

MARITIME STRATEGIC EVALUATION FOR ISRAEL 2020/21

Chief editor: Prof. Shaul Chorev

Edited and produced by: Ehud Gonen



Maritime Policy & Strategy Research Center
המרכז לחקר מדיניות ואסטרטגיה ימית



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August 2021

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The Maritime Strategy Evaluation report, including the insights and recommendations included in it, are based on the personal experience and professional judgment of the authors, but do not necessarily represent the official position of the Center or of the Haifa University.

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Maritime Policy & Strategy Research Center

The center is developing knowledge in maritime strategy, focusing on Israel's maritime surroundings: the Eastern Mediterranean and the Red Sea. The center does so in five core areas: (1) regional security and foreign policy, (2) the mobility of goods, people and ideas, (3) law, (4) energy (5) and the environment.

The center was established in response to the of rising significance of the maritime domain both globally and in our region: the emerging strategic maritime competition between the United State and China, the expansion of exclusive economic zones (EEZ) and the crucial role of the seas in the international economic system both as a source of economic activity as well as serving as the world's main trade route. Our immediate environment saw a similar rise in the significance of the seas including the oil discoveries in the eastern Mediterranean, the evolution of the Israeli navy into a national strategic arm, Israel's total dependence on sea trade, and the growing realization that future development of national infrastructure may have to be done in the sea as land is becoming scarce.

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Executive Summary

The **Eastern Mediterranean** and the surrounding regions were again characterized by instability in 2020. The abandonment of the region by US forces continued while Russia deepened its involvement in the region. China continued to invest in the economies of Greece, Israel, Cyprus and most recently also Egypt, and has thus acquired growing political influence, to the chagrin of the US. The axis of Russia, Turkey and Iran in the Middle East (despite the periodic differences of opinion between them) has grown in strength. Turkey is trying to promote its policy of Mavi Vatan ("Blue Homeland") in the Eastern Mediterranean and create facts in its economic waters, whether by demonstrations of maritime power or by means of agreements with countries such as Libya in order to divide the economic maritime domain between them. At the same, an axis between Greece, Cyprus, Israel and Egypt is taking shape and has gained the support of Middle Eastern countries that do not lie on the Mediterranean coast, such as Saudi Arabia and the UAE, in addition to US support. The lack of state stability ("failed states") in the Eastern Mediterranean region has expanded as a result of the continued fighting between the various factions in Libya, the situation in Syria that has yet to stabilize and the explosion in the port of Beirut which has exposed the depth of the socioeconomic crisis in Lebanon.

The Corona pandemic: Despite the crisis, Israel's ports managed to adapt their work methods to the new regime and there were hardly any problems experienced in the flow of exports and imports. This was thanks to the operation of the ports under a system of quarantine and compartmentalization between worker shifts in order to prevent infection spreading among the port's manpower. The Corona pandemic is occurring at a critical point in the development program of Israel's ports. In Ashdod, the construction of the Hadarom Port, which will be operated by TIL, a Dutch international operating company, is near completion and the Hamifratz Port in Haifa is meant to be turned over to SIPG, a Chinese operating company, in 2021. In addition, the Government Companies Authority is pushing forward the privatization of the old port of Haifa, a move that was approved by the Ministerial Committee for Privatization at the beginning of 2020. Thus, within about two years, there will be four large and modern ports in Israel (in addition to the ports of Eilat and Israel Shipyards) that will be competing with one another, a situation that will improve the level of service and also the price to customers.

The natural gas resources produced in Israel's economic waters: During the past year, there have been two important development that require analysis and monitoring by decision makers: the first is the purchase of Noble Energy by Chevron and the

second is the lack of action on the part of Israel to exploit its rights in the Yishai-Aphrodite field (off Cyprus). Noble Energy was acquired in the summer of 2020 by Chevron in a deal that involves many economic and political challenges. The entry of Chevron, a giant multinational energy company, into the Israeli economic landscape can serve as an opportunity for Israel but it also brings risk. As opposed to Noble Energy, Chevron's size gives it the option of delaying the development of its oil and gas fields and to wait until global prices recover. This is not in line with Israel's interest to accelerate the second stage of development of the Leviathan field and to encourage exports in order to maximize the tax benefits that were expected after the approval of the gas agreement. Furthermore, it may be that Chevron will be a less flexible partner than Noble Energy with respect to gas prices in the domestic market, particularly during the expected negotiations with the Israel Electricity Company after its contract with the Tamar field reopens in 2022. For Chevron, this is a positive deal that gives it ownership not only of potential oil fields in the US but also active gas fields in Israel that are already producing healthy profits for the operating consortium. Notwithstanding the statements of senior officials in the Ministry of Energy in praise of the deal, Israel should monitor Chevron's activity to see if indeed this is good news for the local and regional economy or whether the abovementioned concerns are realized.

While Israel found it difficult to withstand the political pressures applied by Noble Energy prior to the signing of the original contract with the Israel Electricity Company in 2012 and the approval of the gas agreement in 2016, it will be many fold more difficult to stand up to one of the largest and strongest companies in the world.¹ In the area of environmental protection, it may also be problematic for Israel to meet Chevron's demands with respect to the transparency of processes and the monitoring of various data.

The Yishai-Aphrodite field: This natural gas field straddles the boundary between Israel and Cyprus, and there are strong indications that Cyprus may soon begin unilateral development without coordinating with Israel. As of now, there do not appear to be any efforts between the two countries to arrive at a consensus on the joint development of the field and it appears that Israel is not reacting to Cyprus' unilateral moves. Israel's lack of reaction may have diplomatic, security and economic motives that are amplified by the growing tension between the countries

1 Eli Retig and Shaul Chorev, Acquisition of Noble Energy by Chevron – A deal with economic and political opportunities, Globes, August 16 2020. <https://www.globes.co.il/news/article.aspx?did=1001339473> [Hebrew]

of the region and in particular between Greece and Turkey, and these may lead Israel to concede on its share of the field in favor of these interests.

National infrastructures in the sea: The decision to change the location of the Leviathan production rig and to build it closer to shore and, in contrast, to leave the production rigs of Karish and Tanin, which are near the boundary with Lebanon, at a greater distance (70–80 km) from shore is an indication of the lack of a national body that can **examine alternatives** and present the implications of each.

There are infrastructures on the coast of Israel that occupy valuable land and some of them are also hazardous. In a decision made on June 7th 2012, the government approved the creation of an interministerial steering committee to examine the technological feasibility of creating artificial islands on which infrastructures will be located.

The first cluster that was prioritized for transfer included the gas production facility, gas-burning power plants, a desalinization plant and a facility for hazardous materials. At a later stage, it will also be necessary to consider the building of an airport on an artificial island. Since the decision was made, **there has been rapid technological progress** (such as the FPSO – Floating Production Storage and Offloading facility), which has eliminated the need for sand as a means of landfill and for pillars that limit the location to the continental shelf. Furthermore, at the completion of its function or in an emergency situation the island can be moved to an alternative location.

The Iranian threat: The US withdrawal from the nuclear agreement with Iran and the intensification of sanctions against Iran have yet to achieve the hoped-for results. Moreover, the European countries who are also members of the agreement (Britain, France and Germany) have announced that they have no intention of withdrawing from the agreement as long as Iran does not commit a major violation. The two additional countries in the agreement (Russia and China) have taken an oppositional position with respect to the US by supporting Iran. They—and in particular China—are finding ways to bypass the sanctions mechanism. The Corona pandemic had a major effect on the Iranian economy, which was already in a difficult situation as a result of the economic sanctions imposed by the US and the drop in oil prices. In the geopolitical arena, Iran has even exploited the situation in order to upgrade its status in the region. At the end of December 2019, the Iranian navy held a joint naval exercise with the navies of Russia and China, which provided additional recognition of Iran's status in the region by the two superpowers. During the past year, there has been some progress in the buildup of Iranian naval power: long-range naval missiles became operational and Iran continued to construct naval vessels. Iran is **adopting a**

policy of brinkmanship even if sanctions are a drag on its economy. Israel, which has relied on US policy on this issue, needs to "recalculate its route", particularly in view of the fact that there is a new US administration since the beginning of 2021.

The Gulf states: In mid-September 2020, a ceremony was held at the White House at which the Abraham Accords were signed. The accords include the normalization of relations between Israel and the UAE and Bahrein and were mediated by the US. Other countries in the region may also sign the agreement in the future. Qatar continues to transfer millions of dollars to the Gaza Strip by way of the UN assistance frameworks despite its belonging to the bloc supporting Iran.² Foreign Minister Katz announced **Israel's participation in the coalition to ensure free passage in the Persian Gulf**, which represents a dramatic turnaround in Israeli policy and has significant policy and security implications. It calls for an assessment of the situation that the navy and defense officials should take part in, something that has not been done so far to the best of our knowledge.

The Red Sea: The Red Sea and in particular its southern section, through which flows one-quarter of Israel's trade (both to Eilat and to Israel's ports on the Mediterranean by way of the Suez Canal), continued to be a danger area for shipping. The Bab el Mandeb Strait is a chokepoint which grants it strategic importance that will only increase in the foreseeable future from the military, economic and business perspectives. It is important that decision makers in Israel broaden their perspective to include this arena and that they take into account non-state players that operate in the area on behalf of Iran. They need to evaluate the ability of these groups to have an impact on free passage in the region. Furthermore, account should be taken of the positive developments—from Israel's point of view—in the region, such as the normalization agreement with Sudan, the warming of relations with Saudi Arabia, the interest of China as part of the Belt and Road Initiative and the role of international commercial interests and in particular multinationals. Understanding these trends, as well as examining ways of dealing with their consequences, is essential in order to navigate the geographical chokepoints of that are essential to global trade.³

2 Yaniv Kovovitz, With Israel's approval: Qatar has transferred more than a billion dollars to Gaza since 2012, Haaretz, February 10, 2019. <https://www.haaretz.co.il/news/politics/premium-1.6917729> [Hebrew]

3 Christopher D. Booth, Navigating Naval Chokepoints in the Age of COVID: The Bab-Al-Mandab and Other Dangerous Straits? Real Clear Defense, 8 July 2020. https://www.realcleardefense.com/articles/2020/07/08/navigating_naval_chokepoints_in_the_age_of_covid_the_bab-al-mandab_and_other_dangerous_straits_115449.html

The pro-Western Sunni axis in the Middle East: The agreement signed in September 2020 in Washington between Israel and the UAE in some sense strengthened the position of the **pro-Western** Sunni axis (UAE and Bahrein) in the Middle East, particularly in view of their close geographic proximity to Iran itself. Nonetheless, there is still a leadership vacuum in the absence of an external superpower like the US, which in the past was a condition for creating a regional coalition, such as during the first Gulf War in 1991.

Israel-Turkey relations in the Eastern Mediterranean: At the beginning of December 2019, ships of the Turkish navy drove off an Israeli research vessel, the Bat Galim, which belongs to Israel Oceanographic and Limnological Research within the Ministry of Energy. The ship was carrying out research within Cypriot economic waters with the approval of the Cypriot government. Israel reacted with a delay and according to online news sites, Israeli naval forces, accompanied by Israeli air force planes, carried out military maneuvers in the waters of the Eastern Mediterranean, in the same region in which the Turkish ships had driven off the research vessel.⁴ The Israeli response was by means of a naval exercise, which in the short run perhaps met the challenge, together with the use of diplomatic means as part of its maritime strategy. However, 99 percent of Israel's trade is by sea and therefore it must prepare for a situation in which such an action by the Turkish navy develops into more than an isolated incident and it needs to formulate plans to respond accordingly. With that said, it must be cautious not to harm the economic relations between Israel and Turkey, which have continued to develop despite the aforementioned events.

The Israeli government's policy in the maritime domain: Following three elections within the space of a year, the 35th government of Israel was formed in May 2020. From the moment of its creation, the government had to deal with the result of the second wave of Corona, which halted the progress being made on issues related to the maritime domain, including: the proposed Maritime Regions Law, 2017 which the Economic Committee of the Knesset has been preparing for second reading since May 2018; approval of the Maritime Policy – Israel plan, which was prepared by the Planning Authority; a feasibility study for the creation of artificial islands that will house infrastructure clusters – a government decision approved in June 2012; and others. It is in fact the demarcation of the border with Lebanon on which progress has been made. The President of Lebanon and the Chairman of the Lebanese Parliament, with the "approval" of Hezbollah, have agreed to begin negotiations on

4 Times of Israel Staff, Turkish ships said to force Israeli research vessel out of Cypriot waters, December 14, 2019. <https://www.timesofisrael.com/turkish-ships-said-to-force-israeli-research-vessel-out-of-cypriot-waters>

the issue by way of American mediation and the talks between the two countries are ongoing. This channel was suggested in the past by the Haifa Research Center for Maritime Policy and Strategy as the preferred way to solve the problem.

The navy's submarine and surface vessel deal: During the past year and against the background of three election campaigns, **this deal was prominent in public discourse** and was often at the center of the public protests. Former senior officials in the Acquisitions Authority of the Ministry of Defense (Manhar in Hebrew) again stated that in their opinion the lessons had not been learned from the irregular processes that had taken place. Apart from the legal processes that revolve around this issue, **the defense sector must investigate its acquisition processes** with emphasis on monitoring and conflicts of interest, with the goal of ensuring that irregularities of this sort do not reoccur.⁵ At the time of writing, the Minister of Defense had indeed appointed a committee to examine the procedures for naval acquisitions from Germany, although the appointment had more of a political air to it, which casts doubt on its ability to carry out its tasks.

New technological developments in maritime warfare: There is a broad trend among the Western navies to diversify their forces, including the introduction of **unmanned naval and aerial vehicles** (both on the surface and underwater and on airborne aerial platforms) and in particular as part of littoral warfare.⁶ Cyber warfare against harbors and ports has become an imminent threat, and it also threatens the communication cables that connect Israel to Europe.

There has been rapid progress in **Artificial Intelligence (AI)** recently in a variety of civilian and military applications. It is a known fact that modern navies are constantly searching for better, faster and more powerful weapons and technologies.⁷ Naval forces that are supported by AI will have the ability to deal efficiently with larger amounts of information and this will improve their communication, command and control abilities, as well as the operation of their weapons systems based on their inherent decision making and computing capabilities. Navies worldwide are investing

- 5 Hagai Amit, Shelah initiated a discussion of the submarine and surface vessel affair – Miki Zohar threatened that he would be deposed from his position, TheMarker, June 26, 2020. <https://www.themarker.com/news/politics/1.8955299> [Hebrew]
- 6 Martin Manaranche, France To Order Four Unmanned Systems for Mine Warfare This Year, Naval News, 2 June 2020. <https://www.navalnews.com/naval-news/2020/06/france-to-order-four-unmanned-systems-for-mine-warfare-this-year>
- 7 Aamir Yaqoob, Artificial intelligence and naval warfare – a strategic imperative, The Frontier Post, 20 August 2020. <https://thefrontierpost.com/artificial-intelligence-andnaval-warfare-a-strategic-imperative>

in AI research and development in a variety of security-related capabilities, such as the gathering and analysis of intelligence, logistics, cyber activity, data activity, command and control, and also semi-autonomous vehicles.

Maritime education in Israel: The Mediterranean Sea Research Center of Israel is a consortium made up of seven research universities, one college and two government research institutes. It was founded in 2012 at the initiative of Haifa University. Again this year (i.e. 2020), the consortium did not receive the additional budget it needs and as a result the expansion of its research activity in the Eastern Mediterranean essentially came to a halt.

The Haifa University master's degree program in National Security and Maritime Strategy is a supplementary program in the Department of International Relations of the School for Political Science. The program is entering its third year and is perceived as a prestigious degree. The importance of the subject and the need to increase the number of researchers in this area requires making it an independent program shared by several schools and departments at Haifa University.

The maritime environment has become a central issue in Israeli public discourse as can be seen in the opposition of residents to the building of the gas rig near their homes and the challenge to its operators to maintain accurate emission reports.

Maintaining Israel's maritime connection in peace and war: Israel's geostrategic situation requires the maintenance of an infrastructure of merchant ships and seamen for both civilian and military needs. The Israeli shipping industry must continually compete with the merchant fleets of countries with long maritime traditions on the one hand and with countries that permit shipping under flags of convenience on the other.

This competition has placed Israeli shipping in a difficult situation, which has become even worse during the past year with respect to both the proportion of Israeli ships (a total of 35 ships of which 6 fly the Israeli flag) and the ships' crewmen (of which there are 52 officers and 5 cadets).

It is important that there be a "hard core" within the Israeli merchant fleet that in a period of emergency is able to ensure essential shipping to and from Israel and to fulfill the regulations established by the policy to man Israeli merchant ships with Israeli seamen.

In addition, it is essential to implement Government Decision 1107 passed on December 30th, 2013 which was meant to improve the competitive ability of Israeli

shipping, to preserve the professional knowledge in this area and to maintain an essential maritime infrastructure and an Israeli maritime transportation system.

In view of the globalization trend and its effect on the characteristics of shipping companies worldwide, there is a need to formulate a policy to maintain an essential merchant fleet and to operate the ports in an emergency which includes complex scenarios of rocket and missile attacks and also in the event of cyber attacks on the port infrastructure.

The agreement signed to **privatize the Port of Haifa** at the beginning of 2020 and the issuing of a tender to operate the port in the summer of 2020 are important steps in increasing the efficiency of the ports. It is important that future tenders will allow Israeli companies with proven experience in this area to compete. It is worthwhile that in choosing a winner in the tender to privatize the Port of Haifa significant weight should be given to companies that are not involved in container traffic but rather are involved in the transport of bulk and general cargo. It is worthwhile adopting this approach also in the Port of Ashdod.

The driving off of the Bat Galim research ship by Turkish naval vessels from Cyprus' economic waters and the Turkish claim to the economic waters south of Cyprus call for an Israeli policy to deal the possibility that essential shipping to Israel will be interrupted.

The recent events in the **southern Red Sea** have transformed it into a region of instability and to some extent they have raised the risk to the passage of merchant ships. A significant proportion of Israel's trade is with Asian countries and therefore it must devote attention to this issue and to adopt an appropriate defense policy that will translate into missions for the navy and whose goal will be to protect these essential waterways. In this context, consideration should be given to joining the international forces operating in the region.

Israel has no interest in the **guaranteeing of passage for tankers in the vicinity of the Hormuz Strait** since it does not import oil from Iran. It is unnecessary to open another front with Iran by openly declaring that Israel is becoming part of this mission.

In the context of port infrastructure, it is worth mentioning that Decision 732 of the Security Cabinet, which was approved in October 2017, with regard to foreign investment in Israel was the result of, among other things, the concerns raised in the previous report of the Center and of the Hudson Institute in the US with respect to the contract signed by Israel with SIPG, a Chinese company, for the operation of the Hamifratz Port for a period of 25 years. Although the fundamental problem of having

an essential infrastructure in the State of Israel operated by a foreign company was not resolved, at least it created a mechanism and a process for dealing with similar issues in the future.

This strategic evaluation is a **policy-oriented document**, as distinct from an academic document, and accordingly, we decided to summarize it in the form of ten recommendations that are in principle directed toward policy makers, various government ministries and the navy. All of the recommendations are at the level of the government's maritime policy. The recommendations do not necessarily appear in order of importance or their degree of urgency.

First recommendation – Formulation of a maritime policy and strategy for Israel

During the past year, there has not been any progress made on this front and it was not even mentioned in the political parties' platforms. Apart from the Eastern Mediterranean region, in which changes are taking place that necessitate the formulation of a maritime strategy, there have been far-reaching changes also in the **Red Sea and the Gulf of Aden** which have been reported on at length even in this report. Israel's surrounding seas, the Mediterranean and the Red Sea, are also the setting for changes that make it imperative to redefine Israeli interests in the region and to include them in the process of formulating Israel's maritime policy and strategy.

Second recommendation – Formulation of Israel's foreign policy in the Eastern Mediterranean and the Red Sea

Israel's interests in the Eastern Mediterranean and the Red Sea should be decided on, as well as the optimal policy in order to protect those interests. To this end, the following actions are necessary:

- To identify potential allies and to examine the opportunities and risks arising from growing Russian presence in the Eastern Mediterranean. The domains in which Israel and Russia can cooperate should be identified, as well as the cases, if there are any, in which there are joint interests with the United States.
- To identify the geopolitical and geostrategic changes occurring in the Red Sea and in particular in its southern section; to identify the possibility of "translating" the normalization agreements with countries such as Saudi Arabia and Sudan in order to ensure Israeli freedom of passage in the southern Red Sea.

- To monitor the development of the maritime component of relations with Turkey as a factor with regional impact that has potential risks for Israel in the maritime domain; to examine Israel's long-term geopolitical interests and those of Turkey; and to formulate an overall policy that includes the nature of Israel's response at sea.

Third Recommendation – The domain of shipping and the ports and the securing of essential passage to and from Israel

Ensuring critical shipping to and from Israel both in normal times and in a crisis. This policy should focus on ships under Israeli control, Israeli crews, open waterways and protection from cyber attacks.

In view of the signing of a memorandum of understanding between the Europe Asia Pipeline Company and a company from the UAE with regard to the transport of oil from the UAE to Israel, the National Security Council should produce a document that examines all of the implications (including relations with Egypt, environmental impact, etc.) before the signing of the agreement itself.

Fourth recommendation – Processes of naval buildup to enable a response to the challenges developing in the maritime arena

In view of the evolving nature of naval warfare, changes in the balance of naval power in the Mediterranean (and particularly the oppositional approach that Turkey has adopted toward Israel) and the increasing threat in the southern Red Sea to Israeli shipping, the following actions should be taken:

- It should be verified that the deployment of Israeli naval forces and the strategy in using them in the two arenas (and in particular in the southern Red Sea; see the eighth recommendation) indeed meet the needs of the State of Israel and in particular the growth in trade between Israel and the Far East, which passes through the Red Sea.
- It is worthwhile for the Israeli navy to join the growing trend among various navies in the world toward the use of unmanned platforms (both surface and underwater) in its missions.
- In the past decade, flaws and defects have been found in the process of acquisition in the navy and the Ministry of Defense. The navy and the defense sectors must investigate the defects revealed in the current indictments and draw the appropriate conclusions.

- It is recommended that the navy carry out an assessment of how to correctly exploit AI in order to meet its needs.

Fifth recommendation – Development and exploitation of offshore energy resources and preservation of the environment

- Given the expected conditions in the European and global markets in coming years, the government and natural gas companies in Israel should concentrate their efforts on developing the local and regional gas sector rather than searching for distant export markets. The signing of an agreement for the export of natural gas to Egypt with the Tamar and Leviathan gas partnerships is certainly a step in this direction.⁸
- The East Med gas pipeline project from Israel, Cyprus and Greece to Europe was signed at the beginning of 2020. It is an ambitious project from an engineering perspective and is not expected to be economically feasible. As long as it serves political purposes the project should be kept going, but it is not worthwhile devoting resources to it or becoming a project partner.
- The unilateral development by Cyprus of the joint Yishai-Aphrodite natural gas field which straddles the maritime boundary between Israel and Cyprus makes it necessary for the government of Israel to reach agreement with Cyprus as soon as possible with regard to developing the field.
- Since the location of the Leviathan production rig is already a fact, a body should be appointed that will be responsible for dealing with accidents or sabotage of the production rigs. National exercises should include these scenarios and the manager of the facility should be held criminally responsible for any failure that results from a cyber attack, breakdown or accident.
- In the future, additional discoveries of natural gas are expected within Israel's maritime space. Therefore it is worthwhile to designate **a body that will from time to time examine this issue and will develop tools for analysis and balancing between the various elements that determine the vulnerability of the facilities.**
- It is worthwhile formulating an environmental policy in order to protect the ecological system by means of a plan that will identify the environmental factors that need to be taken into account in producing offshore natural gas. This includes preparedness for dangerous incidents, determining the measures that should be taken in order to avoid them or respond to them and identifying potential bodies with which to cooperate in this context.

8 Lior Gutman, A new contract with Egypt: Leviathan doubles its gas exports to a neighbor, Calcalist, October 2, 2019. <https://www.calcalist.co.il/local/articles/0,7340,L-3771282,00.html> [Hebrew]

Sixth recommendation – Moving infrastructure from dry land to the sea

The planning of an offshore airport will take many years and therefore a start should be made on the feasibility studies to move infrastructure on a large scale to the sea, including the ports. This should be planned to coincide with the 100th anniversary of the State (in 2048). Since the ports are expected to be located on an artificial island (land fill), it would be desirable that the plan be formulated in collaboration with the relevant authorities in order to avoid conflicts between port infrastructures and nearby municipal infrastructure (see the case of the airport in Haifa and the Hamifratz Port).

Seventh recommendation – Developing professional human infrastructure in order to deal with Israel's new maritime challenges

- A decision should be made to allocate the public resources needed to invest in the education system and in higher education in order to create an economic, social and professional/manpower infrastructure that can deal with the challenges and opportunities in the maritime domain. This includes the production and development of energy; protection of the ecological system, including the industries needed to deal with these issues, and the creation of a "maritime consortium for Israel" that will serve as a platform for discourse among stakeholders on this topic.
- The importance of the maritime space for the State of Israel has not been recognized in the **various R&D programs of the Ministry of Science**. It is worthwhile that at least one of the eight regional R&D centers be devoted to the maritime space and the Israel Space Agency should also be involved in this important direction of research.
- The elimination or reduction of the **Council for Higher Education / Budgeting and Planning Committee budget for the Israeli Consortium** in order to study the Mediterranean is a mistake, even if the running of the consortium and the involvement of the rest of the stakeholders was not what the Council for Higher Education had in mind. A sufficient budget should be allocated to the Israeli Consortium for the Study of the Mediterranean and it should be verified that there is cooperation between all of the stakeholders.
- Against the background of the existing crisis in manpower for the Israeli merchant fleet and the unemployment in the Israeli economy as a result of the Corona pandemic, there is now an opportunity to increase the number of Israeli cadets

and officers in the **Institute for Training of Maritime Officers in Acco**, something which is not being done in practice.

