions, as well as military intimidation, to persuade other countries to support China's political and military agenda. The Trump administration will soon need to identify and implement specific projects for the "grand strategy" in order for it to become reality.<sup>101</sup>

**Russia** is maintaining a subversive strategy and doesn't hesitate to use covert means such as cyber warfare or chemical warfare in order to operate against Western regimes, with the goal of undermining their stability. The use of subversive politics of this sort enables it to achieve its geopolitical and geostrategic goals, despite its poor economic state.

**The two rising superpowers—China and India (which are rivals)**—are becoming regional superpowers, which is also manifested in the growth in the quantity and quality of their **vessels**. These two powers are also expanding their **nuclear deterrent capabilities** and in particular its submersible component. The new interests of their policies, as expressed in their military strategies, emphasize their aspiration to expand the maritime activity to the open seas beyond their coasts (or in other words to attain a blue-water navy).

In the sense of classical strategic approaches, the question that arises with respect to both China and India (between whom there has rivalry since the period of conflict in the Himalayas in 1962) is as follows: Are they choosing to **discard their continental images and envisage a maritime role** or are they remaining **loyal to the ground component which has greater geostrategic significance** despite the huge investment of resources in building navies with the abilities to deter and project power?<sup>102</sup> The characteristics of the development of these two navies, as observed in recent years and as described in this report, point to the fact that they are shifting

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101 Alyssa Ayres, The U.S. Indo-Pacific Strategy Needs More Indian Ocean, Foreign Affairs.com, May 25, 2018 <https://www.cfr.org/expert-brief/us-indo-pacific-strategy-needs-more-indian-ocean>

102 Zorawar Daulet Singh, India's Geostrategy and China: Mackinder versus Mahan? *Journal of Defence Studies*, Vol-7, Issue-3. pp- 137-146, 2013

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to the maritime arena (both in terms of their conventional forces and their nuclear deterrent), at the expense of the ground forces.

**The Russian navy** is restoring its capabilities, increasing its number of vessels and adopting a new military doctrine. It is presenting the US and NATO navies with operational challenges in theaters such as the Black Sea and the Eastern Mediterranean, the Baltic Sea and the North Pacific. The Russians are fully exploiting geopolitical opportunities (such as in Syria and Iran) in order to deploy their naval and aerial forces and thus are also creating a situation in which they are **displacing the US navy from the region**.

In 2018, as in previous years, **relations were tightened between the Russian and Chinese navies** and they held joint exercises in various regions of the world. Apart from the media coverage of this development, this cooperation is not unlike that between the US and the NATO countries or Japan. Although Russia is selling weapons to China—more than \$10 billion since 2011—this is primarily because it is in need of hard currency. Both countries are jointly developing new drones. China wants to be able to deny access to American ships in the South China Sea region and the two navies are holding joint exercises in order to counter US influence in Asia.

**Climate change** in the Arctic region is creating opportunities for the exploitation of resources and the shortening of shipping routes. Resource-poor **China** has begun to collaborate with Russia in the development of oil and natural gas fields in the Arctic Ocean in order to reduce its reliance on the supply of energy from the Middle East. **Both Russia and China** are building navies for future operations in this important region.<sup>103</sup>

In addition to China's interest in diversifying its sources of energy to include regions like the Arctic, most its economic and industrial power is concentrated along its coast, which raises concerns regarding phenomenon such as **the possible rise in sea level** as a result of the melting of the icebergs and the subsequent flooding of coastal cities.

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103 John Grady, China Expanding Economic Influence in Americas, Research in the Arctic, USNI News, September 14, 2018 [https://news.usni.org/2018/09/14/36564?utm\\_source=USNI+News&utm\\_campaign=4393a2ebe9-USNI\\_NEWS\\_WEEKLY&utm\\_medium=email&utm\\_term=0\\_0dd4a1450b-4393a2ebe9-233591665&mc\\_cid=4393a2ebe9&mc\\_eid=6495944afc](https://news.usni.org/2018/09/14/36564?utm_source=USNI+News&utm_campaign=4393a2ebe9-USNI_NEWS_WEEKLY&utm_medium=email&utm_term=0_0dd4a1450b-4393a2ebe9-233591665&mc_cid=4393a2ebe9&mc_eid=6495944afc)

The **United States** is also coming to understand the importance of the Arctic and in March 2018 it renewed its annual ICEX exercises in the Arctic, which involves its fleet of nuclear submarines in collaboration with the British navy. To this end, a temporary base called Ice Camp Skate (named for the first American submarine class to sail under the Arctic ice cap) was established and two American submarines and one British one arrived in the region.<sup>104</sup> In addition, the US Coast Guard is trying to obtain a budget of \$750 million in order to begin construction of a **fleet of icebreakers** that will carry out security missions in the North Pole area (an ability that does not currently exist).<sup>105</sup>

The broad international effort (even if some countries, such as China and India, are not coordinating their operations with the others) to counter **maritime piracy** is having some degree of success in the Eastern Indian Ocean and the Gulf of Aden. This requires a great deal of resources and places an economic burden on the shipping companies. At the same time, there is increasing danger of **maritime terror** and in particular in the waters of nations experiencing civil war or of failed states. This situation already exists in the Bab el Mandeb Strait in which the Houthi rebels, who are supported by Iran, are fighting against Yemen and Saudi Arabia. As a result of the US withdrawal from the agreement with Iran and the imposing of sanctions on the Teheran regime, the **Revolutionary Guard navy** is continuing to operate provocatively in the Strait of Hormuz and to threaten its closure in response to the stringent US sanctions or to deter possible American action against Iran's nuclear facilities.

The protection of the marine ecosystem continues to lag behind the pace of exploitation of ocean resources and the component of human security within maritime security is threatened. Harm to any one of the system's components is liable to violate the ecological balance and to cause a collapse of the system, the destruction of fisheries, the extinction of species and damage to essential resources, whose supply is dependent on the health of the system. Ocean pollution by plastic, leakage of fuel products from drilling rigs, pollution as a result of shipping accidents, etc. are threatening the ecosystem and they call for preventative measures to preserve its internal balance.

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104 US Navy kicks off ICEX 2018 in the Arctic Ocean, NavalToday.com, March 8, 2018  
<https://navaltoday.com/2018/03/08/us-navy-kicks-off-icex-2018-in-the-arctic-ocean/>

105 Sam Lagrone, Coast Guard Renames New Icebreaker Program 'Polar Security Cutter, USNI News, September 27, 2018 <https://news.usni.org/2018/09/27/36846>