- In the modern world, the separation of the technological fields from the social sciences and liberal arts is an artificial one. Haifa University has recently adopted the idea of a multiversity. The proposal of Professor Aaron Ciechanover, a Nobel Laureate in Chemistry, should be adopted and approval should be given for combined degrees between the Technion and Haifa University, starting from the upcoming academic year.

Eighth recommendation – Dealing with rogue states and terrorist organizations in the maritime space

An analysis should be carried out of the recent events in the southern Red Sea and the approaches to the Persian Gulf, in which state proxies and militias such as the Iranian Revolutionary Guard have used asymmetric and hybrid warfare tactics in the maritime space and an appropriate operational response should be formulated in order to deal with them.

- Consideration should be given to the implications of such activities originating from the coastal waters off the Gaza Strip, Syria, Lebanon and Libya in the Mediterranean or from the coastal waters of the southern Red Sea.
- It is important **to focus intelligence efforts** in order to understand the implications of possible connections between international terror and the proliferation of weapons of mass destruction and hi-tech weaponry.
- Efforts should be made at the international level and in particular involving Russia in order to prevent the Iranian navy from gaining a foothold in Syrian ports.
- Israel should exploit the window of opportunity that opened in the autumn of 2020 in order to complete the demarcation of the maritime boundary between Israel and Lebanon under American mediation on the basis of the principles presented in the work of Dr. Benny Spanier, one of the Center's researchers.⁹
- There should be a maximal effort in order to ensure that the planned talks result in an agreement that will enable the development of the Lebanese gas fields and the adoption of confidence-building measures as a counterweight to Hezbollah.

9 Benny Spanier, *By peaceful means – An examination of the conflict over the maritime boundary between Israel and Lebanon from the perspective of maritime law, summary – looking to the future*, Haifa Research Center for Maritime Policy and Strategy, July 2019, pp. 63–66. <https://hms.haifa.ac.il/images/Peacefull.pdf> [Hebrew]

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- There should be tighter cooperation with the Egyptian navy in fighting maritime terror, particularly in the Red Sea.

Ninth recommendation – Advancement and passage of maritime legislation

- At the time of the creation of the 35th government of Israel, preference was given to responding to the Corona crisis and rightly so. Nonetheless, it would be worthwhile to complete the passage of the Maritime Regions Law, 2017 as soon as possible. It is particularly important that Israeli law be applied in the maritime areas at this point in time, since by not passing the law Israel may be exposed to claims in legal proceedings that will be necessary for the development of the natural gas fields outside its territorial waters.
- It is necessary to update the Planning and Building Law, 1965 which in its current format is not aligned with the nature of activity at sea. The proposed law as approved by the ministerial committees should be passed as part of the attempt to achieve broad agreement between the professional bodies prior to the final passage in the Knesset.

Tenth recommendation – Protection of maritime infrastructures from new technological challenges

- The emerging **cybernetic threat**, particularly against Israeli ships and ports, calls for the formulation of a plan to protect the information technology (IT) systems and the operational technology (OT) systems of Israel's merchant fleet, its ports and the their supporting infrastructure from cyber attack.
- In view of the growing threat against **underwater communication infrastructure**, an analysis should be made of the resilience and redundancy of the underwater cables from Israel to Europe, which provide an essential channel of communication from Israel to the outside world. In addition, preparations should be made to foil attempts by hostile players to penetrate or harm this communication channel.

Eleventh recommendation – The participation of the Haifa Research Center for Maritime Policy and Strategy in national research

The Haifa Research Center for Maritime Policy and Strategy serves as, among other things, an independent center for multidisciplinary knowledge in the domain of maritime strategy in its broadest sense, with emphasis on Israel and its maritime environment in the Eastern Mediterranean and the Red Sea. The study of these

strategic and political issues in the maritime domain calls for unique multidisciplinary knowledge that does not currently exist in Israel.

Over the years, the Center has developed multibranch relationships with various centers and institutes in the US, India, France, Germany and Singapore and with experts in the field that have the ability to contribute to the international maritime strategic discourse that Israel is a part of.

This situation provides Israel with the possibility of being able to access professional and scientific knowledge that already exists at the Center and to invest the resources needed in order that researchers can carry out high-level applied research in the future and thus continue to contribute to and strengthen Israel's maritime status.

Section One: Global Developments

The past year has been marked by the breakout of the Corona pandemic, concurrently with continued global instability in the geopolitical sense. The latter was manifested in a loosening of the global order, which is based upon international rules and institutions, which have been established since the end of World War II, leaving room, instead, to a more complex, fluctuating security setting we have experienced in the past few decades.

Presently, the inter-state strategic competition fulfills the main national security policy of leading states, particularly the United States' national security.

The world trade has been damaged, but the latter damage is not homogenous in term of geographic, world-wide spread, as well as in terms of the damaged sectors. The Corona pandemic has disrupted the order of crew replacement on ships, thereby causing severe maritime personnel management. Many seamen have found themselves imprisoned on ships for long time-stretches, unable to refresh the lines and be replaced. The challenges of Corona have not passed over the combat fleets of the world's countries, which have prepared accordingly.

In terms of terror and piracy, the data in those fields are quite comforting. In the past few years, there has been a stable decline in the number of pirate attacks in Eastern Africa, mounting to only a few attacks a year, as well as a decline in maritime terror attacks. However, ship owners' expenses to protect their ships on that matter are still on the rise.

There is still a significant via-Maris immigration in our region, mainly from the Libyan coast to Italy, as well as from the Syrian coast through Turkey, to Greece. Although tens of thousand immigrants per years are concerned, there is a continuous decline, compared to the years 2017-2018, when there were more than one hundred thousand immigrants.

The world's key fleets have faced the challenges of Corona, as well as continued geopolitical developments in various arenas in the world, including alterations of world order, toward a democratic-authoritarian world order (as opposed to democratic-liberal order). The latter is manifested by building up the force in the powerful countries' fleets and determining attributional threats.

An important arena, which has attracted attention recently, both on the world's powerful countries' part and on the part of local and regional parties is the *Red Sea Arena*. A substantial part of the world trade passes through this sailing passage, on its way to Suez Canal. Recently, its coasts have served as a ground for a regional

influence campaign, involving Egypt and Saudi Arabia, as well as Turkey, the United Arab Emirates and other parties.

Apparently, in the Black Sea and the eastern Mediterranean Sea regions, Russia continues to act toward establishing its regional position in the East Med, simultaneously to maintaining the multitude of relations it has nurtured, intending to strengthen its influence. Russia strives to stand aside, without directly intervening in the rivalries between the various parties in the region. The Russian fleet has firmed its hold in our region, mainly through its leasing bases in Syria (Taratus and Hamimim), as well as through collaboration with Egypt, involving a joint drill with the Egyptian fleet in the Black Sea in the past year. Russia has acted toward reinforcing its presence both in Libya and the Red Sea, through an agreement to use Port Sudan. Apparently, viewing the Russian efforts and resources on the western side of this mega-state, Russia leaves the Eastern Pacific region for the struggle between China and the United States.

The geo-strategic and geopolitical state in the South China Sea, where an sovereignty conflict has persisted for many years, between China and the surrounding countries has become more complicated, following several strategies and actions taken by China, partly based upon the Chinese culture and history, which have granted China the relative superiority in the current conflict.

Global Developments in the Maritime Domain

Shaul Chorev

As in previous year, although this report's assessment focuses on the East Med and the Red Sea, the occurrences in this arena may not be addressed separately from the recent global development of general, and in the maritime domain in particular, because of the close affinities between events in the global domain and their influence on the region near Israel.

The year 2020 was characterized by continued *global instability* in its geopolitical sense, manifesting by a weakening of world order based upon international rules and institutions which have been established since the end of World War II, leaving room, instead, to a more complex, fluctuating security setting we have experienced in the past few decades. Presently, the inter-state strategic competition fulfills the main objectives of national security policy of leading countries, particularly the United States' national security.

The present international order is undergoing a transition process driven by interactions between its main players; the United States, China and Russia, and to a lesser extent, the European Union. Other rising powerful countries undermining this order. If successful, they will eventually establish a multi-polar world order.¹ Russian president Vladimir Putin exploits both turning the utmost attention on the part of Trump's government in the United States to East Asia (Pivot to Asia Policy), as well as the European Union's economic and political disorder. The vacuum of power yielded by this policy of the United States in the East Med has encouraged Turkey and Iran to fortify their efforts to expand their influence in the East Med. In that sense, the agreement signed between Israel and the United Arab Emirates in September 2020 at the White House has driven a wedge in Iran's and Turkey's counter-proceedings. This trend of liberal global order alternation, which began even before 2020, was intensified due to the Corona pandemic, and the closure processes imposed upon the world by it, both in terms of people's movement and the movement of goods.

China is the main strategic competitor of the United States. It exploits its economic power to frighten its neighbors, as well as militarization of civil characteristics in the South China Sea. In recent years, China has begun to simultaneously "pull all the strings available to her". The conflict in the South China Sea has become a main source of international concern; its uncompromising conduct concerning Hong Kong's autonomy has accelerated. China has not been deterred by the wide media

1 Schultze, P. W. (Ed.) (2018). Multipolarity: The promise of disharmony. Frankfurt: Campus Verlag

coverage, either. The last military conflict with India left a few dozens of killed and injured soldiers of both parties. United States President Donald Trump and China's Deputy Prime Minister Li Hu signed an agreement at the White House in early January 2020. The agreement reduced some American customs on Chinese goods, in return to Chinese obligations to purchase more agricultural products from America, as well as energy products and industrial products, and to address complaints on the United States' part concerning intellectual property rights violation. However, phase 1 of the agreement has not been fulfilled (Beijing and Washington have not been able to expand the trade scope of goods indicated even prior to the Corona pandemic breakout). The analysts argue this state is continuous and will determine the scene further into the year 2020. The failure itself is not surprising, but its magnitude certainly is.²

Russia has proven to be a significant counterpart to the west, in the East Med in general, in Syria, and recently, particularly in Libya, fulfilling significant military and diplomatic roles in the region. Vladimir Putin possesses a sole, yet prominent vision, namely, to restore Russia's glory. In recent years, Russia has violated the boundaries of neighboring countries, vetoing their decisions of economic and diplomatic nature, as well as those related to defense. However, Russia's willingness to politically join forces with China, against the United States has recently raised some doubts. China's support of Belarus governor Alexander Lukashenko in recent years, through his attempt to maintain independence from Putin's Russia, who insisted on a more profound political and economic collaboration between Minsk and Moscow; as well as the Chinese attempt to impose on Russia the prices of fuel, a significant part of which is purchased from Russia (over thirty per cents), and considering the fuel export constitutes more than sixteen per cents of the Russian GNP – may lead Putin to consider *moderating his proceeding to seek a close connection with China in the years to come*.³ An evidence thereof is apparent through the Russian navy's prominent involvement in the bilateral exercise held early in September 2020 at the Bay of Bengal, as part of an exercise which has been held by the Indian Navy (China's strategic rival) every two years, since 2003, titled INDRA.⁴

2 Reuters Staff, What's in the U. S.- China Phase 1 trade deal, *Reuters Business News*, January 15, 2020. <https://www.reuters.com/article/us-usa-trade-china-details-factbox-idUSKBN1ZE2IF>

3 Stanislaw Skarzynski and Daniel Wongls, Putin's Russia Seeking a New Balance Between China and the West? *The Diplomat*, August 28, 2020. <https://thediplomat.com/2020/08/is-putin-russia-seeking-a-new-balance-between-china-and-the-west>

4 Abhijnan Rej, Indian and Russian Fleets Begin Exercise in the Bay of Bengal, *The Diplomat*, September 04, 2020. <http://thediplomat.com/2020/09/indian-and-russian-fleets-begin-exercise-in-the-bay-of-bengal>

The European Union: Prior to the Corona pandemic breakout, the European Union, newly led by Ursula von der Leyen, the European Commission president, planned to implement a more assertive approach in the Union's relationships with China and the United States. The new approach manifested itself by intensifying technological regulation, a stricter enforcement or implementation of trade and customs rules, and even by intensifying military collaboration between the countries remaining within the European zone. As the Corona virus arrived in Europe, the latter altered its core orientation; rather than fighting against the United States and China in the geopolitical domain, the Union is now focusing upon the struggle against the Corona pandemic.

The East Med has been characterized in the past year by rising in the degree of tension between Turkey, striving, in correspondence to the 'Blue Homeland Policy' (Mavi Vatan), to expand its scope of influence, and its domination over the East Med, and Greece and Cyprus.⁵ That is manifested through the signing of an internationally controversial agreement, dividing the economic water between herself and the Libyan regime in Tripoli, beginning gas search in the areas between Cyprus and Rhodes, relying upon navy forces, and challenging Greece, its main rival at this context. An ad-hoc coalition of countries, including Greece, Israel, Egypt and Cyprus was established, resisting this activity on Turkey's part. This coalition has avoided carrying out a military confrontation against Turkey, in spite of its opposition toward its activity. Rather, they merely performed joint naval exercises.⁶

The Persian Gulf and Gulf of Oman Area constituted a sphere of collision between Iran and the United States, Britain and the gulf countries in spring 2019. The event involved damage to tankers carrying petroleum. Both parties were on the verge of an extensive, direct conflict. The United States moderated the tension in the area by temporary ban of direct military response, but set out to dissuade Iran from carrying out its nuclear plan by announcing new sanctions. Apparently, in spite of the rhetoric, neither the United States nor Iran is interested in a true military confrontation. As of summer 2020, both the United States and Iran were struggling against Corona virus breakouts. Hence both parties are less likely to be driven into taking military actions against one another.

5 Ami Ayalon and Shaul Chorev, the 'East Med' is the crucible for the region's problems, *The Jerusalem Post*, August 24, 2020. <http://euro-sd.com/2020/03/allgemein/16506/military-cooperation-between-israel-greece-and-cyprus>

6 Military Cooperation between Israel, Greece and Cyprus, *European Security & Defense*, March 10, 2020. <https://euro-sd.com/2020/03/allgemein/16506/military-cooperation-/between-israel-greece-and-cyprus>

The International Relationships and the United Nations' Standing The Corona pandemic negatively affected the international relations between many countries, intensifying and causing an escalation of diplomatic controversies, resulting in a wide diplomatic tension. Although the United Nations Security Council made a decision entailing a global truce, the matter has not seemed to be supported by the council members, in the practical sense. The diplomatic relations have been significantly affected by the tension related to trade and shipping of medications, diagnostic tests and hospital supplies for the purpose of coping with the Corona virus disease. Leaders of several countries accused other countries for not curbing the disease effectively, causing an uncontrollable spread of the virus. Other accusations came from developing countries in Latin America and Africa, stating they were not able to find a sufficient quantity of materials for testing Corona disease, one reason being that other European countries and the United States were wasting the supplies in discussion.⁷

The Security Environment has become all the more complicated because of rapid technological changes occurring global, challenges posed by rivals of all various spheres of action, including the space and cybernetic spheres (The Cybers), as well as computerization and artificial intelligence technologies. For example, based upon media reports, Iran attacked Israel's water infrastructure, and Israel, in turn, responded on 9th May, 2020 by a Cyber attack against infrastructures at the Iranian port of Bandar Abbas.⁸ Those challenges within the security environment are becoming even more complex at surroundings where the mass media fulfills an important roles, responding within a short time to events taking place anywhere in the world. This progress of communication technology and general accessibility of other technologies empower so-called non-state players, who will exponentially expand their ability to influence people and events, both within the state and global.⁹

Immigration and Urbanization Phenomena displayed by some populations add more burden for the countries of destination for the immigrants, as well as a crisis in their civil society. The latter may induce an increased escalation and the development of nationalist regimes in liberal-democratic states. The Syrian civil war has radically changed the Middle East area, resulting in a humanitarian disaster encompassing

7 Bradley, Jane, In Scramble for Coronavirus Supplies, Rich Countries Push Poor Aside, The New York Times, April 9, 2020. <https://www.nytimes.com/2020/04/09/world/coronavirus-equipment-rich-poor.html>

8 El Jazeera, Israel cyberattack caused 'total disarray' at Iran port: Report, May 19, 2020. <https://www.aljazeera.com/news/2020/05/israel-cyberattack-caused-total-disarray-iran-port-report=200519163117789.html>

9 National Intelligence Strategy, of the United States of America 2019. Pp. 4–5. <https://assets.documentcloud.org/documents/5691327/National-Intelligence-Strategy-2019.pdf>

more than half a million dead, and millions of refugees who fled to Turkey, Lebanon, Jordan and Europe, inducing the conditions for the above mentioned occurrences. The immigration to Europe has occurred mainly through the sea, both from Syria (through Turkey) and North Africa, mostly through Libya. Areas where the economic scarcity is harsh, lack of various civil services (water, electricity etc.), climate changes, breakout of infectious diseases, or multi-national crime organizations may be conducive for development of instability isles or Failed States.

The growing number of "defective" democracies global arouses the concern of liberal democracy's decline of power. Thomas Ambrosio portrays and explains the burnout of democracy's legitimacy. Russia's rise to power under Putin's rule, and China's, under Xi Jinping's rule signifies a change in the international system's normative structure. Democracy is no longer the dominant paradigm. The authoritarian regimes possess consistently growing Soft and Sharp power¹⁰ to exercise. The rise of right-winged, populist, is also a complementary factor to the dissatisfaction with democracy and the increasing desire of authoritarian government models.¹¹

In the **global economy** field, the trend addressed in previous report has continued, namely, a gradual transformation at the Center of Gravity in the geopolitical, economic and geo-strategic fields from the *west toward Eastern Asia*. A new research by McKenzie & Company presents the GDP transition speed toward Eastern Asia. As of 2019, Eastern Asia holds a growing share of trade, capital people, knowledge, transportation, culture and resources. Out of eight global boundary-crossing flow types, only waste flows in the opposite direction, reflecting the decision made by China and the other Asian countries to reduce waste importation from developed countries. Presently, Asia constitutes approximately one-third of world trade in terms of merchandises, compared to a quarter ten years ago. Approximately at the same time, some of the international passengers movement through civilian flight increase from 33% to 40%, and its part within the capital flow raised from 13% to 23%, a change resulting from the increasing importance of this area, being highly significant for global economy's development. If this trend continues, by 2040,

10 Sharp power is the use of manipulative diplomatic policies by one country to influence and undermine the political system of a target country.

11 Ambrosio, T. (2018). Authoritarian norms in a changing international system. *Politics and Governance*, 6(2), 120–123.

Eastern Asia countries are likely to produce more than fifty per cents of the world GDP, consuming nearly 40% of world's consumption.¹²

World growth is expected to decline by 4.9% in 2020, 1.9 percentage points below the global economy forecast, as of April 2020. The Corona pandemic's negative effect was greater than expected on activity during the first half of 2020. The recovery therefrom is expected to be more gradual than predicted in previous forecasts.¹³

The Coronavirus Pandemic

In 2020, the above reviewed transformations and challenges were further intensified by Corona pandemic, which has taken millions of lives all over the world. A few political science researchers are questioning whether the pandemic may be considered an Inflection Point in the international relations field. Some argue that economic and medical evolutions have reduced the geopolitical influence of pandemics in past centuries. They state that examining the way in which the new Corona virus has affected the division of power and interest during the first half of 2020 indicates that the Corona virus' effect on global politics will not be a transformative one.¹⁴ Other researchers, on the other hand, indicate that United Nations' Security Council's reluctance to "take charge" of the Corona pandemic, being a so-called "global event", arousing the concern that the escalating crisis may resort to international conflicts. The WHO (World Health Organization), which was supposed to be the "global projector", managing the crisis, has not received any support on the United States' part, which has ceased fiscally supporting the organization even before the crisis broke out. If the Corona crisis continues, it may cause the escalation of economic, social and even political tensions, which may lead more countries to follow the United States, namely, cease their fiscal support of the World Health Organization. Under such a scenario, the United Nations shall remain with limited resources on hand, restricting its ability to undertake the responsibilities entailed by a "global projector", as well as to maintain the steps already taken by the organization in various areas global. Sadly, ceasing fiscal support of such parties

12 McKenzie & Company, the future of Asia: Asian flows and networks are defining the next phase of Globalization, September 18, 2019. <https://www.mckinsey.com/feature-insights/asai-pacific/the-future-of-asian-flows-and-networks-are-defining-the-next-phase-of-globalization#> [Accessed September 20, 2020].

13 WORLD ECONOMIC UPDATE, June 2020.

14 Daniel W. Drezner, The Song Remains the Same: International Relations After CORONAVIRUS, *International Organization* 74, Supplement 2020, The IO Foundation, 2020, 1–18. <http://www.cambridge.org/core/journals/international-organization/article/song-remains-the-same-international-relations-after-covid19/C0FAED193AEBF0B09C5ECA551D174525>

during the Corona pandemic times may serve as a dangerous precedent in global diplomacy and international relations. The same applies not only for the health sectors, but also on other related sectors. At this context, it is noteworthy that aside from the Corona pandemic, the world is still subject to other severe, harsh threats, such as climate changes and hunger. The World Food Program has indicated that by the end of this year, consequently to the Corona virus emergence, the number of individuals facing acute hunger will have doubled, its rate reaching to more than 265 million individuals. Such a regression may also cause improvements that have been already attained in recent years, to dissipate completely.¹⁵ The latter applies particularly to the Paris agreement.

Prior to the pandemic breakout, the volume and value of maritime trade shipping the global supply of food, energy and raw materials, as well as finished products and industrial components constituted more than 108.9 trillion ton/km² per year. The latter maritime trade encompassed more than 80% of the global trade's volume, and 60%-70% of the global trade's value. Two million seamen operated the global merchant navy, which rendered maritime transportation essential for the thriving of sustainable development.¹⁶ However, as indicated by the early response to CORONAVIRUS pandemic spread moderation, the actions taken by countries, including travel restriction and border closure, negatively affected the global connectivity as far as all transportation sectors were concerned (continental, maritime and aerial), which, in turn, resulted in disruptions of supply chains and global trade flow (See Figure 2).

Consequently, the availability and supply of essential products, such as food or medications became more complicated, impairing countries' ability to respond to the pandemic and recover therefrom. The seamen community itself, too, suffered the inability to be assigned to ships and get off, mainly due to movement limitations imposed by certain countries, and restricting passenger flights, rendering seamen Corona crisis victims. Tens of thousands of the latter failed to get off the ships on which they had served very long time periods, nor join ships and replace existing

15 Zaheer Allam, Oil, Health Equipment, and Trade: Revisiting Political Economy and International Relations During the CORONAVIRUS Pandemic, *Surveying the Coronavirus Pandemic, and its Implications*.

16 IMO, Coronavirus (CORONAVIRUS) – Joint Statement on the contribution of international trade and supply chains to a sustainable socio-economic recovery in CORONAVIRUS times, Circular Letter No.4204/Add.31 17 September 2020. <http://www.imo.org/en/MediaCentre/HotTopics/Documents/COVID%20CL%204204%20adds/Circular%20Letter%20No.4204-Add.31%20Coronavirus-%20Joint%20Statement%20On%20The%20Contribution%20fInternational%20Trade.pdf>

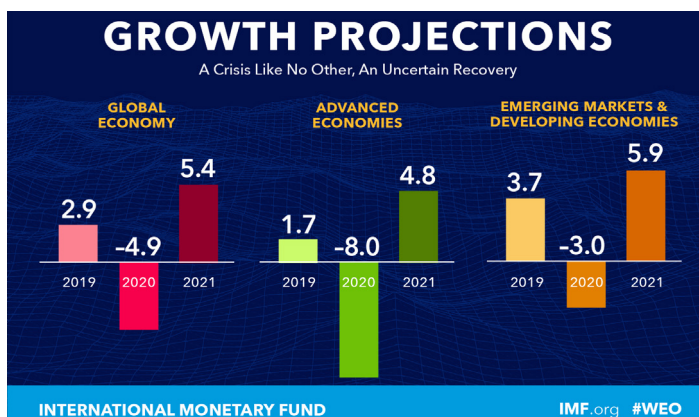


FIGURE 1: Economy Growth Projections, as of June 2020

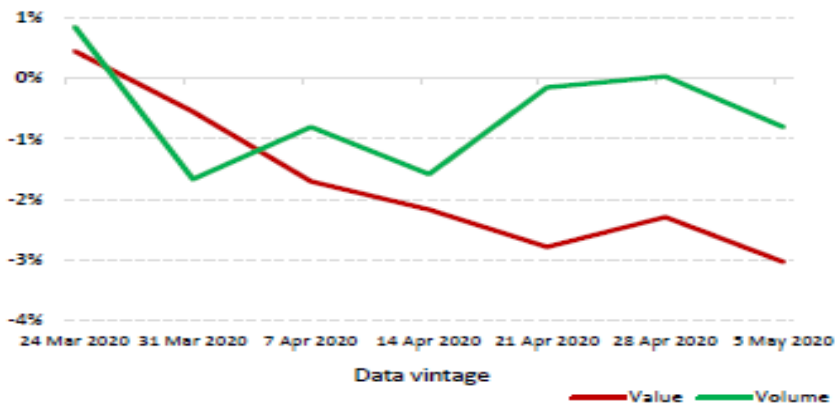
TABLE 1: An Updated Global Economic Growth Forecast (Annual GDP Changes, in Percentage)

(real GDP, annual percent change)	PROJECTIONS		
	2019	2020	2021
World Output	2.9	-4.9	5.4
Advanced Economies	1.7	-8.0	4.8
United States	2.3	-8.0	4.5
Euro Area	1.3	-10.2	6.0
Germany	0.6	-7.8	5.4
France	1.5	-12.5	7.3
Italy	0.3	-12.8	6.3
Spain	2.0	-12.8	6.3
Japan	0.7	-5.8	2.4
United Kingdom	1.4	-10.2	6.3
Canada	1.7	-8.4	4.9
Other Advanced Economies	1.7	-4.8	4.2
Emerging Markets and Developing Economies	3.7	-3.0	5.9
Emerging and Developing Asia	5.5	-0.8	7.4
China	6.1	1.0	8.2
India	4.2	-4.5	6.0
ASEAN-5	4.9	-2.0	6.2
Emerging and Developing Europe	2.1	-5.8	4.3
Russia	1.3	-6.6	4.1
Latin America and the Caribbean	0.1	-9.4	3.7
Brazil	1.1	-9.1	3.6
Mexico	-0.3	-10.5	3.3
Middle East and Central Asia	1.0	-4.7	3.3
Saudi Arabia	0.3	-6.8	3.1
Sub-Saharan Africa	3.1	-3.2	3.4
Nigeria	2.2	-5.4	2.6
South Africa	0.2	-8.0	3.5
Low-Income Developing Countries	5.2	-1.0	5.2

Source: IMF, *World Economic Outlook Update*, June 2020

Note: For India, data and forecasts are presented on a fiscal year basis, with FY2020/2021 starting in April 2020. India's growth is -4.9 percent in 2020 based on the calendar year.

teams. As of August 2020, it was estimated that more than 300,000 seamen had been required to board or get off merchant ships. The global merchandise trade declined by 17.7% in May 2020, compared to the same month in 2019. The decline within the first five months of this year was widespread, yet affected export from the United States, Japan and European Union particularly. The economic shrink in China was smaller than the global average, since the latter successfully controlled the pandemic breakout, and was relatively swift in re-opening its economy.



Source: UNCTAD calculations

Figure 2: Decline in Trade Scope and Its Fiscal Value Consequently from CORONAVIRUS Pandemic

The CORONAVIRUS pandemic has not passed over *combat fleets*, either, even if some of the effects have remained uncovered, or hidden from the wide public. The media case which has reverberated most due to its command-related implications involved the Theodore Roosevelt aircraft carrier in March 2020, during an operational sailing. The crew members who were infected with CORONAVIRUS were evacuated, and the ship was called for anchorage at Bay Guam (an island under American patronage in the western Pacific Ocean). The captain, Colonel Brett Crozier, was interested in evacuating most of the ship crew, in order to prevent the pandemic spread, but his supervisors were deterred by the idea. A few days later, the colonel sent an e-mail message to three of his superior officers, and to the remaining seven navy captains, outlining a massive ship evacuation plan, since the virus may have not been tolerated on board. The letter was leaked to the press. On the next day, the fleet instructed to take off most of the crew to shore. Thomas Modly, Deputy United State Navy Secretary, suspended ship captain from its position. Modly's actions were controversial, and his later speech addressing the crew on board Theodore Roosevelt was publicly criticized. Consequently, Modly resigned from his position a

few days later. By mid-April, hundreds of crew members, including Crozier himself tested positive for CORONAVIRUS. One of them passed away. The Committee of Inquiry appointed by the United States Fleet to investigate the event submitted its conclusions on 19th of June, stating the Crozier's decisions in relation to handling the pandemic were erroneous, recommending not to return him to aircraft carrier commanding position.¹⁷

The United States Navy, which was involved in the struggle against the Coronavirus made its hospital ships USNS Comfort and USNS Mercy available to New York City and Los Angeles, respectively. Mercy left Los Angeles port on 15th of May, after having treated only seventy seven patients, who were not infected with Coronavirus. Meanwhile, Comfort return to its home port, namely, Norfolk, Virginia two weeks earlier, having treated 182 patients n New York City. The missions in both cities, and the few patients treated aboard both ships raised again questions concerning the future of those two veteran ships, which are not designated to be replaced by new ships according to the United States Navy Force Construction Plan.¹⁸

The pandemic affected other fleets' activity as well. For instance, the Royal British Navy postponed the sailing of HMS Queen Elizabeth for training, which was scheduled for early September, because several crew members tested positive for Coronavirus.¹⁹

Global Maritime Trade: Key Trends

More than eight per cents of the global trade by volume, and more than seventy per cents of its fiscal values are shipped by sea. Being handled at the different sea ports around the world, the contribution and importance of maritime transportation for global trade and its development, are impossible to overstate. The Seamanship and sea ports constitute the spearhead of globalization, which, in recent decades, have brought about prosperity to consumers and suppliers both in developed and developing countries. Acknowledging the strategic role fulfilled by this sector,

17 Schmitt, Eric; Gibbons-Neff, Thomas (19 June 2020). "Navy Inquiry Faults Two Top Officers Aboard Roosevelt for Handling of Virus", *The New York Times*. <http://www.nytimes.com/2020/06/us/politics/carrier-roosevelt-coronavirus-crozier.html>

18 Gidget Fuentes, Beyond Mercy: Navy's COVID-19 Hospital Ship Missions and the Future of Medicine at Sea, USNI News, May 25, 2020. <http://news.usni.org/2020/05/25/beyond-mercy-navys-covid-19-hospital-ship-missions-and-the-future-of-medicine-at-sea>

19 The HMS Queen Elizabeth has postponed sailing from Portsmouth after crew members tested positive for COVID-19, *BBC News*, September 7, 2020. <https://www.bbc.com/news/uk-england-hampshire-54064886>

all structures addressing sustainable development put emphasis on this sector, perceiving it as a driving force for growth and sustainable development.

Economic growth is clearly linked to the increase in maritime trade. Researches addressing the matter indicated that a one-percent of global economic growth expanded trade scopes by 2.5 per cents.²⁰

While the global trade had already slowed time by the Corona pandemic breakout, the economic and social disruptions resulting from the pandemic caused a dramatic decline in trade (Figure 3). The value of international trade in terms of merchandises declined by approximately five per cents in the first quarter of 2020, and is expected to decline further, by 27 per cents in the second quarter of 2020.²¹ Figure 4 hereunder presents the substantial decline in the first and second quarters of 2020.

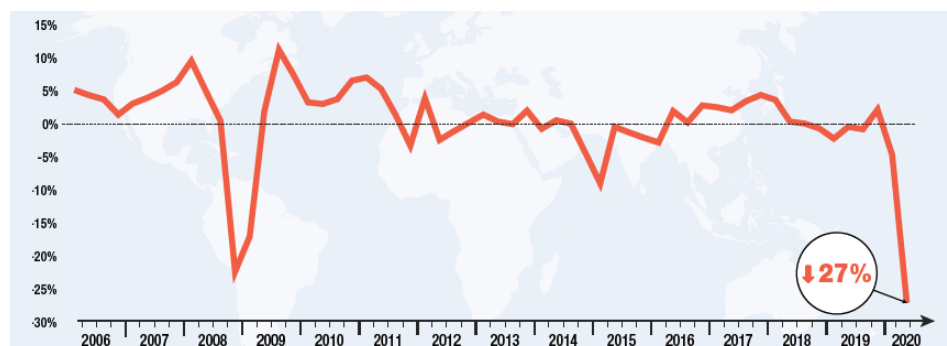


Figure 3: Trade Contraction due to Coronavirus vs. the 2008-9 Economic Crisis

A statistical research conducted in several large economies further emphasizes the dismal situation of international trade. Firstly, the up-to-date trade data indicate further decline in April and May. Secondly, except the first two months of 2020, the data pertaining to *China* indicate that the latter was more successful than other large economies, demonstrated the growth in China's export by three per cents in April 2020. Nonetheless, the other data pertaining to China indicate that such a recovery might be short-term, since import and export declined by approximately eight per cents in May 2020. Additionally, the intra-regional trade seems to have declined by

20 Cristina Constantinescu, Aaditya Mattoo, and Michele Ruta, The Global Trade Slowdown: Cyclical or Structural? IMF Working Paper. 2015 International Monetary Fund, January 2015
<https://www.imf.org/external/pubs/ft/wp/2015/wp1506.pdf>

21 Global Trade Trends and short-term forecast, Trade contraction from COVID-19 deeper than the financial crisis, *UNCTAD*, June 20, 2020, P. 2
https://unctad.org/en/PublicationsLibrary/ditcmisc2020d2_en.pdf

a significantly lower rate as far as Eastern Asian countries and the Pacific area are concerned. In the European Union, the intra-regional trade declined at a rate similar to that of the general trade. However, the statistical data pertaining to the United States indicate a much substantial decline in intra-regional trade

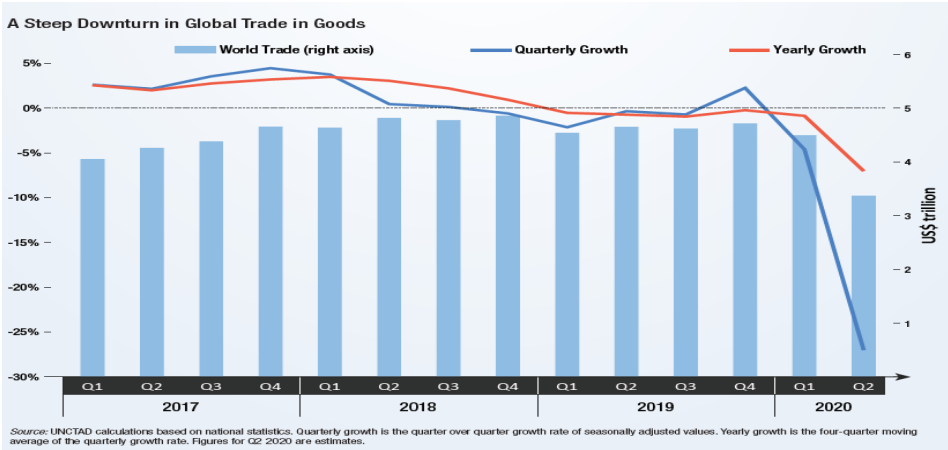


Figure 4: The Substantial Decline in Merchandise Global Trade in the First and Second Quarters of 2020

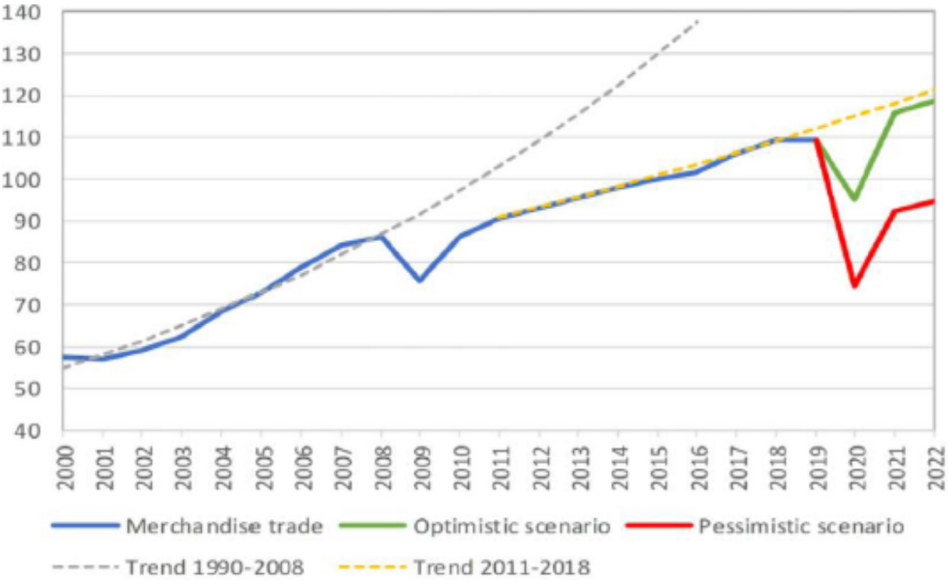


Figure 5: World Trade Volume Declined, Compared to the 2000 Trend (World Merchandise Trade Volume, 2000-2022. Source: WTO)

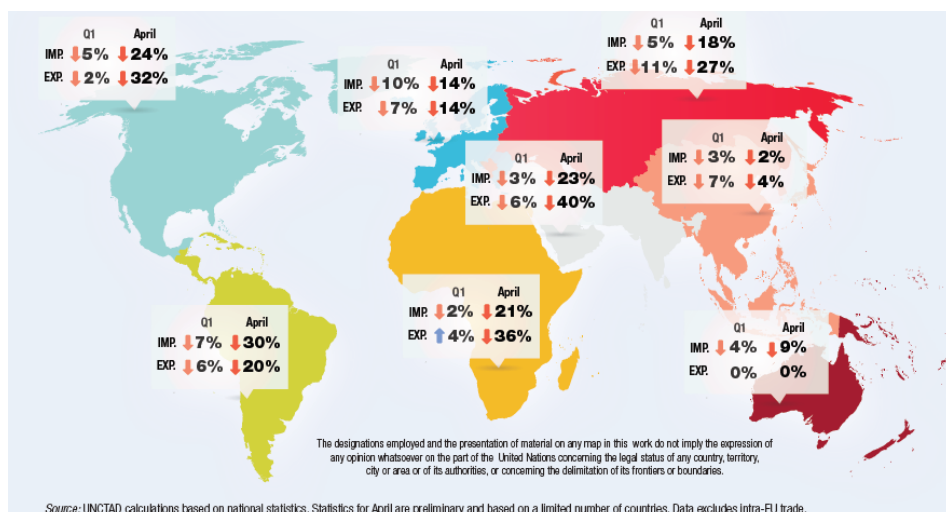
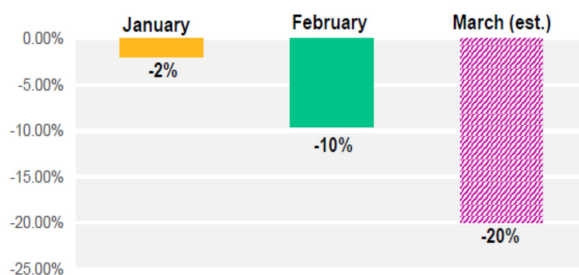


Figure 6: World Trade Decline by Areas



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Figure 7: Change in Container Shipping Volume, 2020

The demand for petroleum and tanker fleet condition: As of late 2019, the worldwide petroleum tanker fleet was of approximately 568 Dead Weight Tons capacity. Despite the increase in manufacturing relying upon alternative energy sources, the fossil fuel is still the main energy source. The completion of new tanker construction, coming from Chinese shipyards will be slightly lower than the previous forecasts. Petroleum product tankers' shipping rates will be negatively affected by the essentially low demand. Nevertheless, the Baltic and International Maritime Council (BIMCO) predicts that the average shipping rate per year will be higher than Breakdown Levels.²²

22 Peter Sand, Shipping in a time of coronavirus, *Windward*, March 19, 2020 <https://wnwd.com/insights/shipping-in-a-time-of-coronavirus>

The termination of collaboration between OPEC (The Organization of the Petroleum Exporting Countries) resulted in a dramatic increase of the exportation of fuel from Saudi Arabia. However, the Coronavirus pandemic drastically decreased the global petroleum demand. The forecast states that the global consumption will be reduced within the annual calculation pertaining to 2020, compared to the previous year. The vehicle fuel demand declines, particularly as far as jet fuel is concerned, due to civil volume reduction of civil flights and economic activity during Coronavirus pandemic times.

Relying upon the fuel tankers as a reservoir for surplus supply during Coronavirus pandemic times: The imposing of lockdowns during Coronavirus pandemic times, so as to slow the spread of the disease has lowered the global demand of various fuel types by 30 million barrels a day, worsening supply surplus, while the land fuel storage capacity had neared the possible maximum by April 2020. Consequently, fuel manufacturers began using Super Tankers as an alternative means storing their crude oil stock. Such super tankers, possessing the capacity to store approximately two million petroleum barrels, charged a storage fee of more than five dollars per barrel a month, five times higher than the previous year's fee. By late April 2020, the quantity of stored at sea had reached 140-160 million barrels.²³

China's Surplus Trade substantially expanded to 58.93 billion dollars in August 2020, compared to 34.72 billion dollars in the same month of the previous year, and far beyond the market forecast of 505 billion dollars (See Figure 8). The export increased by 9.5 per cents, the most rapid rate since last March, while import surprisingly declined by 2.1 per cents. The surplus trade with the United States in the country escalated to 34.24 billion dollars in August 2020, compared to 32.46 billion dollars in July.²⁴

In the global shipping area, the three leading *Flags of Registration* happen to belong to economies that are not key ship owners, such as Panama, Marshall Islands and Liberia. Hong Kong and Singapore follow, placing fourth and fifth, respectively.

Nearly a half of the global tonnage is owned by Asian companies, followed by European and North American owners. China owns the highest rate of ships, yet the Greek and Japanese merchant fleets possess a greater tonnage.

23 Oil tankers fill up as coronavirus crushes crude demand, Hellenic Shipping News Worldwide, April 30, 2020. <https://www.hellenicshippingnews.com/oil-tankers-fill-up-as-coronavirus-crushes-crude-demand>

24 China Balance of Trade, Tradingeconomics <https://tradingeconomics.com/china/balance-of-trade> [Accessed October 3, 2020]

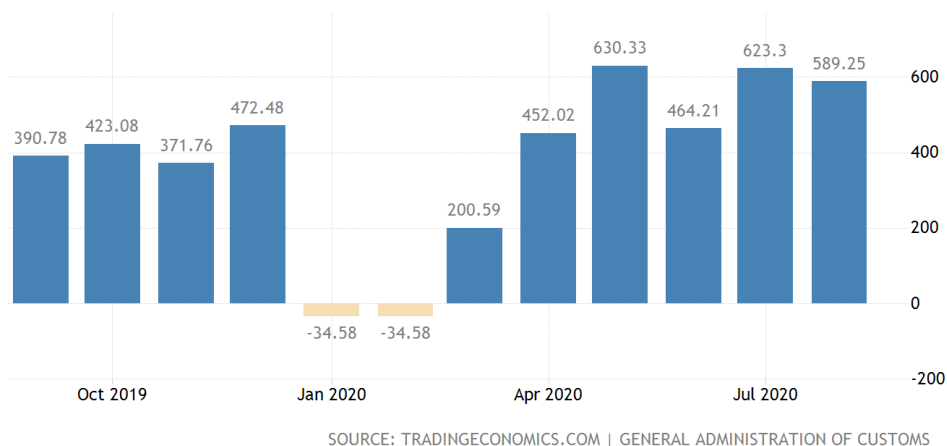


Figure 8: China's Surplus Trade October 2019-July 2020

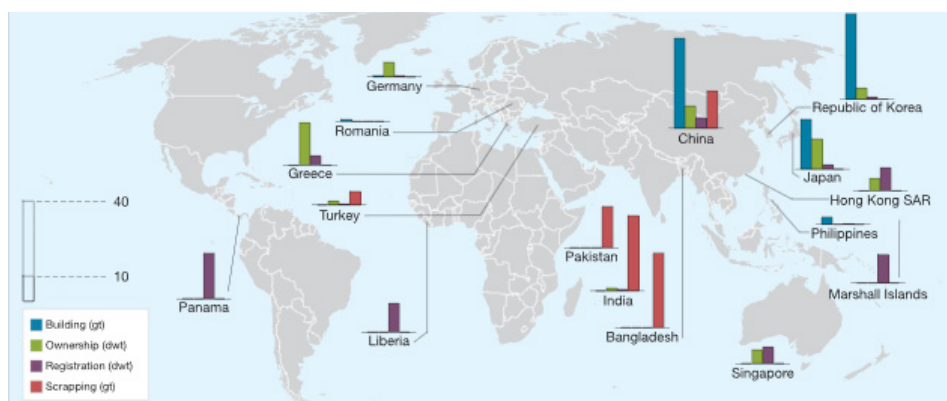


Figure 9: Vessel Building, Vessel Ownership, Vessel Registration and Scrapping by Geographic Area²⁵

New Sailing Passages

In recent years, the desire to deal with the problems related to the presently existing Choke Points has manifested itself by pretentious plans for digging new canals and expanding presently existing canals worldwide. More than two years ago, the expansion of Suez Canal came to a successful completion. Two pretentious digging enterprises remained on the agenda; Nicaragua Canal in Central America and Kra Canal at the center of Thailand. Generally, it may be stated that those two enterprises

25 Sources: UNCTADstat (UNCTAD, 2018a), Clarksons Research. <http://stats.unctad.org/handbook/MaritimeTransport/MerchantFleet.html> [Accessed October 3, 2020]

have not progressed. Apparently, the execution thereof in the near future is not on the agenda.

Kra Canal: Despite the agreement signed between China and Thailand in 2016, concerning a long-term construction project of the Kra Canal, otherwise known as the "Thai Canal", no significant progress has been made on this project. The canal is supposed to cross the Kra area, in the southern part of Thailand, providing a new sailing passage shortening the sailing time from the east to Europe, by bypassing Malacca Straits. In September 2020, the Thai government seemed to look into a continental transportation alternative to the proposed canal, thereby also annulling China's hopes for a strategic alternative to Malacca Strait. Now, Thailand also investigating the establishment of two deep sea ports, as well as a continental connection (a train and a road) between them. If and when this plan materializes, as far as ordinary merchandises will shorten by two to three days the duration of merchandises arrival from East Asia to Bengal Bay, as stated by the Thai Minister of Transportation Saksiam Chidchob.²⁶

A matter worth investigation is the establishment of continental logistic corridors, one of which, being applicable for the Middle East, is addressed in an article within this assessment.

The Passages in the Arctic Oceans

In the past year, and consequently to the expeditious iceberg defrost trend, the use of the Transpolar Passage as from the second half of the century (2050) has come on the agenda (Figure 10). The greatest extent of interest is shown precisely by the Chinese government, who views the passage as an alternative route to its target markets.

The disappearance of the Arctic sea ice, even for one summer, as indicated by the document assessing the Marine Arctic shipping, will cause "the disappearance of perennial sea ice in the middle of the Arctic Ocean".²⁷

Such a scenario bears substantial implications on planning, construction and operational standards of all future Arctic marine activity. In the absence, of hard,

26 Thailand Takes a Step Back from Kra Canal Proposal, The maritime Executive, September 21, 2020. <https://www.maritime-executive.com/article/thailand-takes-a-step-back-from-kra-canal-proposal>

27 Arctic Council, Arctic Marine Shipping Assessment 2009 Report, Arctic Council Norwegian Chairmanship 2006-2009, P. 34. https://www.pame.is/images/03_Projects/AMSA/AMSA_2009_report/AMSA_2009_Report_2nd_print.pdf

perennial ice, any water refrozen will take the form of seasonal ice, which will be much thinner and possible to pass through. In other words, no nuclear-powered icebreakers will be necessary (with which Russia is presently equipped). In the following decades, in the summertime, there may be a passage through the Arctic Ocean in a regular ship, even if the insurance company and polar code still require icebreaker ships.



Figure 10: The Transpolar Passage – Icebergs' Condition as of Mid-Century (2050)

While most of the world does not approach the climate changes surrounding us with the proper severity, China is the only country preparing for the matter. The world's greatest nation follows the rapid global warming with great interest. Even if humanity ceased emitting all greenhouse gasses, those which had already been emitted into the atmosphere would cause long-years warming effects. Since the world apparently is not doing enough to limit our greenhouse gasses emission, a warmer world is awaiting us, where the arctic ice cover might disappear in the summertime by 2050, or even earlier.

In its arctic policy, published in January 2018, China refers to the Trans-Arctic route as "The Main Passage". China does not address the phenomenon in a dramatic tone, yet in the same matter-of-factly tone typical of the Chinese policy documents: "... the arctic shipping passages include the northeastern passage, the northwestern passage and the main passage". The Chinese Arctic policy also mentions the polar Silk Road, which is often viewed as a synonym to the northern Via Maris. Let it be borne in mind, however, that this policy indicates that China strives to established a

polar silk road, by collaboration with other interested parties, through arctic shipping passages development".²⁸

A report issued for the American Congress, updated in September 2020, indicates that the American fleet has issued a series of strategy documents and route maps in recent years, addressing geopolitical and geostrategic aspects in the Arctic area.²⁹ The last one is a strategic forecast published in January 2019, stating the American Navy shall protect the United States from an attack, maintaining the nation's strategy and its influence in the Arctic area. The marine forces shall act to deter any type of aggression and maintain peace in the area. As for the crises which might break out in the area, the strategy states crises are to be resolved under conditions accepted by the United States, its allies and partners.

The following strategic objectives were assigned for the American Navy in the strategy document published in 2019:

- Protect the American sovereignty and nation from attack.
- Guarantee continued stability and conflict avoidance in the Arctic area.
- Maintain freedom of navigation and navigation
- Promote partnerships of intra-American parties, as well as partnerships with allies and partners to attain the above objectives.

Aside from the thorough reviews given in the Congress' report on the matter, there appears to be no clear policy on the United States' part also converted into the means to be developed through building up the American force for the decades to follow. Also, United States does not seem to acknowledge the area as a potential inter-power struggle area.

As for the environmental influences of sailing through those routes, there is some concern that the ships sailing in the area, continuing the use of the heavy fuel type labeled mazut, will worsen the situation due to emission effects of detrimental nitrogen and sulfur oxides, as well as black carbon particles, which remain longer in a marine environment. Antarctica prohibits the use of heavy fuel, yet this prohibition has not yet been enacted by the International Marine Organization (IMO) in the Arctic area.³⁰

28 Mia Bennett, The Arctic Shipping Route No One's Talking About, *The Maritime Executive*, August 5, 2019. <https://www.maritime-executive.com/editorials/the-arctic-shipping-route-no-one-s-talking-about>

29 Changes in the Arctic: Background and Issues for Congress, Updated September 10, 2020, pp. 127–128. <https://gas.org/sgp/crs/misc/R41153.pdf>

30 *The Northeast Passage and Northern Sea Route* by Willy Østrem

Exclusive Maritime Borders – Contribution and Issues Under Conflict

In relation to the Delimitation of the Maritime Borders between neighboring countries, there is still an ample number of inter-state controversies concerning the exclusive maritime area borders, as well as controversies associated with fishing rights in those areas. The prominent conflict pertaining to the matter, which has by now become an inter-power conflict is taking place in China Southern Sea. The up-to-date review of this conflict's status appears in an article by Dr. Benny Ben Ari, within this report's framework.

In the East Mediterranean area, the following three unresolved crucial controversies have still remained:

1. Northern Cyprus' filed prosecution by Turkey for part of the maritime borders surrounding Cyprus.
2. Turkey's demand from Cyprus and Greece for part of Cyprus' and Greece's exclusive maritime borders (see a chapter in this review outlining Turkey's blue homeland policy). The main conflict between Turkey and Greece is related to the question whether settled islands are entitled to maritime borders. The 1982 maritime convention supports the Greek argument, but full acceptance of Greek demands is rather problematic from the Turkish viewpoint, as its shore in the Mediterranean is long (approximately 1800 kilometers), but a rather limited maritime border area.
3. The Israel-Lebanon Conflict concerning the delimitation of maritime border between both states. In correspondence to the policy document published by HMS on the matter, and the renewed mediation efforts by the American Deputy Minister of Foreign Affairs, Middle East, HMS published several position papers on the matter.³¹ The large-scale explosion at the Beirut port on the 4th of August this year, too, made the Lebanese capital vibrate with shock. The explosion, in which hundreds of people were killed, and thousands were injured left more than three hundred thousand people homeless, took place in Lebanon which by then had already collapsed economically, struggling against the Corona pandemic breakout, as well as against the greatest than ever trust gap between the citizens and the states. Apparently, governmental negligence caused the explosion of thousands of kilograms of a volatile chemical, which had been improperly stored at the port for years. If Israel seeks routes to assist the Lebanese nation after the

31 See Benny Shpanier's research titled Paths of Peace: Inquiring the Conflict of Israel-Lebanon Maritime Border Conflict from the Maritime Law Viewpoint, Heikin Geostrategy Cathedral and the Haifa University Maritime Policy and Strategy Research Center, July 2019 <https://ch-strategy.hevra.haifa.ac.il/index.php/studies-and-publications/books>

disaster it experienced, this is indeed an important route, which, if successful, will facilitate Lebanese search under water, which may even result in revealing a natural gas field, that might be of assistance to Lebanon in the following years. Even if Israel is obliged to compromise, there is an opportunity not to be missed.³² This activity does not mar Israel's interest in economic zone regulation. Israel must hold the bull by the horn, namely grab the opportunity to have an attentive mediator for Israel on the one hand, and a window of opportunities in Lebanon on the other hand, and thereby transform a reality which has lasted many years. Another energy rig in the Mediterranean Sea will probably serve both Israel and Lebanon well.³³

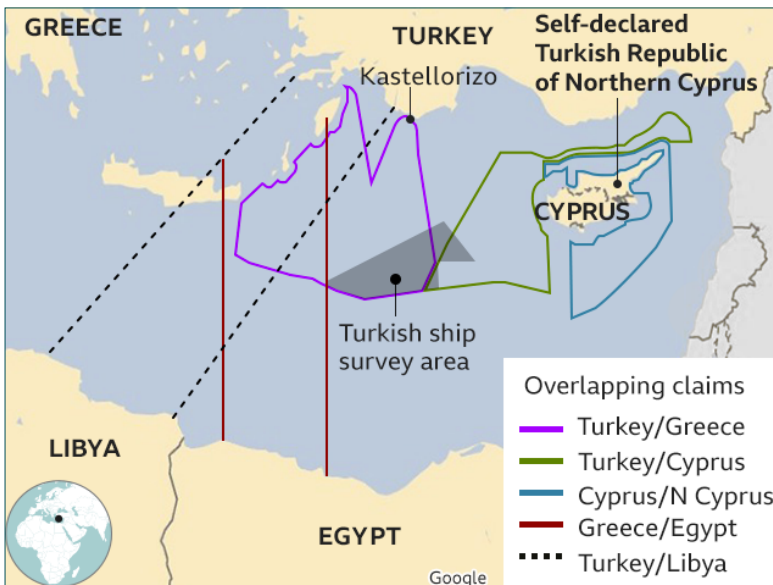


Figure 11: Areas of Conflict at the East Mediterranean, Including the Gas Search Field.

Source: BBC

In October 2020, the spokesperson of Israeli Ministry of Energy published the following message:

Minister Steinitz confirms: Israel and Lebanon shall engage in direct contact with American mediation concerning the economic zone between them ... At a conference which took

32 Shaul Chorev and Benny Shpanier, A Propitious Time Not to be Missed, *Yisrael Hayom*, 14 September 2020. https://www.israelhayom.co.il/writer_articles?tid=134014

33 Pazit Rabina, Experts: Israel May Reach an Agreement with Lebanon Concerning the Marine Border, *Makor Rishon*, 21 September 2020. <https://www.makorishon.co.il/international/266647>

place about two weeks ago, headed by the Minister of Energy and his senior officers, also involving parties from the offices of the Prime Minister, and Ministries of Law and Defense, Israel's negotiation terms were established. The breakthrough between both countries was documented briefly afterward, during the recent visit of the David Schenker, Assistant Secretary to American Foreign Affairs Minister.³⁴

The above mentioned conflicts were further augmented recently by several one-way actions related to the delimitation of East Mediterranean states' economic zones"

1. **The Turkish-Libyan Agreement** which was signed on 27th November 2019, in which Turkey signed with the Libyan Government of National Accord, headed by Faiz Al-Saraj. The agreement outlined an Exclusive Economic Zone (EEZ) between the governments. The delimitation zone is to block the Eastern part of the Mediterranean Sea at a marine segment divided between those two countries. The agreement aroused extensive protest and many international declarations, mostly by Greece, Egypt and Cyprus, which are damaged by the Turkish-Libyan memorandum, whether directly or indirectly. The Turkish move may transform the rule of play within the East Mediterranean marine area, and will, in fact, do so. The move in question is of geostrategic significance in general, and particularly as far as Israel is concerned, and deserves attention.³⁵ As for Israel, being considered an "island state", where more than 99% of the trade is maritime (import and export in terms of weight), this is an unreasonable scenario. The fact that the context for the breakout of two of Israel's wars (Operation "Kadesh" and the "Six Days War") was the question concerning the right for freedom of navigation Tiran Straits and Suez Canal, is not to be overlooked. Thus, for instance, the merchant vessel "Bat Galim" was stopped by the Egyptians at Suez Canal in 1954, ignoring the Convention of Constantinople, which had guaranteed free sailing through the route concerned. The State of Israel should realize the new situation that has formed, view the Turkish move a crucial strategic threat and consider prospective ways of action.
2. **The Palestinian Authority's Declaration of its own economic zone:** Prior the United Nation's General Assembly conference in fall 2019, the Palestinian Authority published its marine zone across from Gaza Strip. The publication

34 Minister Steinitz Confirms: Israel and Lebanon Shall Engage in Direct Contact with American Mediation Concerning the Marine Borders between them, The Ministry of Energy, A Spokesmanship Message, 1 October 2020.
https://www.gov.il/he/departments/news/press_0212020

35 For further discussion, see an article by Chorev Shaul and Benny Shpanier, titled This is the Way in Which Turkey Might Block the Mediterranean Sea for Israel, Ynet, 23 December 2019.
<https://www.ynet.co.il/articles/0,7340,L-5647292,00.html>

included an outline of the territorial waters, the nearby waters and the exclusive economic zone within 200 marine miles (Figure 12). The publication, signed by the Palestinian Authority's Minister of Foreign Affairs, arranged as commonly acceptable within such declarations, the Authority's rights within each zone. It also includes a long list of the exact border points at sea, as well as the zone's map. Apparently, this publication caught both Egypt and Israel off guard. The Egyptians responded with a message to the United Nations' secretariat on 31st December 2019, where they rejected Palestinian Authority's demand, reasoning that the territories declared are under Egyptian control, according to the Convention on the Law of the Sea. The Egyptians further argued that based upon the maritime law, the zone which the Palestinian Authority claims belongs to the Egyptians, a fact ignored by the publication. Furthermore, part of the area in question has already been divided between Egypt and Cyprus, through an official agreement, as acceptable by the international law. Since the Egyptians are a party with the Convention of the Law of the Sea, as are the Palestinians, the former argue that this is the law in force, and should, therefore be implemented.

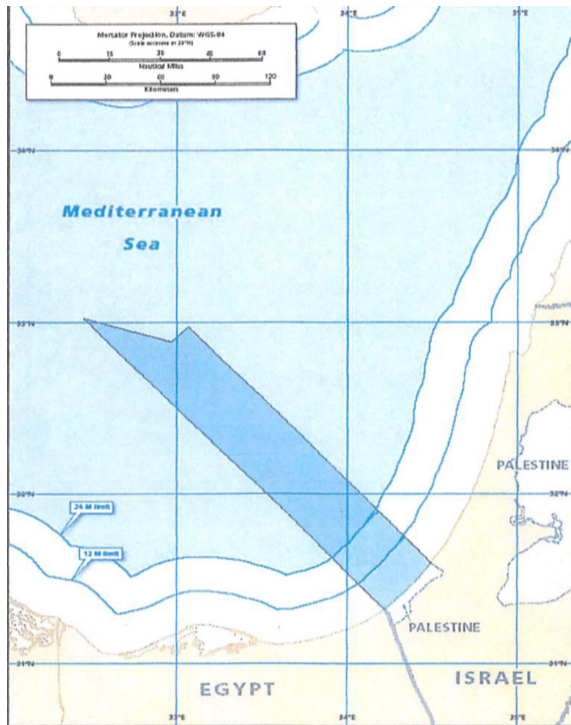


Figure 12: The Palestinian Authority's Declaration of its Economic Waters Zone, September 2019

The response of Israel, which is not a party within the Convention on Law of Sea, as opposed to Egypt and the Palestinian Authority, was delayed by nearly four months, on 14 January 2020. Israel's arguments focus upon the Authority's having no power on hand to declare those zones, since it is not a recognized state entity, according to international law. From the practical viewpoint, this declaration is of no significance, because Israel is the actual dominator of all the waters facing its coasts, including the marine zone facing the Gaza Strip. Hence, in spite of the legal right for which the Palestinian Authority claims, it possesses no practical ability to fulfill the claimed authority.

While Egypt is addressing the issue within the international law's framework, raising legal arguments stating the Convention on the Law of Sea does not permit the Palestinian Authority's move, Israel, which is not a party to the Convention on the Law of Sea, may only raise claims related to lack of power on the Palestinian Authority's part to make the very move. In other words, in this conflict, as well as in other matters perhaps the Israeli and Palestinians do not speak the same language, hence the prospect of resolving the conflict is low.

3. **The Greece-Egypt Agreement:** The Greece-Egypt marine border delimitation, signed on 6th August, constitutes a direct counter-reaction on both states' part, to the marine border delimitation agreement between Turkey and the Libyan Government of National Accord, signed on 27th November 2019.

Marine Piracy and Terror

Marine piracy and terror pose a significant threat to sailing safety, human life and life welfare. Additionally, they may damage the inter-state relationship in terms of exit bases located within a given state's territory. Even while writing this report, marine piracy may well be distinguished from marine terrors in terms of attack's nature, attack methods and the means employed, as well as the areas where marine terror acts and marine piracy occur. Although at present there is resemblance between the action methods of both (damaging vessels, marine luggage theft and hostage taking), their goals are different; terrorist actions are underlain by ideological motives, hence they require publication so as to exert psychological pressure on governments and publics, while piracy uses possessions it has captures and hostages for profit purposes only.

Figure 13 hereunder presents all security events occurring in the Arabian Sea, Horn of Africa, Gulf of Oman and the Red Sea, divided into the following sections; terror events, vessel hijacking, mining etc.³⁶ In contrast, in its report of the first quarter

36 Lydelle Joubert, State of Maritime Piracy 2019, Accessing the Human Cost, *Stable Seas*, July 10, 2020. <https://stableseas.org/publications/state-piracy-2019>

of 2019 the International Maritime Bureau of the Trade Office (IMB) reveals fewer *piracy and armed robbery* events against vessels, compared to the first three months of 2019. In the first quarter of 2019, IMB reported of 38 piracy and armed robbery at sea events, a decline of 28 events, compared to the first quarter of 2018. The report indicates that 27 stowaway episodes occurred; seven vessels experienced shooting episodes, and four cases of attempts to go aboard a vessel and take over were identified. For the first time since the first quarter of 1994, no hijacking of vessel had been reported. The Gulf of Guinea represented a high rate of piracy attacks and armed robbery at sea, with 22 incidents reported during the first quarter of 2019. This is the same area where all global crew kidnapping occurred, of 21 crew members in five different incidents.³⁷

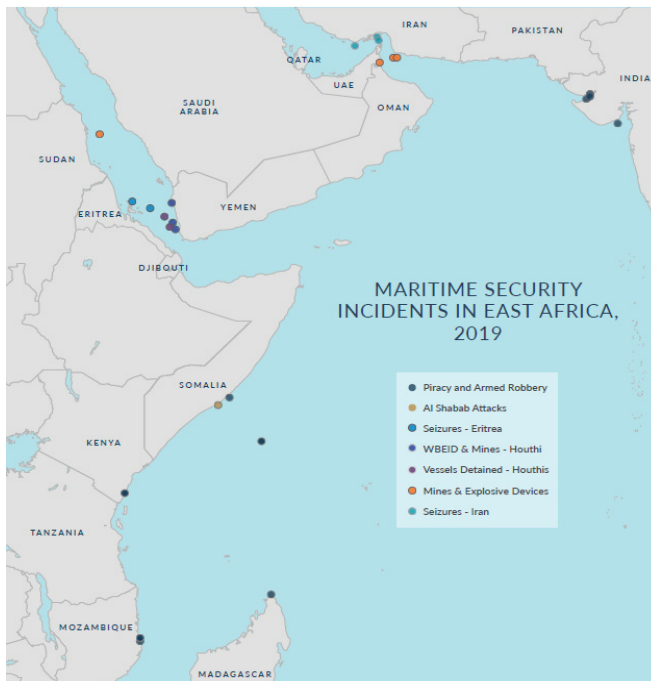


Figure 13: Marine Security Episodes in the Arabian Sea, Horn of Africa, Red Sea and Gulf of Oman in 2019

IMB manager Michael Howlett views combat fleet patrols, security means on board, collaboration, information exchange and information transparency are the key

37 Maritime piracy incidents down in Q1 2019 but kidnapping risk in Gulf of Guinea persists, ICC Commercial Crime Services. <https://iccwbo.org/media-wall/news-speeches/maritime-piracy-incidents-q1-2019-kidnapping-risk-gulf-guinea-persists/> [Accessed September 28, 2020]

factors which facilitate the coping with piracy and armed robbery crimes. However, Howlett adds, "the threat on the crew is still real, whether by violent packs or armed, opportunistic thieves who face the crew".³⁸



Figure 14: All incidents of piracy and armed robbery against vessels in the first quarter of 2019³⁹



Figure 15: Piracy and armed robbery incidents in the first quarter of 2019 – by attack types



Figure 16: Piracy and terror in the first quarter of 2019 – by types of violence toward crew

Because of the extensive activity occurring at the Gulf of Aden and Horn of Africa, initiated by a force acting on behalf of the United Nations, or an independent activity of fleets as the Chinese or the Indian fleets, the data is reassuring. Nonetheless, one case is reported where a Yemenite fishing boat titled "Al-Azham" was hijacked. It served as the mother vessel in that attack on fishing boats on Somalia coasts in April 2019. The joint force acting under the protection of the United Nations (EU NAVFOR) managed to intercept the hijacked fishing boat, arrested the pirates and released the hostages aboard. The hijacking called attention to the fact that the piracy threat outside Somalia had not been wiped out, but merely suppressed.

As for the *economic implications* of piracy and armed robbery, no new data were published in 2018. The 2017 data (Figure 17) suggest an overall economic cost of 1.4 billion dollars, out of which the cost of marine security employment is 292 million

38 ibid

39 IOC – Commercial Crime Service. <https://icc-ccs.org/index/php/1259-imb-piracy-report-2018-attacks-multiply-in-the-gulf-of-guinea>

dollars, and the cost of international forces activity engaging in the matter is 199 million dollars (a decline from 228.3 million dollars cost in the previous year).



Figure 17: The economic cost of piracy and armed robbery in 2017⁴⁰

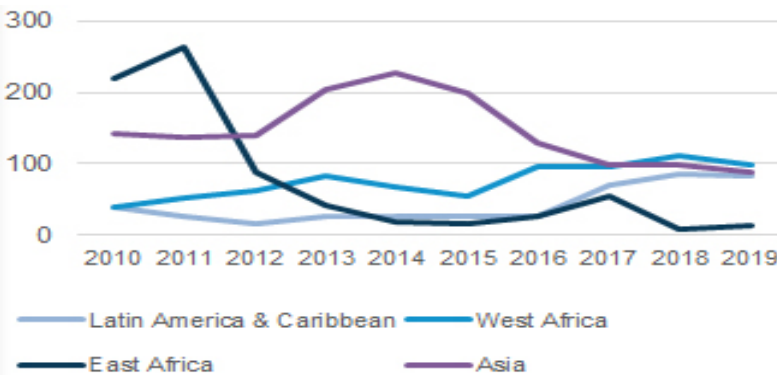


Figure 18: Number of piracy and armed robbery acts on vessels in 2019 by areas⁴¹

Maritime Terrorism

Although there is no consensual definition for terror, one of the common definitions is *"the employment or methodical threat to employ acts of violence by an individual or a group so as to induce fear and to terrorize civil population in order to attain political aspirations or goals"*.⁴²

The years 2018 and 2019 signified a decline in marine terrorism threats by organizations as Al-Qaeda, which was, among other things responsible for damaging the American battleship USS Cole in the Gulf of Aden in 2000.

40 The State of Maritime Piracy 2017, The Assessing of Economic and Human Cost, Ocean Beyond Piracy, Reducing Violence at Sea

41 <https://www.oneearthfuture.org/news/maritime-piracy-report-constantly-evolving-threat>

42 Senia Febrica, *Maritime Security and Indonesia: Cooperation, Interests, and Strategies*, Oxon, Routledge, 1st edition: 2017, p.26

At the time, Iran managed to expand its influence in Yemen, strengthening the Houthi movement as a threat on the state's local stability, as well as on the sailing routes near Yemen coasts. Iran was extensively assisted by the Houthis, who served as proxies, a position which allowed the former not to assume direct responsibility for the organization's terroristic activity. In the 2019 report, we covered some of the Houthi activities in the Red Sea, including damaging Saudi vessels, both battleships and civil vessels.⁴³

Iran has threatened since the moment of revealing its nuclear plan to damage the petroleum transportation from the Persian Gulf in case of attack on its nuclear facilities, or later on, when the United States withdraws, in 2018, from the nuclear agreement, by imposing further sanctions on Iran. The reason for the "tanker war" breakout in May 2019 in the Persian Gulf was, as remembered, the arrest of the Iranian tanker "Stena Impero" in Gibraltar by the British, while it was transporting petroleum to Syria, disobeying the European Union sanctions.

Since the Iranian attacks, American strike forces have occasionally conducted operations for the sake of *freedom of navigation assurance in the Straits of Hormuz and Gulf of Oman*. As of September 2020, a task force consisting of the USS Nimitz (CVN-68) conducted an operational patrol and a passage through the Strait of Hormuz (Transit Passage). The force which operated under the command of the fifth fleet, also included the guided missiles battle cruiser USS Princeton, and the guided missiles battleship USS Sterett, which, additionally to the passage through the Strait of Hormuz also conducted marine drills with regional partners. The Strait of Hormuz passage draws the American vessels to the Iranian area and the threats on the part of the IRGCN navy. The force's activity relied upon the port facilities of the fifth fleet, located in Bahrain.⁴⁴

In the time periods in-between operations of a task force passage through the Straits of Hormuz, the American navy has maintained regular presence outside the Persian Gulf, the Northern Arabian Sea and the Gulf of Oman since May 2019, when the aircraft Lincoln was called to the region, so as to facilitate a quick American response against Iran.

43 Maritime Terrorism: A Rising Threat from Al-Qaeda and Iranian Proxies, *European Eye on Radicalization*, May 14, 2019. <https://eeradicalization.com/maritime-terrorism-a-rising-threat-from-al-qaeda-and-iranian-proxies-2>

44 Sam LaGrone, USS Nimitz Now Operating in the Persian Gulf, USNI, September 18, 2020. <https://news.usni.org/2020/09/18/uss-nimitz-now-operating-in-the-persian-gulf>

The purpose underlying Iran's attack of tankers or establish such a threat, is to induce security-related tension in the Persian Gulf and near (the western part of the Indian Ocean), which is geared at raising the transportation costs for key petroleum consumer and to exert international pressure on the United States.

Out of concern lest maritime terror's leaking to the Horn of Africa and Bab-Al-Mandav Strait, the Inter-Governmental Standing Committee on Shipping requested the vessels of the European Union fleet expand their activity to the Horn of Africa, so as to cope with all types of maritime crime in the Indian Ocean, including terrorism, drug smuggling and human trafficking.⁴⁵

To sum up, the maritime terrorism has evolved its nature and become a weapon in the hands of Iran as part of its policy against the United States and other western countries, including against various regimes in the region, as Yemen's and Saudi Arabia's regime. The scope of this terrorism depends upon the progress toward problem resolution in the political aspect, or, alternatively, to its worsening. The military solution may facilitate maintaining a low degree of terroristic activity, but not completely eliminate it.

Immigration through Marine Routes

Refugee immigration to Europe through the Mediterranean Sea is not a phenomenon new to this decade. It has taken lives of many thousands of refugees, in their attempt to cross the Mediterranean Sea and reach Europe. However, the refugee movement has substantially intensified in the past decade because of the *refugees of the civil wars in Syria, and African refugees coming from Sub-Sahara countries to Europe, through the coasts of Libya*.

Following the steps taken on the matter by the European Union countries, the flow of refugees arriving through marine routes appears to subside. Overall number of refugees who made their way to Europe in 2020 (as of September 2020) was 55529 people, while in 2019, the number of refugees was 123,663, and 141,472 in 2018. The refugees who arrived to Europe through marine routes by September 2020 (Greece, Italy, Spain, Cyprus and Malta) numbered 51'039, while 4,490 arrived through continental routes. Due to drowning or for another reason, 495 refugees died; in 2019 – 2,277 and 2,277 in 2018. It should be borne in mind that Turkey holds in its territory more than three million refugees of the Syrian civil wars, which

45 Operation ATALANTA flagship ESPS SANTA MARIA and JS OHNAMI met at sea to conduct a PASSEX in the Gulf of Aden, September 21, 2020. <https://eunavfor.eu/operation-atalanta-flagship-esps-santa-maria-and-js-ohnami-met-at-sea-to-conduct-a-passex-in-the-gulf-of-aden>

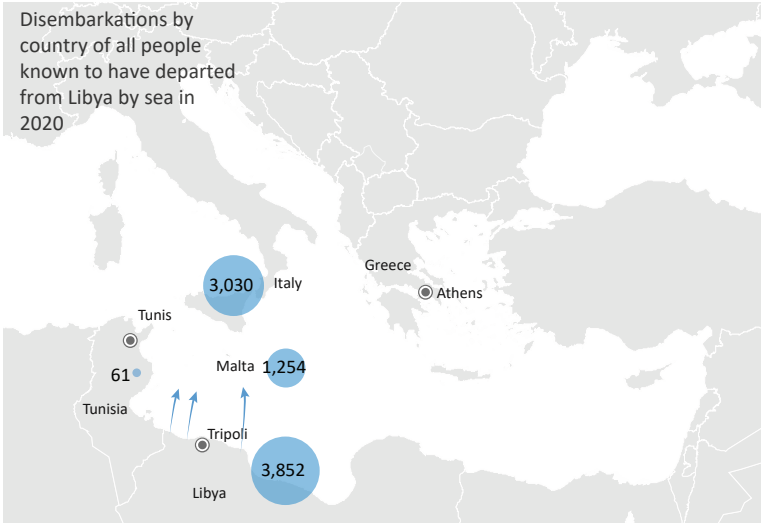
were suspected of intentions to continue their journey to Europe. In 2015, the European Union reached an agreement with Turkey in return to a three billion euros payment, and an obligation to renew the European Union membership proposal, in return to assistance in the prevention of refugee fleeing in an attempt to make their way to Europe. The deal, which was agreed in a special European Union summit in Brussels with Turkish prime minister Ahmet Davutoğlu, is a key part of the immigration crisis management.⁴⁶ However, in a criticism expressed against Turkish president in October 2019 regarding the entrance of his army to the Kurdish enclave in Syria, Turkish president Recep Tayyip Erdoğan threatened to reopen the routes to immigrants to Europe. That was not his first threat, and it was a response to the global criticism concerning his military operation in the northern part of Syria.⁴⁷ This incident implies the fragility of handling the refugee crisis and the cynical use thereof by politicians.

Upon the global recruitment to the struggle against the Coronavirus, many countries in Europe in outside have employed unusual means for their border control, restricting flights and continental movement in their border passages. UNHCR and United Nations' refugee agency called European countries to maintain compassionate work methods, and to multiply their efforts to strengthen the shelter systems in Europe during those rough times. The agency calls European countries to amplify coordination, solidarity and division of responsibility, viewing the movement of refugees and immigrants through the Mediterranean Sea, growing more intense. The refugee agency declared that in spite of the most difficult circumstances faced by many countries due to the Corona pandemic, the protection of life and basic human rights must remain the guiding star within their decision making, emphasizing that marine search and rescue are both a humanitarian duty and a duty dictated by the international law.⁴⁸

46 Leo Cendrowicz, Refugee crisis: EU pays €3bn to Turkey in exchange for help on dealing with European migration, *Independent*, November 29, 2015. <https://www.independent.co.uk/news/world/europe/refugee-crisis-eu-pays-3bn-to-turkey-in-exchange-for-help-on-dealing-with-european-migration-a6753861.html> [Accessed October 5, 2020]

47 Erdogan threatens to flood Europe with 3.6 million refugees if EU calls Syria operation an 'invasion', *Wn.Co*, October 10, 2019. https://article.worldnews.com/view/2019/10/10/Erdogan_threatens_to_flood_Europe_with_36_million_refugees_i

48 News comment on search and rescue in the Central Mediterranean by Gillian Triggs, Assistant High Commissioner for Protection at UNHCR, the UN Refugee Agency, *the UN Refugee Agency*, 1 May 2020. <https://www.unhcr.org/news/press/2020/5eac53214/news-comment-search-rescue-central-mediterranean-gillian-triggs-assistant.html>



Includes Serbia and Kosovo (S/RES/1244 [1999]). The boundaries and names shown, and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Figure 19: The number of refugees who left Libya on their way to Europe through marine passages in the first quarter of 2020⁴⁹

Departures from Libya by sea since 2017 (January to May 2020)

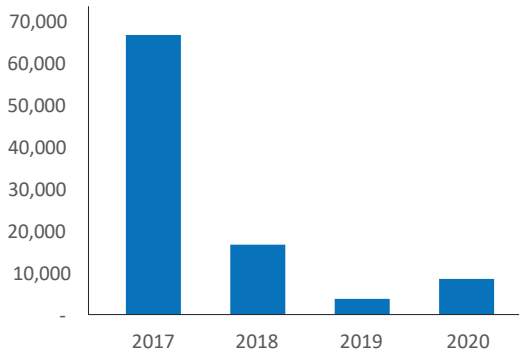


Figure 20: The number of refugees leaving the coasts of Libya through marine passages in 2017-2020⁵⁰

The UNHCR recommended that as for the refugees who managed to leave the coasts of Libya through sea enhancing search and rescue capacity at the central

49 UNHCR, Arrivals to Europe from Libya – May 2020, Regional Bureau for Europe. <https://data2.unhcr.org/en/documents/details/77525> [Accessed September 28, 2020]

50 ibid

Mediterranean, because of the multitude of drowning cases, imploring the patrol forces not to send the captured persons to Libya, which is not a safe place for alighting passengers to the coast.⁵¹ There is doubt as for the responsiveness of the marine forces operating in the region to accept this recommendation.

In light of this situation, the European Union considers the idea of establishing immigrant absorption and screening centers in North Africa, attempting to deter people from going on life-endangering journeys to Europe, through the Mediterranean.

It is important to remember that ceasing the flow of refugees from Libya to the southern Europe countries became apparent after Italy began training the coast guard force of the Libyan Government of National Accord in 2017, and finance its activity. Those forces are train to intercept refugees and stop them even prior to going onto sea, or near the Libyan coasts. In late July, the killing of three youngster was document, after they were intercepted at sea by the Libyan coast guard, whose operation is financed by the European Union. This incident shed light on the fate of ten thousands of immigrants and shelter seekers who returned to Libya to cope with arrest, abuse and torture by the smugglers. The are part of more than 6,200 men, women and children who were intercepted at the central Mediterranean and returned to Libya in 2020. Since 2017, the number of migrants and refugees is around 40,000, and perhaps even more.⁵²

Warfare within the Cybernetic Sphere

The importance of warfare within the cybernetic sphere (both defense and offense) is growing and becoming more intense over time. This is manifested by the development of relevant technological capacities by the various states, and a more frequent employment f those capacities. The maritime sphere and the operation conducted therein are sensitive to this type of warfare, since it is global, border-crossing and demands a high degree of connectivity. Cyber security events occurring within marine infrastructures, such as sea ports of international significance may affect many, broad sectors in the marine trade and transportation activity.

The Iranian port cyber attack in May 2020, which was attributed to Israel by the "Washington Post", and Iran's difficulty to swiftly recover from this attack,

51 ibid

52 Mat Nashed, what happens to forcibly returned to Libya? The Humanitarian, August 5, 2020. <https://thenewhumanitarian.org/news-feature/2020/08/05/missing-migrants-Libya-forced-returns-Mediterranean>

demonstrate the significance of highly severe damage within the cybernetic sphere through an activity which does not lead the parties to a broad military conflict, but causes the victim severe damages.⁵³

Viewing the matter's importance, the Center for Maritime Policy and Strategy published on its home page two articles on the matter; an article by Itay Sela and Ido Ben Moshe, titled "Cyber Threats on the Port Front" and an article by Ofir Kafri and Dr. Carmela Lutmer, titled "International Collaborations in Cyber Security within the Marine Sphere".

53 Washington Post: Israel linked to cyberattack on Iranian port, Reuters, Tuesday, May 19, 2020. <https://www.chinadailyasia.com/article/130959>

Key Naval Fleets – Trends and Changes

Shaul Chorev

The following is a review of the changes and trends within the world's largest war fleets, compared to the previous report from 2019, focusing upon arenas of action, operation strategy and force establishment plan of each. The review of each fleet will devote a mission-related for its activity within the East Mediterranean, a region constituting the main focus of the Maritime Policy and Strategy Research Center (HMS).

The United States Fleet

Prior to reviewing the trends and changes within the world's largest, strongest fleet, it is necessary to address the United States' political and security-related objectives, as phrased by the Secretary of Defense Dr. Mark T. Esper.

The United States' Political-Security-related Objectives: Dr. Mark T. Esper, the 27th Secretary of Defense of the United States published the ten emphases he views within the American Ministry of Defense's activity, including, among other things, the following objectives; re-inquiry and approval of all force establishment plans and the operational response against China and Russia; obtaining a higher degree of sustainable preparedness; development of a customized plan for enhancing allies and establishment of partnerships; focusing upon China as the United States' rival; modernization of the force and expanding investment in game-changing technologies; determining joint war games, drills and joint train plans with United States' allies.¹

In August 2019, the Americans established SPACECOM (The American Space Command), and in December that year, the U.S. Space Force which is, in fact the new combat command, and the first new force of the United States Army since 1947. Their goals are to maintain the freedom of use, trade and navigation in space. Those goals express the acknowledgement of the growing importance of space as a new warfare sphere. In March 2020, a communication satellite was launched as the American Space Force's first national security mission. The United States placed thousands of American soldiers in Saudi Arabia in summer 2019, so as to calm the Saudi people following Iran's attack on their petroleum facilities in September 2019. Simultaneously, the United States reduced its military forces in Afghanistan to 8,600 soldiers, attempting to promote a political solution between the Taliban and the existing government.

1 US Department of Defense, Implementing the National Defense Strategy: A Year of Successes, July 2020. <https://media.defense.gov/2020/Jul/17/2002459291/-1/-1/1/NDS-FIRST-YEAR-ACCOMPLISHMENTS-FINAL.pdf> [Accessed September 20, 2020].

The European Command (EUCOM) attempted a change by placing more than 9,500 American soldiers who were placed on German grounds, by expanding deployment of United States forces to Europe for drills and training. Those actions indicate president Trump's policy for reducing American presence on European grounds, minimizing the budget-related obligation deriving from this presence.

The United States resumed its obligation to maintain freedom of sailing through Freedom of Navigation Operations in conflict areas, including the Persian Gulf, Gulf of Oman and the South China Sea. As all may recall, an international force consisting of several state was established in September 2019, in order to deter threats on the global trade in the Gulf of Arabia and Gulf of Oman by Iranian marine provocations. It is important to bear in mind that Iran does not acknowledge the Transit Passage in any part of its territorial waters or through the Strait of Hormuz, casting restriction on Innocent Passage in the area as well, one motive being to oppose the United States.²

Ending North Korea's Nuclear Plan: A second summit meeting of Trump and Kim Jong Un, which took place in February 2019 in Vietnam, abruptly ended, yielding no deal.³ Nuclear arms manufacturing by North Korea continued in spite of the aggressive sanctions. A report by the United Nations' experts team, which has not yet been officially published indicates that Pyongyang has probably developed the ability to manufacture smaller nuclear apparels, which may fit its ballistic missiles, also intensifying its nuclear material manufacturing.⁴ Furthermore, North Korea continued engaging in ballistic missiles with submarine head launching experiments. An institute specifying in researches addressing North Korea's nuclear arms recently analyzed up-to-date satellite photographs of Sinpo shipyard, presenting the experiments raft, serving for underwater experiments of submarine arms development. According to the report, the raft's location at Sinpo shipyard "might signify an approaching underwater experiment, though such launching at a time of typhoon storms seems unlikely". It is estimated that a missile launched from the raft will be limited to a 185-310 mile range, which will not pose any direct threat on the continent of the United States.⁵

2 Farzin Nadimi, Clarifying Freedom of Navigation in the Gulf, The Washington Institute, PolicyWatch 3154, July 24, 2019. <https://bit.ly/3huMdyY>

3 North Korea nuclear summit ends abruptly with no deal, NCB News, February 28, 2019. <https://bit.ly/3rx6QPn>

4 Julia Masterson, UN Experts See North Korean Nuclear Gains, Arms Control Today, Arms Control Association, September 2020. <https://bit.ly/3mUHCan>

5 Hyung-Jin Kim, Seoul: North Korea may conduct underwater-launched missile test, *The Associated Press*, September 17, 2020. <https://bit.ly/38DwSlm>

The United States allocates the world's largest budget to its military forces. Consequently, the American fleet has still possessed the greatest power. The 2021 fleet budget is 207.1 billions of dollars, which reflects no substantial change, compared to the 2020 budget.

The Operational Response

Figure 1 presents, in a bird's eye, the operational response, based upon a planned order of forces consisting of 306 vessels, out of which 101 vessels in active field duty by the various worldwide operational arenas.

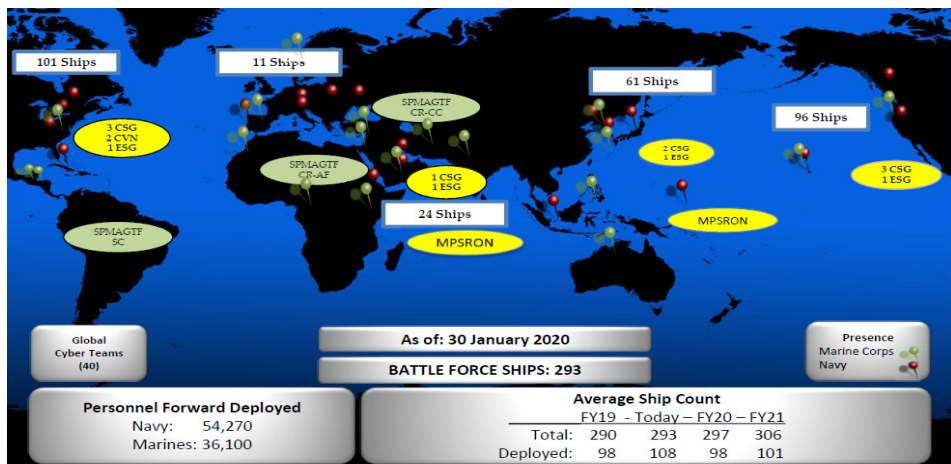


Figure 1: The United States Fleet Operational Response, 2021⁶

The emphasis for 2021 – All Domain Dominance:

- Prioritization, reinforcement and renewal of nuclear deterrence, so as to assure timely supply of next generation's submarines, Columbia model.
- Continued enhancement of military preparedness to provide the United States with a well-prepared, trained force.
- Lethal force supply, through a greater extent of investment in navy modernization and crucial technologies.
- Focusing upon enablers and dominance in all conflict spheres; sea, air, land, cyber, secure communication, awareness of combat arena within space and establishment of an integrated fire force.

6 Department of the Navy FY 2021 President's Budget. https://www.secnav.navy.mil/fmc/fmb/Documents/21pres/DON_Press_Brief.pdf [Accessed September 21, 2020].

- Prioritization of more "capable" platforms over less capable legacy platforms, rapidly responding to the changing threat.
- Adapting the response to the national defense strategy (NDS), geared at great power competition.

In the United States' navy's force establishment (Table 1), the number of new vessels entering the ordered force (8) is smaller than it was in previous years (12 in 2020 and 2019). Based upon this force establishment plan, apparently the navy will face difficulties while attempting to reach the goal it established in terms of vessels number (355). Plus, in order to withstand this objective, the navy will be required to include the unmanned vessels, which will be integrated into operational service within the following years. In the 2021 budget year, the navy plans on extending its vessels ordered force from 297 to 306, out of which, 101 will be operationally deployed.

Table 1: American Navy's Force Establishment Plan

Battle Force Ships (SCN)	FY20			
	FY19	PB20	Enacted	PB21
Columbia Class Submarine (SSBN 826)	AP	AP	AP	1
Ford Class Aircraft Carrier (CVN 78)	0	1	1	0
Virginia Class Submarine (SSN 774)	2	3	2	1
Arleigh Burke Class Destroyer (DDG 51)	3	3	3	2
Freedom/Independence Class Littoral Combat Ship (LCS 1/2)	3	0	0	0
Guided Missile Frigate (FFG (X))	0	1	1	1
America Class Amphibious Assault Ship (LHA 6)	AP	0	*	0
San Antonio Class Amphibious Transport Dock (LPD 17) (Flight II)	AP	AP	*	1
Lewis B. Puller Class Expeditionary Sea Base (ESB 3)	1	0	0	0
Spearhead Class Expeditionary Fast Transport (EPF 1)	1	0	1	0
John Lewis Class Fleet Replenishment Oiler (T-AO 205)	2	2	2	0
Navajo Class Towing, Salvage, and Rescue Ship (T-ATS 6)	1	2	2	2
New Construction Total	13	12	12	8

Table 2: Plan of Research, Development, Experiments and Operational Assessment for Unmanned Vessels

Unmanned (RDTE,N)	FY20			
	FY19	PB20	Enacted	PB21
Medium Unmanned Surface Vehicle	1	0	0	0
Large Unmanned Surface Vessel	0	2	2	2
Extra Large Unmanned Undersea Vehicle (XLUUV)	5	0	0	0
Unmanned Total	6	2	2	2

The Corona pandemic might also affect the pace of American order of battle. A report submitted to the Congress indicates that all American Navy's vessel construction plans, including those of the coast guard's may be affected by the Corona pandemic.

The report specifically indicates the Columbia SSBN (ballistic missile submarine, due to the plan's high priority (namely, navy's top priority). The plan's tight schedule for the planning and construction of the first submarine in the series implies the threat on the submarine's first operationality date, which is due in 2031. According to the report, any postponement in the initial operationality will bear severe ramification on United States' Strategic Nuclear Deterrence Posture.⁷

The Corona pandemic also resulted in American Navy's battleships' haul deployment records. According to American Navy's message to the press, the USS Stout deployed at sea 208 consecutive days, breaking San Jacinto patrol vessel's deployment haul time, as well as USS Dwight D. Eisenhower's haul time.⁸

The Navy's Operation in the East Mediterranean

Since President Obama's 2012 declaration of "Pivot to Asia Policy", the American Navy's operation in the East Mediterranean has considerably reduced. It is also noteworthy that since the United States decreased its dependence upon petroleum coming from the Middle East area, the area's geo-economic and geo-political significance has been substantially declined in the eyes of the United States. This is well demonstrated by the United States' lack of military-marine involvement in the tension between Turkey and Greece in summer 2020. United States did nothing but sending the logistic vessel USS Hershel Woody Williams, which arrived at the Gulf of Souda, Crete, an activity erroneously perceived by the media as a mission aimed at watching over the worsening tension between NATO ally members, Greece and Turkey, because of energy right in the East Mediterranean. The Sixth fleet spokesman rushed to amend the interpretation given, stating: "The vessel arrived to provide pre-planned logistic support, and on the 18th of August joined pre-planned trainings with regional forces."⁹ This declaration implies that the United States, through the Sixth Fleet, bears no pretensions to serve as an influential party within the events occurring in the East Mediterranean. In this sense, President Trump's policy is not different than that of his predecessor Obama. Rather, in some senses, its trend have even been intensified.

7 Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress, COVID-19, Impact on Shipbuilding Programs, September 17, 2020, pp. 26-27.

<https://crsreports.congress.gov/product/pdf/RL/RL32665>

8 Mallory Shelbourne, Destroyers USS Stout, USS Kidd Wrap Up Long-Haul Deployments, *USNI News*, September 29, 2020. <https://bit.ly/2KLx13V>

9 Megan Eckstein, USS Hershel 'Woody' Williams In Eastern Mediterranean for Training as Greece-Turkey Tensions Continue, *USNI News*, August 20, 2020. <https://bit.ly/37ypdeP>

The leaving commander of the United States marine forces in the Mediterranean Sea and North Africa, Admiral James Foggo, who terminated his position early in September 2020, made the following statement at an Internet conference: "The East Mediterranean has become one of the world's most kinetic regions", further stating: "We must come up with a new strategy which will facilitate our progress within this geo-strategic scene, which is becoming all the more complex".¹⁰ This is undoubtedly an accurate observation, but apparently will not influence the decision makers in Washington. For instance, the Sixth Fleet, which traditionally operated in the Mediterranean area, was assigned for new missions this year. In May 2020, for the first time since the 1980's, had operated at the Sea of Barents, west to the coast of Norway.¹¹

Although the United States does not employ the political dimension of the maritime strategy in the East Mediterranean (employing marine forces for political purposes), she does employ other political tools so as to maintain its standing as a super-power in the East Mediterranean. For example, the United States lifted for one year the embargo she cast on Cyprus in 1987, aimed at preventing an arming campaign, which will delay the United Nations' efforts toward merging Cyprus. As a matter of fact, the embargo was cast on the southern, Cypriot-Greek part of the island, the abode of the international government commonly recognized in Cyprus. So as not to upset the Turkish, Washington announced the lifting of the embargo for one year, with a renewal option, to allow Cyprus purchase non-lethal equipment. United States ambassador to Cyprus announced that the United States would continue encouraging the Cypriot governmental authorities to rebuke fueling services provided to the Russian navy in Cyprus, viewing the position inducing non-stability in the region.¹²

People Liberation Army Navy – PLAN (The Chinese Navy)

The growing importance of the Chinese marine interests, which have already been reported in the previous assessments, has caused the Chinese navy to keep on increasing the frequency of its operations, their duration and their distance from

10 Lenny Weston, Russia turning eastern Mediterranean into a militarized hot spot, Navy's Foggo says, Stars and Stripes, June 24, 2020.

11 Thomas Nilsen, U. S. Sixth Fleet enters the Barents Sea with missile defense destroyer, The Barents Observer, May 4, 2020. <https://thebarentsobserver.com/en-security/2020/05/us-sixth-fleet-enters-barents-sea>

12 Diego Cupolo, US officials say partial lift of Cyprus arms embargo not related to Turkish-Greek tensions, AI Monitor, September 2, 2020. <https://bit.ly/3hlg2lr>

China.¹³ This activity corresponds to the emphasis put on sea by the White Paper, the strategic document published by China in May 2015, titled "Defense at the Open Sea".¹⁴

In another document, published in July 2019, China presents the role of her armed forces as follows: "In defending important waters, islands and reefs within the eastern Sea of China, southern Sea of China and the Yellow Sea. The forces have acquired full situation awareness of the nearby waters, perform actions to defend common rights and law enforcement, properly handle marine and air situations and respond with resolution to security threats, violations and provocations at sea".¹⁵

As stated, China does not provide data related to its defense budget, including the Chinese navy empowerment budget (Table 5 whose origin is SPIRI Institute indicating a 261 billion dollars). As for maintaining China's interests overseas, the document indicates as follows:

Maintaining Chinese interests beyond its boundaries, constitutes an important part of China's national interests. One of the missions faced by China's armed forces is to efficiently defend the safety and legitimate rights and interests of Chinese citizens, as well as Chinese organizations and institutes overseas. For that purpose, China establishes marine forces, develops logistic facilities overseas and enhances its capability in performing various military tasks.¹⁶

The report for the American Congress from August 2020, titled China Naval Modernization: Implications for U.S. Navy Capabilities), addresses several topics related to the Chinese navy's gaining power and its operational strategy:¹⁷

- The effort has been going on over 25 years, since the beginning of the mid-1990's, turning the Chinese navy into a much more modern force, possessing new capabilities.

13 Ronald O'Rourke, China Naval Modernization: Implications for U. S. Navy Capabilities – Background and Issues for Congress, Congressional Research Service (CRS), August.

<https://fas.org/sgp/crs/row/RL33453.pdf>

14 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.

<https://www.refworld.org/docid/556c27634.html>

15 Andrew S. Erickson, Full Text of 2019 Defense White Paper: "China's National Defense in the New Era" (English & Chinese Versions), The State Council Information Office of the People's Republic of China, First Edition 2019, July 2019 July 24, 2019. <https://bit.ly/2KXk6fF>

16 Ibid.

17 China Naval Modernization: Implications for U. S. Navy Capabilities – Background and Issues for Congress Updated, October 2, 2019, Congressional Research Service. <https://crsreports.congress.gov/product/pdf/RL/RL33153/227>.

- The navy has conducted a growing number of operations in farther waters, including wider water regions of the western Pacific Ocean, the Indian Ocean and nearby waters, on the way to Europe. The Chinese navy is undoubtedly the largest of all Asian countries' navies. Plus, in recent years, the number of its battleship exceeds that of the American navy's.
- Several American observers express concern with the vessel construction rate at the Chinese navy, particularly with the construction of larger vessels, which may result in interruption of the balance between the Chinese navy's relative size and the United States navy.
- The Office Net Assessment, a branch of the American Ministry of Defense states that by late 2020, China will have possessed a battle marine force of 360 vessels, compared to an estimated total of 297 vessels for the American navy at the same time. Plus, this rate will have increased to 400 vessels by 2025 and 425 by 2030.
- The Chinese navy's vessels, planes and its arms systems are growing more modern, possessing greater capabilities compared to those they possessed in the early 1990. Now, they are similar in capabilities of many other western navies.
- China's maritime modernization effort encompasses a wide variety of plans to purchase platform and arms, including ASMB (anti-ship ballistic missiles), ACSM (anti-ship cruise missiles), submarines, field vessels, airplanes, unmanned vessels and command and support of command and control, communication, computer, intelligence, monitoring and patrol systems.
- China's marine modernization effort also includes enhancement in maintenance and logistics, doctrine, manpower quality, education, training and drills. In many cases, the material quality is comparable to that of the American navy's. China quickly catches up in all aspects.¹⁸
- The Chinese navy is considered a great challenge for the American navy's capability, since the Chinese navy's goal was to attain control and maintain it during war at "blue waters" regions in the western Pacific Ocean, an unprecedented challenge for the American navy since the end of the Cold War at the end of the 20th century. China's navy poses the greatest challenge at present for the United States' long-standing position as a leading military power in the western Pacific Ocean.

18 Unclassified ONI information paper prepared for Senate Armed Services Committee, subject "UPDATED China: Naval Construction Trends vis-à-vis U. S. Navy Shipbuilding Plans, 2020-2030m" February 2020, p. 3. Provided by Senate Armed Services Committee to CRS and CBO on March 4, 2020, and used in this CRS report with the committee's permission.

- China's military modernization effort is also aimed at developing military capacities for a prospective military war campaign against Taiwan, when necessary, in order to attain a greater degree of control on China's near marine area, particularly southern Sea of China, as well as in order to impose China's view stating the latter has the right to arrange foreign military operations in its EEZ (Exclusive Economic Zone), laying up to 200 miles from its coasts;¹⁹ for China's defense through SLOC (Sea Lines of Communication), particularly those connecting China to the Persian Gulf; for annulling United States' influence in the western Pacific Ocean, and to clarify China's standing as a leading regional power and a global center of power.²⁰
- China is interested in her navy's becoming part of operations aiming at area denial/anti-access, capable of deterring the United States' intervention in a conflict in the near sea area of China, surrounding Taiwan, or any other similar outline (Figure 2). Other missions for China's navy include maritime security operation against piracy, evacuation of Chinese citizens from foreign countries if necessary and humanitarian assistance (HA) or disaster response (DR) operations.
- Until recently, China's maritime modernization effort has appeared to be less focused upon expanding the general platform size (namely, vessels and aircraft), but more focused upon increasing the number of quality vessels. However, apparently it seems as though emphasis has been put upon the Chinese navy's order of force's size, its composition, quantity and quality of the manpower serving it.
- Although China's marine modernization effort has considerably enhanced China's capabilities in recent years, the present navy is estimated as possessing limitations and weaknesses in certain aspects, including joint operations with others. There is no doubt that the Chinese navy vessels are still inferior in terms of their capabilities, compared to those possessed by the United States navy, but over time, this gap drawing nearer and nearer to a close.
- The main gaps identified in the Chinese navy are' anti-submarine warfare (ASW), long-term focus, limited ability for reverse logistics at sea for battleships operating away from their home ports;²¹ the capability of training a multitude

19 For additional discussion, see CRS Report R42784, U. S. – China Strategic Competition in South and East China Seas: Background and Issues for Congress, by Ronald O'Rourke.

20 Roderick Lee, "The PLA Navy's ZHANLAN Training Series: Supporting Offensive Strike on the High Seas," China Brief, April 13, 2020.

21 Will Mackenzie, Commentary: It is the Logistics, China, National Defense, June 10, 2020.

of crew members for the new vessels;²² lack of recent combat experience. China is acting toward minimizing or overcoming such limitations and weaknesses, but there should be no room for misbelief that the navy in its current state is capable of carrying out missions that are of interests to the leaders of China. The more its capabilities improve, so will the variety of missions the navy is capable of carrying out.

Aside from the Chinese navy's modernization, China has substantially expanded its coasts guard which is, undoubtedly the largest of all coast guards in Eastern Asian countries. China also operates a prominent marine militia, consisting of a multitude of fishing boats. China mainly relies upon its marine militia and coasts guard in order to lay its marine claims at its nearest sea and defend them, while the navy operates beyond the horizon, as a potential backup force.

Table 3: Number of Chinese Navy's Battleships in the Years 2000-2030²³

Figures include both less-capable older units and more-capable newer units

	2000	2005	2010	2015	2020	2025	2030
Ballistic missile submarines	1	1	3	4	4	6	8
Nuclear-powered attack submarines	5	4	5	6	7	10	13
Diesel attack submarines	56	56	48	53	55	55	55
Aircraft carriers, cruisers, destroyers	19	25	25	26	43	55	65
Frigates, corvettes	38	43	50	74	102	120	135
Total China navy battle force ships, including types not shown above	110	220	220	255	360	400	425
Total U.S. Navy battle force ships	318	282	288	271	297	<i>n/a</i>	<i>n/a</i>

Source: Table prepared by CRS. Source for China's navy: Unclassified ONI information paper prepared for Senate Armed Services Committee, subject "UPDATED China: Naval Construction Trends vis-à-vis U.S. Navy Shipbuilding Plans, 2020-2030," February 2020, 4 pp. Provided by Senate Armed Services Committee to CRS and CBO on March 4, 2020, and used in this CRS report with the committee's permission. Figures are for end of calendar year. Source for figures for U.S. Navy: U.S. Navy data; figures are for end of fiscal year.

Note: n/a means not available.

In 2019, China recognized the need of its armed force to fulfill a more active role in *promoting its foreign policy*, emphasizing the global nature, growing more prominent, attributed by Beijing to its military force.²⁴ In recent years. The Chinese

22 Minnie Chan, China's Navy Goes Back to Work on Big Ambitions but Long-Terms Gaps Remain, *South China Morning post*, August 22, 2020

23 China Naval Modernization: Implications for U. S. Navy Capabilities – Background and Issues for Congress, Congressional Research Service, Updated September, 2020, P.31. <http://crsreports.congress.gov/product/pdf/RL/RL33153/243>

24 *Ibid* v

Communist party leaders instructed the Chinese army to enhance its operational preparedness level. The latter instruction was manifested by expanding the scope of army drills and their complexity.²⁵ One example for that may be found in the Chinese navy's operation in late 2019 in the Gulf of Oman and Sea of Arabia area. The marine maneuvering, shared by China's, Russia's and Iran's navies which was conducted in late 2019 in the Gulf of Oman took place at a time when the United States was attempting to escalate the sanctions against Iran, constituting a significant affront against the former.²⁶

China demonstrates a multi-layered defense approach regarding its coasts, including diverse means, from continental ballistic missiles, cruise missiles, attack aircraft, to various vessels operating in subordination to three theaters; north, center and south (Figure 2). This view greatly depends upon a command, control and monitoring system to gather the data for the three regional theaters. In the other half of the 2000's, China executed an information revolution associated with this challenge. In the opinion of Erickson & Chase, who inquired this matter in 2011, China's leaders perceive their state as facing with a strategic setting where "the military competition is based upon intensifying informatization". The navy strives for increased automation and linking of data between a large number of new space systems for navigation, sensation and communication, as well as anti-satellite capabilities. This system faces two main dilemmas:²⁷

1. Balancing attack-defense within information warfare.
2. Centralization vs. decentralization

Erickson and Chase indicate that the experience from other fleets suggests that when the connectivity increases, the centralization will increase more concretely. The question being raised is, will the Chinese navy employ its enhanced C4ISR capabilities in order to move the information down, to lower ranks, thereby empower junior commanders to make decisions? Or, alternatively, attempt to leverage new ISR

25 Ibid viii

26 For further reference on the matter see Ido Gilad's article at the Maritime Policy and Strategy Research Center, 'The Increasing Presence of Foreign Fleets at the Arabian Sea', 21st March 2020, p. 4. <https://hms.haifa.ac.il/index.php/he/component/content/article/24-2018-10-29-11-11-06/190-ido-gilad-incasing-the-presence-of-foreign-fleets-in-the-arabian-sea?Itemid=108>

27 Andrew S. Erickson and Michael S. Chase Informatization and the Chinese People's Liberation Army Navy, in Phillip C. Saunders, Christopher Yung, Michael Swaine, and Andrew Nien-dzu Yang, eds., *The Chinese Navy: Expanding Capabilities, Evolving Roles* (Washington, CD: Center for the Study of Chinese Military Affairs, Institute for National Strategic Studies, National Defense University, 2011, Chapter 10. http://www.andrewerickson.com/wp-content/uploads/2012/01/Erickson-Chase_PLAN-Informatization_NDU_2011.pdf

capabilities and an increasingly growing communication capability, thereby further enhancing centralized C2 in the higher ranks? Apparently, the latter possibility is more fitting to the Chinese army's present approach. Such approach may serve well area denial operation, but not "blue water" far away from China, where commanders are required to possess an ability to construct an independent maritime picture and independent thinking.

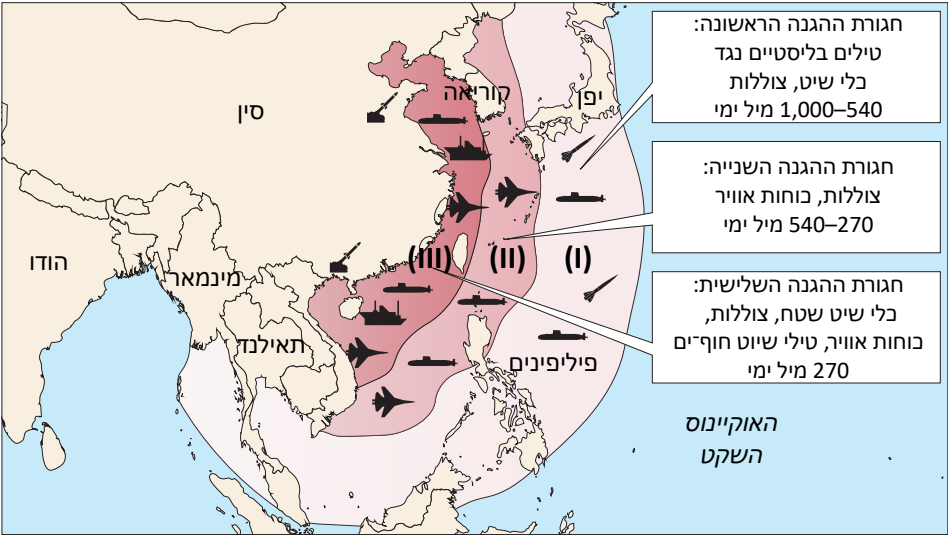


Figure 2: The Chinese Navy's Set of Forces and Means for Fulfilling the Strategy of Anti-access/area denial in the south China Sea

China's Operation in the East Mediterranean Sea: In the past decade, China has intensified its involvement in the Middle East and in the East Mediterranean Sea, using its so-called full wallet, so as to guarantee influence on key allies in the region as a means to promote its global aspirations. In early 2020, Egypt's Minister of Foreign Affairs Sameh Shoukry announced that Cairo would continue its collaboration within the Belt & Road Initiative (BRI), emphasizing China's economic grant as a key factor to the Egyptian interest in enhancing the mutual collaboration. By then, the Greek port of Piraeus had become the main gate to central and southeastern Europe. The investment by Chinese maritime company COSCO in the Piraeus port had increased the port's container output to 4.9 million TEU in 2018. Consequently, Piraeus became the second largest port in the Mediterranean Sea, and the 36th in the world in terms of size. This port's performance allowed COSCO company attain a 51% ownership at first, and later on, expand its port ownership to 100%. COSCO company has continued purchasing shares in the Zeebrugge (85%) and Valencia *51%) port

terminals, as well as over 35% of the Bilboa and Vado Ligure, Italy facilities. In light of the above described situation, United States' ambassador to Greece, Geoffrey Pyatt warned the Greek government that he hoped the planned privatization of the Alexandroupoli port would attract American or European investors, rather than Chinese or Russian ones. In spite of the intensifying activity and the Chinese influence in the East Mediterranean region, no deployments or drills by the Chinese fleet took place in the region in 2020.



Figure 3: Division of Chinese Navy's battleships for the defense of China by the various theaters²⁸

The Indian Fleet

In the past two decades, the strategic significance of the Indo-Pacific region has consistently increased, because of the global economic activity's expansion. A matter

²⁸ Benjamin Brimelow, What newly released pentagon maps reveal about China's growing military reach, Business Insider India, September 13, 2020. <https://www.businessinsider.com/new-pentagon-maps-show-chinas-increasing-military-power-and-reach-2020-9>

manifesting itself also by the economic center of gravity migrating eastward, and the social mobility occurring therein. This situation is a consequence of widespread trade in the region, and a growing need for providing the countries in the region and its citizens with maritime security. The region is becoming the global trade and energy supply center. Two-thirds of the global container trade passes through this region; both rising economies, India and China, as well as Japan's highly developed economy are dependent upon the sea routes in the Indo-Pacific region for purposes of trade and energy supply. Aside from the piracy threat, the security within those sea routes is important, since both important choke points, namely Bab-Al-Mandab and Malacca Strait are located on both ends of the region. Plus, this region is the home of more than 50% of the world's population, and is known to be rich in marine resources and minerals.

The region's significance does not rule out various viewpoints relating thereto. India views the region as a comprehensive, open, integrated and balanced sphere. It constantly emphasizes strategic relationships, as well as common challenges and opportunities between the Indian Ocean and the Pacific Oceans. The United States, on the other hand, views this area a place which must be free and open, emphasizing the importance of rules or behavioral norms in the region, thereby attempting to contain China's role within the region. The Association of Southeast Asian Nations – Asean – perceives the region as a political system which was established through collaboration of various social groups, particularly consociations, based upon common power, thereby bringing China into the area, not only to fulfill certain interests, but also seeking ways for collaboration with it in the region.

Table 4: Indian Fleet's Modernization Budget (70.5 rupee = 1 dollar)

Modernisation Head	2019-20 (BE) (Rs in Crore)	2019-20 (RE) (Rs in Crore)	2020-21 (BE) (Rs in Crore)	% Increase in 2020-21 (BE) over 2019-20 (BE)
Aircraft & Aero-Engine	2,400	1,150	4,640	93.3
Heavy & Medium Vehicles	45	25	30	-33.3
Other Equipment	3,500	3,600	3,000	-14.3
Joint Staff	929	929	1,022	10.0
Naval Fleet	12,182	15,434	12,746	4.6
Naval Dockyard/Projects	3,050	4,017	4,182	37.1
Total	22,106	25,155	25,620	15.9

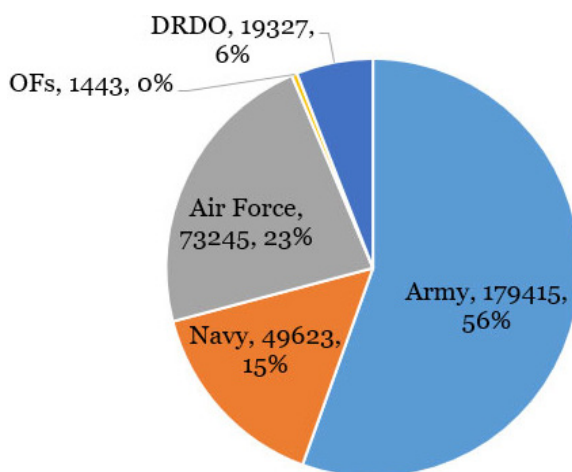


Figure 4: The Indian Fleet Budget 2020-2021. Division of the Indian defense budget between the fleet branches and the fleet's development party; the Indian fleet's part constituting 15% of the overall Indian defense budget (70.5 rupee = 1 dollar)²⁹

The Indian Battle Fleet: Size and Composition

Development of "blue waters" fleet capabilities: Considering the challenges faced by the Indian fleet in the Indian Ocean, it is highly important India develops a fleet capable of long-term operation in the Indo-Pacific region. Aside from developing the ordinary marine capability, the Indian fleet commanding parties have emphasized in recent years the need to be equipped with an ordered force of three aircraft carriers, one for each branch within the Indian Ocean (western, southern and eastern).

The current ordered force includes approximately 150 field ships and submarines. As of July 2020, the Indian fleet operates one aircraft carrier, another aircraft carrier is under construction, and amphibious transport dock, 8 landing ships, 10 battleships, 13 frigates, one nuclear activated attack submarine, two ballistic missiles submarines, 15 conventional attack submarines, 23 corvettes, 10 large marine patrol vessels, 4 fleet tankers, various auxiliary ships and small patrol ships.

One of the main objectives within the Indian fleet modernization's framework is *enhancing India's deterrence capabilities against its neighbor from north, Pakistan*. This is manifested by increasing the number of aircraft carriers, nuclear and conventional submarines, cruise missiles, ballistic missiles, construction of battleships

²⁹ Laxman Kumar Behera, India's Defence Budget, 2020-21 The Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA), February 04, 2020.
<https://idsa.in/issuebrief/india-def-budget-2020-21-lkbenera-040220>

and attack and patrol aircraft. India intends to purchase a wide variety of advanced weapons for its marine arsenal, including advanced anti-ship missiles, torpedo and aircrafts for field warfare and anti-submarines. During President Trump's first official visit to India in February 2020, an arms deal was agreed between both states, of a three billion dollars worth, including, among other things, the supplying of 24 MH-60R Seahawk helicopters for the Indian fleet, in order to enhance the capabilities of warfare against the submarine and the field. The helicopters to be provided to the Indian fleet will be equipped with secure communication, allowing them to become integrating into future operations with American vessels and aircrafts, or with other western fleets, possessing those capabilities.

In 15th of April 2020, the American government announced it had responded to India's request to provide it with ten AGM-84L missiles Harpon Block II, as well as 16 torpedoes for launching from aircraft, all worth 155 million dollars. Purchasing such advanced marine arms systems may, therefore, undermine the deterrence framework's stability existing in southern Asia. It may encourage India to consider facing the various marine capabilities possessed by Pakistan.

Due to its economic limitations, Pakistan, India's traditional, long-standing rival, is incapable of competing with India in terms of the Pakistani fleet's scope of equipment and modernization. Accordingly, it faces two options; a long-term option, to purchase similar arms systems, albeit expensive from the international market, such as from Russia, China or from both, in return to which, Pakistan may be in a political token for those purchases. The second option, is to develop, even if within a limited framework, its existing capabilities, based upon the fleet in being doctrine, which is capable of harming the Indian fleet, should a conflict arouse, through means of anti-field vessels and submarines means of warfare.³⁰

Indian Fleets Operation

The Indian navy's operation occurs in the shadow of China, its neighbor from north, as well as in light of border conflicts in the Ladakh region. In 2020, the India-China continental border conflicts aroused again. Additionally, another focus of tension had remained between the two countries in the Indian Ocean, where China rather substantially expanded its presence. One aspect to the tension is manifested by a military aspect, where Chinese submarines are cruising that region, and military vessels occasionally patrol. Yet the other dimensions is the development projects,

30 Haris Bilal Malik, Pakistan's Befitting Response to India's Offensive Naval Buildup, Modern diplomacy, May 10, 2020. <https://moderndiplomacy.eu/2020/05/10/pakistans-befitting-response-to-indias-offensive-naval-buildup>

and mainly the ports China is building in countries like Sri-Lanka, Bangladesh and the Maldives Islands, considered as India's so-called backyard, and its traditional area of influence. Thus, China constitutes a threat on the Indian interests within the Indian Ocean; China possesses a hold of the Hambantota port (Sri-Lanka), which is only a few hundreds of kilometers from Indian coasts. China provides military equipment to India's neighbors, that is, submarines to Myanmar, frigates to Sri-Lanka, equipment to Bangladesh and Thailand. Thus, in a way, it attempts to establish foothold and some control over this region.³¹

The Indian fleet has been in a high alert state since the India-China military conflicts began in the Ladakh region, and some of the vessels have been deployed in the Indian Ocean. In a sharp message to China, due to the growing tension in the Ladakh region border, battleships of the Indian navy and a strike force of the American navy, led by aircraft carrier USS Nimitz conducted a passex in mid-July 2020, in the Indian Ocean region (ICR). The passex involved four battleships of the Indian fleet and four battleships of the United States fleet. This passex was preceded by a comprehensive exercise and the Andaman and Nicobar Islands, dominating the marine trade routes of the Chinese ships. Additionally, the Indian navy and the Japan Maritime Self Defense Force conducted a similar exercise in June 2020.

Because of the growing tension, the Indian fleet's senior commanders held a three-day conference in mid-August 2020, which was designated to convey a political message to China. A senior Indian officer addressed the gathering on the media, stating: 'the conference becomes even more important in light of the recent incidents on our northern borders, along with the unprecedented challenges posed by the Corona pandemic, which will provide the higher marine leadership a broader forum to discuss the conduct in terms of operations, livelihood and holding assets and purchase.'³²

As part of establishing an anti-China coalition of countries, India has considered the Australian navy's invitation to join the annual marine exercise titled Malabar Naval Exercise. This exercise should also involve the navies of Japan and the United States. If the Indian proposal is approved by the Australian government, all the

31 The Big Picture – Indo-Pacific: Strategic Importance, Drishti, September 7, 2019. <https://www.dishtiiias.com/loksabha-rajasabha-discussions/the-big-pictures-indo-pacific-strategic-importance>

32 Pawan Bali, Amid tensions with China, Indian Navy begins three-day Naval Commanders Conference, Deccan Chronicle, August 20, 2020. <https://www.deccanchronicle.com/nation/current-affairs/190820/amid-tensions-with-china-indian-navy-begins-three-day-naval-commander.html>

The Quadrilateral Security Dialogue (Quad) members will participate in the marine exercise to be held in the Gulf of Bengal, so as to cue China that aggression at sea will not be overlooked.³³

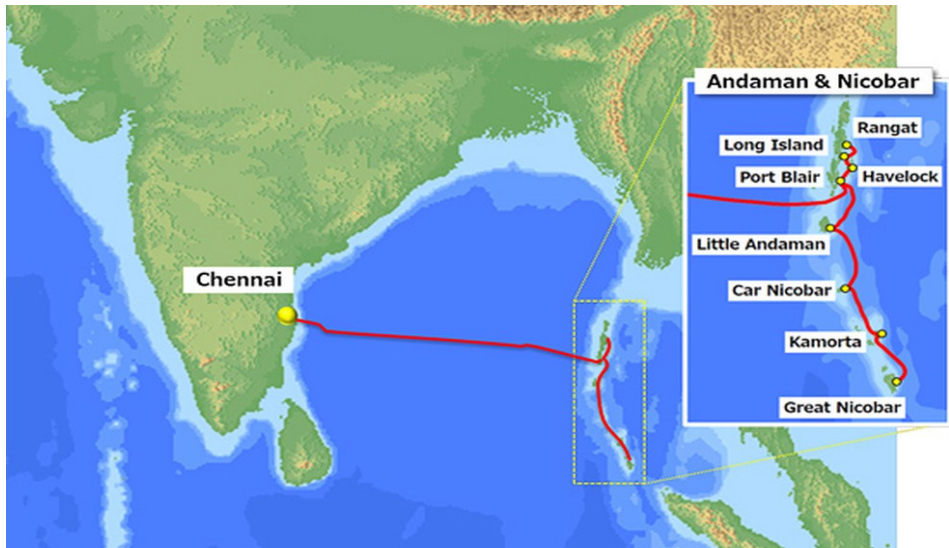


Figure 5: Gulf of Bengal – Andaman and Nicobar Islands

Following the marine incidents which occurred in Straits of Hormuz and at the Gulf of Oman in May 2019, where several tankers were attacked, and because of the Indian economy's dependence upon the petroleum coming from that region, in mid-June 2019, the Indian navy launched Operation Sankalp in the Persian Gulf and Gulf of Oman region, in order to secure tankers sailing the region while flying the Indian flag. The mission was executed by two battleships owned by the Indian fleet (INS Chennai). Additionally, patrol airplanes of the Indian fleet conducted patrol flight in the region.³⁴ It is noteworthy that India is involved in the civil operation of the Iranian Chabahar port. This Indian grasp implies the importance the region holds for India, as a rising foreign marine power, but also as a neighboring country close thereto. India possesses a multitude of interests, mostly economic and energetic

33 Pawan Bali, Indian, US navies carry out passage exercise in Indian Ocean amid China tensions, Deccan Chronicle, July 20, 2020. <https://www.deccanchronicle.com/nation/current-affairs/210720/indian-us-navies-carry-out-passage-exercise-in-indian-ocean-amid-china.html>

34 Indian Navy launches Operation Sankalp in Gulf of Oman, *Business Standard*, June 20, 2019. <https://bit.ly/34sO5IR>

ones, being a consumer of petroleum and its products produced at the Persian Gulf basin, transported by the marine sailing route in the region.³⁵

To sum up, India and the Indian fleets fulfill a role of a marine power located at a strategically important region in terms of the rivalry developing between the United States and China. The rivalry build in the China-India relationship causes India to draw closer to the United States. This latter step has been taken after many years when she was one of the leading countries in the non-identifying countries block. The Indian fleet is undergoing impressive construction processes, positioning it as a "regional blue waters fleet" within the Indian Ocean-Pacific Ocean arena of action.

The Russian navy

From the beginning of the last wave of reform of the Russian armed forces in 2009, the Russian leadership has been sending the message that the Russian navy has survived its crisis, returned to its former glory, and capable of fulfilling missions commensurate with a superpower's navy. This has been expressed in two prominent events:

1. **The annexation of Crimea** and Russian control of the port of Sevastopol, which is also the home port of the Russian navy on the Black Sea, close by to which are the navy's shipyards, and which play an important role in its maintenance.
2. **Expansion of the navy's missions** in its six operational zones (the Atlantic Ocean, the Arctic, Antarctica, Indian Ocean, Pacific Ocean and Caspian Sea), while giving preference to a permanent presence by the Russian navy in the Mediterranean Sea, and increasing its strength in the Arctic and Atlantic Oceans.

The strengthening of the Russian army and the orders of priority detailed in the 10-year plans, called "State Armament Plans" (GPVs). 2020 is included in the 10-year plan for the years 2011–2020, which put budget priority on the Russian navy and its aerospace arm. The latest strength building plan, GPV 2027 (which covers the years 2018–2020), put the priority on Russia's ground forces and rapid response forces (including maritime rapid response forces).

The Russian navy has more than 280 sailing vessels (about 69 submarines and 217 surface vessels) of various kinds, but there is a contradictory assessment regarding the operational fitness of some of these vessels.

35 See Ido Gilad's article "Increasing the Presence of Foreign Fleets in the Arabian Sea, 21st March 2020, The Maritime Policy and Strategy Research Center, Haifa University. <https://hms.haifa.ac.il/index.php/he/component/content/article/24-2018-10-29-11-11-06/190-ido-gilad-increasing-the-presence-of-foreign-fleets-in-the-arabian-sea?itemid=108>

The Russian navy is organized in fleets: The Northern Fleet, the Pacific Ocean Fleet, the Black Sea Fleet and the Baltic Fleet, and one flotilla in the Caspian Sea. Their main objectives are: sea area denial to an enemy and defense of Russia based on nuclear deterrence via the Russian submarine fleet.

Due to resource constraints that affect the navy's size, the Russian navy focuses on defending the country's coastline, given that it has limited power to operate expeditionary forces far away across the ocean. The Northern Fleet includes Russia's nuclear submarines and is also responsible for the Arctic Ocean and the North Sea. Following Russia's occupation of the Crimean Peninsula, the Black Sea Fleet developed, grew and began operating many ships that had previously operated in the eastern Mediterranean Sea, and especially in the area of the Syrian coast. The Russian navy is responsible for the artillery corps protecting Russia's coastline and ports, and it is armed with shore-to-see missiles and anti-ship missiles.

The rising importance of the Arctic Ocean: The Russian navy continues to build nuclear-powered icebreakers that will enable them to lead convoys in areas where there is danger from ice bergs. Russia's present icebreaker fleet includes 40 ships, of which 11 are new ships that are either in the planning stage or whose construction has been completed. Of these 40 ships, about 27 operate in the ocean and some are nuclear powered. In September 2017, the Russian navy launched the "Sibir" icebreaker, the second in a series of three icebreakers that, according to the Russians, are the strongest and largest icebreakers in the world. Sibir is 173 m long and is capable of carving a path through 2.8 m thick ice. The icebreakers are being constructed for operation in the Arctic Ocean and the Yenisei River estuary according to the design of the Rosatomflot nuclear agency.

The Russian army strengthening program for 2020 contains a budget allocation of almost 120 billion Euro, approx. 22% of the entire budget, for modernization of the navy. As part of this program, the Black Sea fleet is meant to receive 15 new ships (nine surface ships and six conventional submarines) by 2020. The first new ships were to have entered active service in 2014.³⁶ President Putin tasked the military and defense industries with acting to supply and manufacture ships, with the priority on installing the 3M22 "Zircon" anti-ship hypersonic cruise missile. According to the Russian minister of defense, in December 2019, he noted that these missiles will be integrated into five new ships whose accelerated construction is anticipated in 2020, as well as, as part of the systems upgrading planned to be carried out on existing

36 Dmitri Boltenkov, Reform of the Russian Navy, in Mikhail Barabanov (Ed.), *Russia's New Army*, Moscow, Center for Analysis of Strategies and Technologies, 2011, p. 83.

platforms in the navy. An inherent and continuing problem of the Russian navy is the level of logistical support on Russian ships, which hurts their level of combat operational preparedness in their various action zones. Whereas the Syrian port of Tartus has remained the single support base in the Mediterranean Sea for Russian ships, its military importance has nonetheless stayed marginal. As part of its 2011–2020 armament plan, Russia planned to develop infrastructure for the Russian navy in the port of Latakia also. Moreover, the Russian minister of defense, Sergey Shoygu, noted the possibility that the future expeditionary force will also use the logistical support of ports in Crete, Greece and Montenegro. We can say that the lessons learned by the Russian navy from its involvement in the Syrian civil war justify the expensive strengthening and modernization program of the Russian navy that began in 2011, and that, when completed, will allow it to deploy a modern Mediterranean Sea naval task force.³⁷

In June 2020, Russia, for the first time, made public its nuclear deterrence policy, and through which announcement it wished to broadcast the type of threats and conditions under which it might use nuclear weapons, as well as its nuclear deterrence strategy. Russia clarified that it will view any launching of a ballistic missile against it as a missile carrying a nuclear warhead, given the inability to know in advance what payload the missile will carry (conventional or nuclear).³⁸ Western analysts address this policy with skepticism and assert that, today, conventional weapons play an important role in Russia's concept of deterrence, despite the prevailing agreement within the Russian army about conventional abilities being deficient when talking about deterrence. Accordingly, some analysts believe that Russia maintains an "escalate to deescalate" strategy—where Russia might threaten, at an early stage in a military conflict, to use nuclear weapons so as not to risk losing.

As already noted in the Maritime Policy & Strategy Research Center (HMS) reports, in July 26, 2015, President Putin approved the **New Maritime Doctrine of the Russian Federation**, which details the Russian navy's strategy (Morskaja Strategija), its mission and the program for building up its strength. This doctrine replaces the one approved in 2001. In addition, it determines that the Russian navy will focus on the following **three objectives**: Nuclear strike capability through its underwater branch,

37 Igor Delanoë, Russian Naval Ambitions in the Mediterranean, Focus, Foreign Policy/Defense, "Russian Naval Ambitions in the Mediterranean", Russia 2014, Editions du Cherche Midi, French-Russian Observatory Yearbook 2014, publication from the French-Russian Observatory, April 2014, pp. 383–384. (commissioned)

38 Russian Armed Forces: Military Doctrine and Strategy, *Strategic Deterrence and Escalation Management*, August 20, 2020. <https://fas.org/sgp/crs/row/IF11625.pdf>

integration of the navy in its land strike capability through cruise missiles (as seen in the attacks of targets in Syria) and protection of the motherland's shores (including areas held by Russia in the eastern Mediterranean Sea) and ensuring anti-access/area-denial (A2/AD) to other navies in these regions. The latter two missions can be accomplished smoothly both by submarines and by small surface vessels such as frigates and corvets. We can thus see that in the present Russian maritime strategy, the mission of the large surface vessels described above is very limited.

As part of Navy Day 2020, on July 28th, a flotilla was held in St. Petersburg, during which President Putin declared that Russia will add new ships, vessels and armaments to the navy to demonstrate its growing strength. He further stated that Russia needs a strong navy to protect its interests and to this end, during 2020, another 40 ships of various models will be added to operational service, and he noted that recently the construction of six additional ships had begun in Russia's leading shipyards.³⁹

According to a report from the US Congress, the ability of the Russian defense industry to develop and manufacture new advanced technology systems is limited, and budget constraints may lead to decisions about purchase of less expensive but proven systems.⁴⁰ Despite the low oil prices and the negative economic forecast, it is reasonable to assume that Russia will fund the strengthening program (GVP 2027) with 330 billion dollars (about 3%–4% of its gross national product), which is in practice a more limited-in-scale program than GVP 2020. The economic pressure may, in the future, reduce its scope further. To date, the Russian navy enjoyed relatively high funding compared to other combat force arms, which fact enabled it to build new surface vessels and submarines, and to develop precision armaments after many years of limited budgets. In the construction of surface ships, the Russian navy preferred to develop "small" warships, having high and accurate firing power, which can be retooled modularly for various tasks thus enabling flexibility in using fire power. The Russian navy focused on developing long-range weapons with precision strike capability.

A large number of the Russian navy's ships are over thirty years old and require assorted repairs to extend their service lifetime. The Russian shipyards have problems building ships larger than 7,000 tons. As a consequence, Russia is depending more and more on frigates armed with different types of weapons, with anti-ship

39 Michael Daventry, Putin reveals plan to expand Russia's navy with 40 new vessels, *Euro News*, July 26, 2020. <https://www.euronews.com/2020/07/26/putin-reveals-plan-to-expand-russia-s-navy-with-40-new-vessels>

40 Russian Armed Forces: Military Modernization and Reforms, *Congressional Research Service, In Focus*, July 20, 2020. <https://crsreports.congress.gov/product/pdf/IF/IF11603>

vertical launch systems (hypersonic missiles, cruise missiles and anti-submarine torpedoes). Nevertheless, the missile development program, and especially cruise missile development, is experiencing a number of difficulties because Russia has always based its engine production on Ukrainian manufacturers, which stopped in 2014. Despite the budget supplements transferred in the past decade to the Russian shipyards, they are still not able to meet the strengthening program objectives, and are falling behind by years in their supply in comparison with the projected dates.⁴¹

As already described in the previous report, analysis of the future combat arena conducted by the Russian navy led to the understanding that littoral warfare will comprise a larger and larger part of the navy's operations in the coming years. Accordingly, the Russian navy decided to abandon the construction of large warships (aircraft carriers and cruisers), and through radical operational thinking to characterize, plan and build smaller ships (on the scale of frigates and conventional submarines), armed with advanced combat systems, which will have an advantage over those of the enemy on the strategic, operational and tactical levels.

In the 2019 report, we described the advances made in development of the new Russian torpedo, the "Poseidon", which is the largest torpedo ever developed by any country whatsoever. The torpedo, with a diameter of 2 m (6.5 feet) and longer than 20 m (65 feet), is three times bigger than a regular torpedo. President Putin announced that a test launch was supposed to have happened in spring 2019 from a Russian submarine.⁴² The torpedo, alleged to be able to carry a nuclear head and a conventional head, is expected to enter service in 2027 and be launched from the Oscar II submarine, or from the new Belgorod model submarines (K-329). Because of the torpedo's size, the precise shape of the six "Poseidon" torpedo tubes on the submarine is still unclear, and one expert has speculated that they will be installed in a type of circular launcher in order to minimize the quantity and size of launch doors, and enable easier loading of the torpedo onto the submarine. The project itself is especially grandiose, although from the perspective of strategic response, it offers a mediated outlet (an underwater one) that is the most invulnerable of all existing defense systems to anti-ballistic missiles (ABM). The method it uses to hit power targets (cities) is still unclear, and in particular, the torpedo's final track is unknown.

41 Russian Armed Forces: Capabilities, Navy, Congressional Research Service (CSR), July 20, 2020, p. 2. <https://fas.org/sgp/crs/row/IF11589.pdf>

42 H. I. Sutton, Russian Poseidon Intercontinental Nuclear-Powered Nuclear-Armed Autonomous Torpedo, *Covert Shores*, February 22, 2019. http://www.hisutton.com/Poseidon_Torpedo.html [Accessed September 25, 2020]

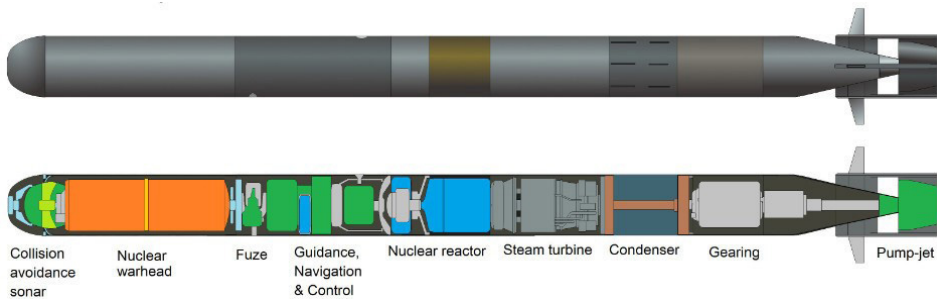


Figure 6: A Kanyon Status-6 Russian torpedo with a nuclear head

The marine part of the Russian nuclear triad has also been upgraded, both in terms of submarines and in terms of their launching abilities. The new Borei class nuclear ballistic submarine, which in 2000 began its sea trials, is two years behind schedule and when it enters active operational service, it will be armed with Bulava SS-N-32 ballistic missiles.⁴³ To maintain the existing order of force, the old Delta IV class submarines were simultaneously upgraded and equipped with SS-N-23 ballistic missiles, which are intercontinental missiles with a range of 8,200 km, running on liquid fuel and able to carry a nuclear payload with warheads that split upon impact.⁴⁴

The maritime aspect of the conflict with Ukraine: On November 25, 2018, a serious international incident took place when the Russian defense services' federal coast guard (FSB) fired on and seized three ships belonging to the Ukrainian navy, which had been trying to sail from the Black Sea to the Sea of Azov through the Kerch Strait on their way to Mariupol port. The Kerch Strait is the waterway between Russia and the Crimean Peninsula, which Russia annexed from Ukraine in 2014. The strait serves as a gateway to the Sea of Azov, which borders on Russia and Ukraine (see Figure 7). A bilateral convention gives both countries the right to use the waterway. It is also the location of a new bridge, 19 km long, built by Russia as a showpiece, costing an estimated 4 billion dollars. Since the annexation of the Crimean Peninsula, Russia

43 Maxim Strachak, The Borei-A SSBN: How Effective Is Russia's New Nuclear Submarine? The Jamestown Foundation, Eurasia Daily Monitor, June 16, 2020. <https://jamestown.org/program/the-borei-a-ssbn-how-effective-is-russias-new-nuclear-submarine>

44 SS-N-23 "Skiff", CSIS Missile Defense Project. <https://missilethreat.csis.org/missile/ss-n-23> [Accessed September 25, 2020]; Julian Cooper, How much does Russia spend on nuclear weapons? SIPRI, October 1, 2018. <https://sipri.org/commentary/topical-background/2018/how-much-does-russia-spend-nuclear-weapons>

significantly raised its military presence in the area.⁴⁵ The Kerch Strait has become a military friction point and where 24 Ukrainian servicemen were captured, along with their three ships, and taken into Russian custody. The sailors and the ships were returned to Ukraine in fall 2020, after many months of being held in jail by Russia.

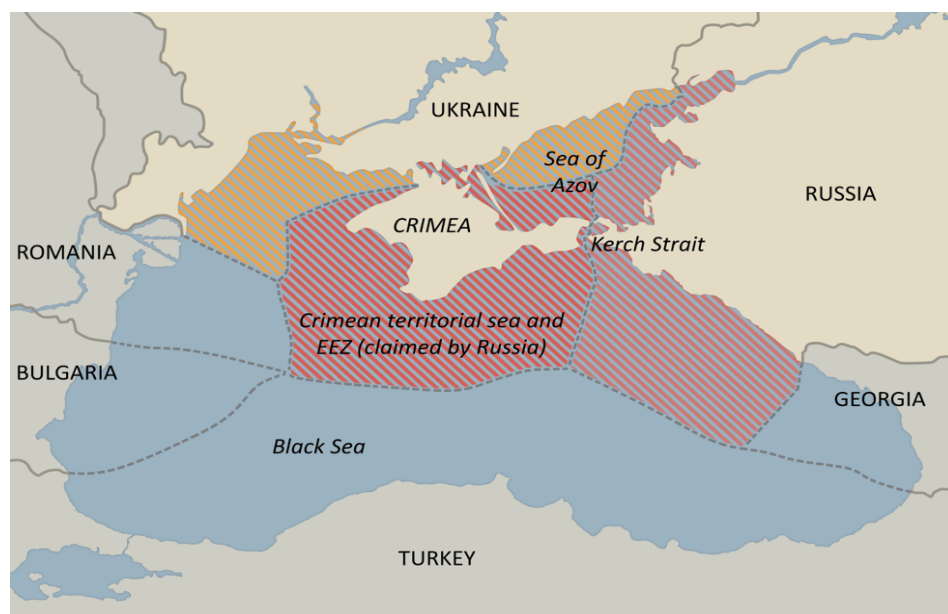


Figure 7: Kerch Strait – Sea area and sovereignty

During the incident itself, NATO forces and the US Sixth Fleet abstained from helping the Ukrainians, but in the past year, the US has stepped up its support to Ukraine's maritime forces. In June 2020, the US Foreign Office announced that it was authorizing the sale of 16 Mark VI patrol boats to Ukraine. These patrol boats are equipped with optical sighting machine guns that are used by the US navy for combat in rivers and constrained water areas. The transaction will cost 600 million dollars, of which 250 million dollars are being given to the Ukrainians as foreign aid. The US navy is also helping Ukraine develop its intelligence capabilities in order to

45 Andrew Roth, Kerch strait confrontation: what happened and why does it matter? *The Guardian*, November 27, 2018. <https://www.theguardian.com/world/2018/nov/27/kerchstrait-confrontation-what-happened-ukrainian-russia-crimea>

improve its abilities to conduct patrols and build a maritime and aerial picture of the Black Sea and the Sea of Azov.⁴⁶

In 2020 NATO accorded Ukraine the status of an "enhanced opportunities partner", which countries such as Sweden, Finland, Georgia, Austria and Jordan already hold. The significance of this act is that Ukraine will have enhanced access to joint programs and exercises and other information collaborations, including conclusions published at the end of exercises. It must be emphasized that the US navy and NATO, from time to time, conduct patrols in the Black Sea as part of the freedom of navigation activities in the region.

The creation of **cooperation and coalition building with the Chinese navy**: Since 2014, Russia and China have been strategic partners, including the sale of advanced military equipment and more detailed plans of bilateral and multilateral military exercises. Economic and diplomatic cooperation between the two countries has also tightened, albeit not to the same extent. It is reasonable to assume that the bilateral cooperation will not advance to the level of a full treaty because of the differences in geopolitical interests and the asymmetry of the countries' power, and that Russia will continue to refuse to recognize completely China's rise as a geopolitical power.⁴⁷ US actions to put pressure on both Russia and China have had the effect of bringing the latter closer. The joint naval exercises that they conduct usually have a confrontational message for the US, and their complexity is continually increasing. Nevertheless, the over "conventionality" and bad coordination of the exercises has been criticized, as was the continuing lack of a joint command structure.⁴⁸ A confrontational message of this type was sent to the US in late December 2019 during a broad naval exercise held in the Gulf of Oman, whose objective was coordinated with the cooperation described above, and in which, besides from ships from the Russian and Chinese navies, ships from the Iranian navy also participated.⁴⁹ The objective of the joint

46 David B. Larter, After a Kerch Strait confrontation, the US beefs up Ukraine's maritime forces, *Defense News*, July 2, 2020. <https://www.defensenews.com/naval/2020/07/02/afterthe-kerch-strait-confrontation-the-us-moves-to-beef-up-ukraines-maritime-forces>

47 Dmitry Gorenburg, An Emerging Strategic Partnership: Trends in Russia-China Military Cooperation, *George C. Marshall, European Center for Security Studies*, April 2020, Number 054. <https://www.marshallcenter.org/en/publications/security-insights/emerging-strategic-partnership-trends-russia-china-military-cooperation-0>

48 Andrej Krickovic, The Symbiotic China-Russia Partnership: Cautious Riser and Desperate Challenger, *Chinese Journal of International Politics*, Vol. 10, No. 3, 2017, pp. 299–329.

49 Ben Westcott and Hamdi Alkshali, China, Russia and Iran hold joint naval drills in Gulf of Oman, *CNN Digital Expansion 2017*, December 27, 2019. <https://edition.cnn.com/2019/12/27/asia/china-russia-iran-military-drills-intl-hnk/index.html>

exercise was the demonstration of the presence and strength of Russia and China in the face of the coalition led by the US against Iran.

In the area of export of maritime weapons systems, Russian still supplies ships and advanced weapons to many navies, including the Indian navy, which despite its closeness to the US navy, continues to maintain a special relationship with the Russian navy. Naval systems constitute 8% of all export of weapons systems by the Russian armament industry, which in 2019 made a total of 13 billion dollars in sales.⁵⁰ These sales are very important for the Russian economy, whose performance is not very good.

The activities of the Russian navy in the eastern Mediterranean Sea: As already noted in last year's annual report, Russia's strategy in the Mediterranean Sea focuses on three main objectives: exploitation of the geographic position of the Mediterranean Sea to improve Russia's security, use of Russia's standing in the Mediterranean Sea to increase its standing as an alternative world power to the US, and support of the Syrian government of President Assad.

A central feature of this strategy is the placement of a trustworthy military force in the Mediterranean Sea. A permanent force in the region is important for several Russian objectives, including protecting Russian access and reducing Russia's vulnerability to surprises.⁵¹ To reach this objective, Russia intervened very heavily in the Syrian civil war, and was instrumental in helping save Assad's government. This was also seen in the nuclear negotiations with Iran when sometimes it supported pressure on Iran and sometimes defended Iran in the UN. Russia succeeded in formulating a new contract with five countries on the Caspian Sea, including determining their littoral rights,⁵² and negotiating an end to the Syrian civil war.

In return for its crucial military support of Assad's government, Russia gained access to and control of upgraded military bases ("warm-water bases"), in Syria—the Tartus naval base and the Khmeimim air base.⁵³ From these bases, Russia can project power

50 Russia makes \$13 billion worth of arms sales in 2019, *Defence.AZ*, December 17, 2019.

[http://defence.az/ru/news/140079/russia-makes-\\$13-billion-worth-of-arms-sales-in-2019](http://defence.az/ru/news/140079/russia-makes-$13-billion-worth-of-arms-sales-in-2019)

51 Dmitry Gorenburg, Russia's Naval Strategy in the Mediterranean, *Davis Center for Russian and Eurasian Studies*, Harvard University, September 18, 2019.

52 Andrew E. Kramer, "Russia and 4 Other Nations Settle Decades-long Dispute Over Caspian Sea," *The New York Times*, August 12, 2018.

53 Yuliya Talmazan, "Russia establishing permanent presence at its Syrian bases: Minister of defense," *NBC News*, December 26, 2017 ("Putin added ... that while Russia might be drawing down much of its forces, its military presence in Syria was a permanent one and that it would retain enough firepower to destroy any Islamic State comeback.").

to the Middle East, the Balkan and throughout the eastern basin of the Mediterranean Sea. If, in the future, a maritime conflict transpires, Russia, positioned in the region, can conduct an area denial strategy against the US.

The Russian navy in the eastern Mediterranean Sea is based mainly on the Black Sea navy, and its size ranges from 8–15 assorted types of ships. The Russians are diligent about conducting navy exercises in the eastern Mediterranean Sea at least once a year in September. In 2020, too, the Russians announced the closure of areas on behalf of a two-stage firing exercise to be conducted by it in September 2020 (see Figure 8). The two areas, apparently overlap the areas in which Turkey was conducting seismic searches for gas deposits, and which are disputed by Cyprus and Greek. The website of the Turkish navy related to closure of the areas in advance of the exercise and noted that Turkey entreated Russia not to interfere with the seismic studies of the Turkish ships being conducted south of the Greek island of Kastellorizo and east of Cyprus. Unofficial sources in Russia, however, responded that the exercises were a show of strength on the part of Russia against NATO, and not an attempt to back Turkey in its quarrel with Greece and Cyprus regarding economic waters in the region.⁵⁴



Figure 8: The areas that were closed because of Russia's naval exercise in the eastern Mediterranean Sea in September 2020

54 Selcan Hacaoglu and Henry Meyer, Russia to Hold Naval Exercise in Mediterranean Amid Tensions, *Bloomberg*, September 3, 2020. <https://www.bloomberg.com/news/articles/2020-09-03/russia-will-hold-naval-exercise-in-mediterranean-turkey-says>; Boyko Nikolov, what is Putin preparing in the Mediterranean? Russia began exercises, but against whom? *BulgarianMilitary.Com*, August 24, 2020? <https://bulgarianmilitary.com/2020/08/24/what-is-putin-preparing-in-the-mediterranean-russia-began-exercises-but-against-whom>

During 2020, Syria served as a launch pad for Russian **operations in Libya**, where civil war still rages, including aircraft deployment to support the Wagner PMC Group. The Wagner PMC Group is a Russian military organization that is sometimes described as a private military company. The group operates as a 'contractor' for projects having a military aspect around the globe, including being involved in battles in conflict areas. The Wagner PMC Group has been fighting for months in the western Libyan region to support the Khalifa Haftar and against the Turkish forces that back the Government of National Accord (GNA), its enemy. During the fighting, these groups used covert tactics and Russian air power. The Washington Institute calculates that "*[a] though Moscow would face many challenges if it tries to establish permanent offensive and AZAD capabilities in Libya like it has in Syria, its covert actions thus far show a commitment to playing the long game against NATO in the East Mediterranean*".⁵⁵ Nevertheless, it is worth remembering that adopting the A2AD strategy in Libya will not be such a simple strategy, and Russia's position in Libya is not the same as its position in Syria. In other words, in contrast to Assad's government, the world-recognized government of Libya did not invite Russia to enter the country, which, therefore, forced Putin to take more covert actions. Moscow is also confronting more serious resistance in Libya, given that the Turkish support in Libya, which is at odds with that of Russia, has changed the balance of power for the benefit of the GNA, and Russia's activities against Turkey will require a different sort of effort from Russia. Nevertheless, in the past, Russia successfully thwarted the actions of Turkish president Recep Tayyip Erdoğan against the Kurds in northern Syria by using the threat of additional Syrian refugees from Idlib moving toward Turkey. At the end of the day, however, neither Putin nor Erdoğan want a direct clash, and instead, they continue to cooperate whenever possible and conduct business ad hoc. Moscow is not committed to opposition leader Haftar as it is to Assad, and accordingly, it is liable to abandon him if pressure from Turkey or other players in the region grows too strong.

To summarize, the Mediterranean Sea will continue to play a key role in the strategy of the Russian navy because of its strategic importance as a place allowing access to southern Europe, the Middle East and North Africa. From Russia's perspective, the Mediterranean Sea symbolizes the increased competition between Moscow and Washington. By building its naval forces, Russia hopes to prevent NATO from having access to the region, to protect the southern regions of Russia, and to assist

55 Anna Borshchevskaya, Russia's Military Activity in the East Mediterranean Echoes, Its Approach to Syria, *The Washington Institute, Policy Watch 3334*, June 17, 2020. <https://www.washingtoninstitute.org/policy-analysis/russias-military-activity-east-mediterranean-echoes-its-approach-syria>

as a benefactor of the states it presently and potentially has under its patronage in the region. Nevertheless, maintaining the forces it has in the Mediterranean Sea is less preferable to the Russian strategy than defending the motherland. Sustaining a maritime presence in the Mediterranean Sea is a more efficient strategy for the Russian navy than competing with the US navy in the open sea ("blue waters"), since Russia does not have the resources or global aspirations to challenge the US superiority around the world, and compete with the US navy in traditional power projection missions and expeditionary forces in the Mediterranean Sea. Russia's traditional navy of Soviet era surface ships will continue to focus on status projection, visiting ports and similar operations designed to exude the image of a superpower. Moscow's focus on developing and enlarging the Mediterranean Sea flotilla is, therefore, a limited target to reach, yet one that aligns well with Russia's foreign policy in the region.⁵⁶ Russia has its own agenda for the eastern Mediterranean Sea, and it is not interested in increasing Turkish influence in this region, because this would mean that it is liable to lose traditional clients and naval control of waterways to and from the Suez Canal.

The North Atlantic Treaty Organization's (NATO) naval forces

In 2020, NATO conducted operational activities in Afghanistan, Kosovo and the Mediterranean Sea. At the beginning of 2020, the EU states rejected the US request that Europe also leave the nuclear agreement with Iran (in effect, this was directed at France and Germany who are parties to the agreement). The EU foreign minister, Josep Borrell, even declared that the EU will aspire to maintain the agreement with Iran as long as Iran adheres to its commitments.

Policy and strategy: The meeting of the NATO defense ministers, which was held on May 14, 2020, was the first online meeting ever held by the NATO defense ministers in all its 71 years. The meeting was dedicated to the alliance's response to the CORONA pandemic and operations in Afghanistan and Iraq. In June 2020, a second online meeting was held in which NATO's readiness to deal with the second wave of the pandemic was reviewed. Likewise, during the meeting the security implications of Russia's growing missile stockpile, including dual use conventional-nuclear missiles, were discussed. During the meeting, the member states adopted an essential and balanced package of political and military steps to meet these challenges. To prepare a multiyear program for the next decade, and especially given the political aspects of

56 Dmitry Gorenburg, *Russia's Naval Strategy in the Mediterranean*, *Davis Center for Russian and Eurasian Studies*, Harvard University, September 18, 2019.
<https://russiamil.wordpress.com/2019/09/18/russias-naval-strategy-in-the-mediterranean>

a program such as this, the secretary general of NATO appointed a team of experts from ten different states to prepare the program, which, clearly, after being approved by the NATO members will constitute the alliance's new strategic concept.⁵⁷

The **three core missions of NATO that were defined in the 2010 strategic concept** are: Collective defense, crisis management and collaborative security. The **collective defense** mission had primacy during the Cold War. **Crisis management** was a response to terror and other threats that emerged from the chaotic Middle East and North Africa. **Collaborative security** focused on strengthening the alliance to reduce the instability among NATO members. A decade has passed since these missions were defined, and in the opinion of experts dealing with this topic, NATO would do well to delineate an additional mission for itself—**preserving stability** that is not limited to Europe itself, but also to other wider regions around the globe. This mission could include, among others, maintaining freedom of the seas and unimpeded passage through chokepoints; restraining military activities in space and the North Pole; and countering cyber operations that undermine the stability of countries. International norms exist for a significant part of the global challenges, and NATO's job, according to these experts, is to unite and strengthen these norms.⁵⁸

Several events that affected NATO in general, over the past year, and its naval forces in particular:

- A tenuous relationship between the alliance's member states and the US during the presidency of Donald Trump (greater than at any period since the end of WWII). Even if the US and the EU are not in direct conflict, President Trump's unpredictable and unilateral policies created challenges for the EU (including his announcement about the withdrawal of US troops stationed on German soil).
- Dealing, in eastern Europe, with a more and more aggressive Russia hoping to exploit the rift within the EU and NATO, and enlarge it through nurturing rightwing populist movements and the use of disinformation networks as well as increasing its military strength. Further, there is the ambiguity in the Black Sea and its surroundings regarding the possible additional steps that Russia will take in the entire region, and especially in Ukraine.
- Problems inside the EU states such as the rise in xenophobia, terror and multinational crime as well as new challenges from cyberspace.

57 Secretary General appoints group as part of NATO reflection process, *NATO News*, 31 Mar 2020. https://www.nato.int/cps/en/natohq/news_174756.htm

58 Hans Binnendijk and Timo S. Koster, NATO needs a new core task, *Defense News*, July 22, 2020. <https://www.defensenews.com/opinion/commentary/2020/07/22/nato-needs-a-new-core-task>

- The impact of Britain's exit from the EU while remaining in NATO. It is worth remembering that Britain has the highest defense budget among NATO members, after the US, that it is a permanent member of the UN Security Council, and that its naval forces have a range of capabilities (including independent nuclear deterrence capability). With Britain's exit from the EU, 80% of the alliance's defense budget will be coming from non-EU members.
- Deteriorating relations with Turkey, which is also diverting its operations to the East and is interested in purchasing Russian weapons systems alongside Turkey's conflict with Greece and Cyprus related to the demarcation of the border of its economic waters.
- In southern Europe, the Syrian and Libyan civil wars have created a situation of instability and contributed to friction between NATO members (e.g., France and Italy) regarding the way to handle these crises.

The operational naval response: The European Maritime Force (EuroMarFor – EMF) is a standing military force whose mission is to conduct naval, aerial and amphibious operations. The force is on standby to go into action within five days after getting the order. It was set up in 1995 to fill missions defined in the Petersburg Declaration, i.e., control of the sea, humanitarian missions, peacekeeping operations, crisis response actions, and peace enforcement. NATO acts according to its naval strategy, which also delineates NATO's naval activity parameters (collective defense, crisis management, joint security and naval security). NATO maintains permanent naval forces that are meant to provide it with the ability for immediate naval response. NATO's naval command headquarters (MARCOM) is located at Northwood, Middlesex, Britain, and its commander is also the force's naval commander (COM MARCOM) as well as NATO's naval expert responsible for consulting on matters of the sea to the strategic level, which is at NATO headquarters in Mons, Belgium.

In line with this and the recent events noted above, NATO is meant to deal in the near future with a series of **security challenges**:

- The challenges created by Russia and their intricacy, even if not as an enemy, at least as a bitter opponent.
- The complex challenges of the civil wars in Syria and Libya and the tensions in the eastern basin of the Mediterranean Sea.
- The deepening instability of the southern coast of the Mediterranean Sea including the situation in Libya.
- In the north – The rise in importance of the North Sea and the Baltic Sea and their significance for the security of NATO.

Even though **Britain's exit from the EU** is not yet complete, it is now clear that its active participation in NATO will continue. Nevertheless, at this point already, issues that will have to be dealt with are arising, such as preserving Britain's sole responsibility, after it leaves the Union, for patrolling its exclusive economic zone (EEZ), and not share this mission with other EU members. In the framework of the existing agreements of all the EU countries, free access to the territorial waters of member states, more than 12 miles from shore, is granted. After leaving the EU, Britain will need to renegotiate its free access to territorial waters.⁵⁹

Lack of NATO involvement in the Syrian civil war: The completion of the withdrawal of the last US troops remaining in the Kurdish enclave in northeast Syria in October 2019, and its agreement to let Turkey intervene in the region to create a buffer zone between Turkey and Syria, has left the strategic processes in the region, in particular, to Russia' attention together with Turkey and Iran. Among NATO members, there is no consensus about how to solve the crisis between Turkey and other NATO members. For example, Norway, Germany and Holland declared that they will stop arms sales to Turkey. Erdoğan has threatened that he is "liable to open the gates, and send 3.6 million refugees into Europe," and the head of the Greek government, Kyriako Mitsotakis, Turkey's neighbor who is likely to be the first to be hurt from such a step, called for NATO to prepare for this to happen and to increase navy patrols in the Aegean Sea.⁶⁰

NATO operations also in the Black Sea: Since Russia annexed Ukrainian territories in the Crimean Peninsula in 2014, NATO has increased its presence in the Black Sea. In 2020, and despite the CORONA pandemic, NATO's ships continued to patrol the Black Sea. Standing NATO Maritime Group 2 (SNMG2) and Standing NATO Mine Countermeasures Group 2 (SNMCMG2) entered the Black Sea in July 2020 to conduct additional routine operations and participate in two regional exercises organized by the Bulgarian and Ukrainian navies. The commander of the SNMG2 declared that "[t]his visit to the Black Sea is yet another example of NATO's ongoing regional commitments with our Allies and partners".⁶¹ It is likely that these patrols contribute to heightening the maritime awareness of NATO forces in everything related to the region of the Black Sea, but by themselves, they cannot influence Russia's policy

59 UK Won't Be Able to Protect Its Waters After Brexit, Former Navy Chief Says, *Sputnik*, September 2, 2018.

60 Turkey's relationship with NATO tested over Syria operation, *BioReports*, October 14, 2019. <https://bioreports.net/turkeys-relationship-with-nato-tested-over-syria-operation>

61 Public Affairs Office at MARCOM, NATO forces return to the Black Sea, *NATO News*, July 14, 2020. <https://mc.nato.int/media-centre/news/2020/nato-forces-return-to-black-sea>

toward Ukraine in the area, as it was expressed recently in the clash between the Russian and Ukrainian navies in the Kerch Strait, and discussed in the section on the Russian navy.

Operation Sea Guardian: Following the Warsaw Conference in 2016, it was decided to stop Operation Active Endeavour and replace it with Operation Sea Guardian, ally with the EU's Operation Sophia, and coordinate operations with the operations of the Italian coastguard. The operation was intended to provide NATO with the ability to immediately respond in the force's region of activity in the Mediterranean Sea. The task was assigned to Standing NATO Maritime Group 2 (SNMG2), which usually comprises from 4–6 ships, frigate–battleship size, and which, starting from May 10, 2020, has been conducting operations of this sort in the Mediterranean Sea. SNMG2 has conducted various activities such as tracking the movement of commercial ships, analysis of automatic identification system (AIS) data and interrogation of suspicious ships. These activities help build a comprehensive picture of the maritime environment in the area. Since SNMG2 began its support of Operation Sea Guardian, the group has conducted its activities in the eastern Mediterranean Sea, and patrolled opposite the Suez Canal, prior to entering the center of the Mediterranean Sea and the Aegean Sea, in parallel to overseeing the movement of commercial ships into and out of the eastern Mediterranean Sea. The operations heighten operational maritime domain awareness to increase and safeguard the security of the entire Mediterranean Sea.

Turkey's relationship with NATO: Turkey's aggressive actions in the eastern Mediterranean Sea have resulted in Turkey, a NATO member, being described by the *New York Times* in the following way: Turkish Aggression Is NATO's 'Elephant in the Room.'⁶² Turkey's latest actions, which include, among others, unilateral steps and confrontational declarations, necessarily constitute a threat to countries such as Greece, Cyprus, Israel, the EU states, the US and NATO as a whole.⁶³ France protested that during the patrol of a French frigate in the area of Cyprus, and when having stopped a suspicious ship that was carrying equipment from Turkey to Libya, per the arms embargo imposed on Libya by the UN, a Turkish frigate that had been in the area intervened and locked its fire-control radar (pinged) on the French ship three different times. Operationally, this type of action is liable to lead to opening of fire, and this is a very aggressive action in symbolic terms. The French protested that

62 Steven Erlanger, Turkish Aggression Is NATO's 'Elephant in the Room', *The New York Times*, August 5, 2020. <https://www.nytimes.com/2020/08/03/world/europe/turkey-nato.html>

63 Marc Pierini, How Far Can Turkey Challenge NATO and the EU in 2020? *Carnegie Europe*, January 2020. https://carnegieendowment.org/files/Pierini_Turkey.pdf

Turkey was trying to enable the transfer of arms to the government in Tripoli, which action contravened the UN Security Council's decision, and described the actions of the Turkish ships as "aggressive in the extreme" and "unacceptable by a member of NATO against another member of the alliance." Turkey responded that France violated the UN's decisions and NATO's decisions by supporting the rebel forces of the Khalifa Haftar against the Government of National Accord (GNA), headed by Fayeز al-Sarraj. The meeting of the alliance's defense ministers in August 2020 did not result in compliance with France's request to censure Turkey's action, and raised tensions between the two NATO members. The **president of France, Emmanuel Macron**, said that "Turkey is provoking tension" with what he termed "its unilateral decision to send research ships to survey the seabed in the eastern part of the Mediterranean Sea that is in Greece's economic waters, which only Greece has the right to exploit," and sent French warships to conduct exercises with the Greek navy in the region.⁶⁴

Turkey is involved in a serious conflict with Greece (also a NATO member) in everything relating to demarcation of economic waters. The Turkish president signed an agreement with the Government of National Accord (GNA) in Libya regarding delineation of the economic waters of the two states that ignores the rights of Greece and Cyprus in the matter. The issue led to a near maritime clash when the two countries deployed their navies adjacent to the disputed area. Pressure that was put on Turkey by Germany and the actions of the secretary general of NATO, Jens Stoltenberg, led to the two states deciding to let the situation lie. Stoltenberg emphasized, in his talks with the head of the Greek government and the president of Turkey, the importance of resolving the situation in the spirit of allied solidarity and international law. According to him, military delegations from Greece and Turkey met many times at NATO headquarters in Brussels in the aim of creating deconfliction mechanisms to prevent maritime and aerial incidents and accidents. The secretary general noted the progress in the talks and stressed that NATO constitutes an important platform for consulting on matter of ongoing security.⁶⁵ According to experts who deal with NATO's relationship with Turkey: "In the final analysis, ..., Turkey today has a triple identity: a strategic partner for Europe, especially in the economic and trade fields; Europe's adversarial interlocutor in the Eastern Mediterranean and the Middle East; and a negative player within NATO. The challenge for EU leaders in 2020 is to combine pushing back Turkey's actions when

64 Anthee Carassava, France Sends Forces to Mediterranean as Greece, Turkey Dispute Territory, *Voanews*, August 14, 2020. <https://www.voanews.com/europe/france-sends-forces-mediterranean-greece-turkey-dispute-territory>

65 NATO Secretary General discusses Eastern Mediterranean with Prime Minister Mitsotakis, *NATO News*, September 24, 2020. https://www.nato.int/cps/en/natohq/news_178323.htm

they run counter to EU core interests with cooperation when there is ground for joint action. In trying to do so, they should not expect an easy ride."⁶⁶

As noted, **NATO's doctrine** has not been updated to deal with challenges that have developed, and in particular, those from the **Mediterranean Sea**. Accordingly, the leaders of the countries who participated in NATO's July 2016 Warsaw Summit decided to change the operational plan and operational concepts and adopt a new operational plan (which replaced the operational plan from 2001, Operation Active Endeavour), Operation Sea Guardian. The latter's objective was defined in the following way: "coordination with maritime stakeholders in the Mediterranean Sea to deter, to prevent acts of terror and to mitigate other security risks." The tasks assigned to this force are: building an up-to-date picture of the operations in the Mediterranean Sea and maintaining it in order to assist in identifying possible security risks, and performing three main tasks: maintain maritime situational awareness, deter and counter terrorism and enhance capacity building.⁶⁷ The center overseeing the task forces and building the situational awareness is located in Northwood, Britain.

The various interests NATO members have in Libya: During 2020, and against the background of the ongoing civil war in Libya, the opposing interests of some NATO members that have forces operating in Libya have sharpened acutely. Turkey, for example, provides massive amounts of essential support to the recognized government (GNA), and has, through military troops in 2020, succeeded in changing the balance of power on the ground. In opposition, France, as noted earlier, is operating vigorously in the sea to enforce the embargo placed on Libya by the UN.⁶⁸ As of 2017, the Italian coastguard has worked intensively to **prevent the stream of refugees** from reaching Italy from Libya, which activities are conducted in coordination with GNA in Tripoli, and which have sharply reduced the stream of refugees from North Africa to southern Europe (for further details, see the section on immigration via the sea in the chapter on global developments). Operation Sophia, run by the Italian navy for this purpose, caused disagreement between the alliance members because the Italian prime minister, Paolo Gentiloni, in April 2019, signed an order prohibiting

66 Pierini, 2020, p. 11.

67 Fact Sheet, Operation Sea Guardian, Allied Maritime Command Northwood UK, Media Center, October 7, 2019. <http://www.mc.nato.int/media-centre/fact-sheets.aspx>

68 The UN Security Council imposed an arms embargo on Libya in February 2011, which applies to supply or arms and military equipment to Libya or from it. Since September 2011, the Security Council has allowed arms supplies to the entities considered as Libya's government as recognized in the world, first the National Transitional Council (NTC) and today the Government of National Accord (GNA), contingent on the supplies being approved by the Sanction Committee.

patrol boats from rescuing people at sea. This led to Germany withdrawing from the mission and protesting that Italy's position undermines the operation's urgency. After Italy closed its waters to rescue and charity boats, the European countries could not reach agreement about the question of which countries should retrieve most of the refugees at sea.⁶⁹ Against this background, diplomatic talks were held between NATO members in Berlin, Germany, where at the end it was decided to terminate the activities of Operation Sophia in its present form.⁷⁰

In the shadow of conflicting interests of some NATO states in Libya in recent years, as noted above, and without efforts to mediate these differences, the NATO secretary general, Jens Stoltenberg, took the initiative and announced that NATO fully supports the work of the UN to find a political solution for the crisis. After Stoltenberg spoke to the head of the Libyan government, Fayeze al-Sarraj, on the phone, "in order to discuss the latest developments in the country". He emphasized the need to recruit the support of all the opposing factions in Libya and all the members of the international community, to support the process that the UN is leading, and to respect the UN's arms embargo. Stoltenberg also expressed support for the process being led by Germany, the EU President, which complement UN efforts to achieve peace and stability in Libya.⁷¹

Can NATO rise above the interests that are at cross-purposes in Libya and advance peace and rapprochement processes between the various adversaries—we will have to wait and see.

The Egyptian Navy

In 2019, a chapter comprehensively reviewing the Egyptian navy was included in the Center's annual report. The two reasons that led to the writing of this chapter were:

1. For the first time, the navy is undergoing a process of refurbishment and strengthening that unequivocally positions it as one of the strongest navies in the Middle East region. The navy itself operates in two main sectors: the Mediterranean Sea and the Red Sea. In the Red Sea sector, it faces several challenges that can affect Egypt, and especially impact navigation from and to

69 Italy to 'block and seize' refugee rescue ship, *Aljazeera*, May 10, 2019. <https://www.aljazeera.com/news/2019/05/italy-seize-charity-ship-rescued-migrants-190510111404317.html>

70 Jacopov Barigazzi, Operation Sophia to be closed down and replaced new Libya naval mission will have a different name and area of operation, *Politics*, February 17, 2020. <https://www.politico.eu/article/operation-sophia-to-be-closed-down-and-replaced>

71 NATO Secretary General discusses eastern Mediterranean, Libya with Foreign Minister of Turkey, NATO News, 19 August 2020. https://www.nato.int/cps/en/natohq/news_177523.htm

the Far East, which occurs at one of the most sensitive chokepoints—the Suez Canal.

2. The purchase of four German submarines (without going into the process itself and the political aspects) illuminated just one angle of the strengthening process of the Egyptian navy and the defense security forces' position relative to this strengthening and maintaining the qualitative edge that Israel needs to preserve in the Middle East.

The events that were added in 2020 and influenced the activities of the Egyptian navy were, first and foremost, the deterioration that began in Libya's domestic affairs. In addition, there has also been the Turkish involvement, which led to Egypt being concerned that Turkey, which has ever since the ousting of Morsi been in a political conflict with Egypt, may under circumstances place Turkish forces or proxies on its western border with Egypt, and endanger the security of the Egyptian government.

Against the background of the agreement signed at the end of 2019 between Turkey and Libya on the division of their EEZs, Greece and Egypt declared and demarcated their EEZs, which act underscores, in practice, their joint border, and challenges Turkey's and Libya's aspirations to search for gas in the area, and their joint maritime agreement. According to the treaty signed by them, Egypt and Greece are exclusively allowed to search for resources existing in the area, including petroleum and gas reservoirs.

Against the background of the tension between Turkey and Egypt and the enmity that emerged between the French and Turkish navies (as described above), the Egyptian and French naval forces conducted a joint exercise at the beginning of July 2020 in the eastern Mediterranean Sea. Two stealth Aquitaine class frigates (built both for the Egyptian navy and for the French navy) participated in the exercise. They focused on methods for organizing collaboration toward implementation of combat tasks against adversarial naval formations as well as surface and air targets. The Egyptian army spokesman noted that "the exercises are intended to increase the cooperation between the Egyptian and French armed forces in a way that will contribute to improving their abilities and collaborative experience as well as safeguard security and stability in the Mediterranean Sea".⁷² In August 2020, the Egyptian and Greek navies held bilateral exercises in the Mediterranean Sea after a visit by Greek ships to Alexandria port. The Greek navy included MEKO class frigates

72 Sarah Mukabana Egypt, France conduct joint naval drills in Mediterranean SeaCGTN Africa, July 26, 2020. <https://africa.cgtn.com/2020/07/26/egypt-france-conduct-joint-naval-drills-in-mediterranean-sea>

and the Egyptian navy included Oliver Hazard Perry class frigates. The exercises were held as part of the general command plan of the Egyptian armed forces to raise military cooperation with all friendly states in the region. There is no doubt that the tension that arose in the Mediterranean Sea in the summer of 2020 was exploited to conduct joint naval exercises and visits to ports as tools in the toolbox of the state levels of different countries in the region.



Figure 9: Two Aquitaine class frigates during the joint French–Egyptian exercise, July 2020, in the Mediterranean Sea

Additionally, Egyptian army forces, at the beginning of July 2020, held a wide-ranging amphibious landing exercise near the border with Libya. Both the Egyptian navy and air force participated in the exercise, called HASM-2020. Local journalists and security correspondents also joined the forces. The forces used the Mistral class Abdul Nasser helicopter carrier, supplied by the French to Egypt, Gowind corvettes, Perry frigates and a type 209 conventional attack submarine.⁷³

In the Red Sea, at the beginning of 2020, the Egyptian navy inaugurated the new port of Barnice, located near the border between Egypt and Sudan, and that will be the base used as the supply center for the Egyptian southern navy. In the state ceremony that was held with the participation of President A-Sisi and the senior army command, the speakers noted that the new base positions the Egyptian navy close to the southern entrance of the Red Sea, the Bab al-Mandab Strait and Yemen. The base also moves the Egyptian navy closer to the Horn of Africa, an important place for Egypt's and the Suez Canal's national security as well as protecting Egyptian interests in the Red Sea, and supports the coalition headed by Saudi Arabia, which

73 Dorian Archus, Egypt conducts large scale exercise HASM-2020, Naval News, July 19, 2020. <https://navalnews.net/egypt-conducts-large-scale-exercise-hasm-2020>

is fighting the Houthi rebels in Yemen who are supported by Iran. Egypt President A-Sisi, who dedicated the new base, was also the person who, in 2017, opened the naval headquarters in the same place.⁷⁴

Against the background of the rising tension in the southern Red Sea, in 2020 the Egyptian navy held several joint exercises with friendly navies in the Red Sea region: the Egyptian frigate Suez and the Spanish frigate Santa Maria participated in wargames held at the Barnice army base in the southern Red Sea. The joint exercise demonstrated high coping and combat ability as well as the readiness of the Egyptian naval forces. Drills for defending against air strikes, for strengthening naval attack deterrence and supply and fueling at sea were held.

On January 22, 2020, the Morgen 16 naval exercise was held in the Red Sea in which the Royal Saudi navy and Egyptian naval forces participated. The drills continued for several days and included a series of joint drills between the two countries that were wide-ranging and strengthened the maritime security measures in the region.

Undoubtedly, the Egyptian navy recognizes the strategic importance of the Red Sea for Egypt, understands that terror and pirate attacks and the sense of insecurity that permeates the region, especially in the area of Bab al-Mandab Strait, may significantly affect Egypt's economy and security (in light of the large part the tariffs paid for passing through the Suez Canal comprise of the Egyptian government's income), and, accordingly, are prepared to safeguard navigation in the region using its own forces, or in partnership with friendly navies.

There is no doubt that the Egyptian navy has been transformed into one of the dominant navies in terms of its operations and order of force both in the Mediterranean Sea and the Red Sea.

Changes in the security policies and resource allocation to these in selected countries

Security expenditures – general trends

The total amount of global military expenditure in 2019 was 1,917 billion dollars, according to the new data from the Stockholm International Peace Research Institute (SIPRI). The total amount of global military expenditure in 2019 is 3.6% greater than in 2018, and the annual increase was the greatest since 2010. The five states that had

74 Hassan Abdel Zaher, New naval base boosts Egypt's presence in the Red Sea, The Arab Weekly, January 19, 2020. <https://thearabweekly.com/new-naval-base-boosts-egypts-presence-red-sea>

the largest military expenditure in 2019, which constitutes 62% of the total amount, were the US, China, India, Russia and Saudi Arabia. This was the first time that two Asian states (China and India) appear among the three countries with the largest military budget.

The 2019 global military expenditure represented 2.2% of the global gross domestic product (i.e., the global product), equal to about 249 dollars per person. "Global military expenditure was 7.2 per cent higher in 2019 than it was in 2010, showing a trend that military spending growth has accelerated in recent years,' says Dr Nan Tian, SIPRI Researcher. 'This is the highest level of spending since the 2008 global financial crisis...'"⁷⁵ Figure 10 demonstrates the progress of security budgets since the beginning of the 1990s, segmented by area.

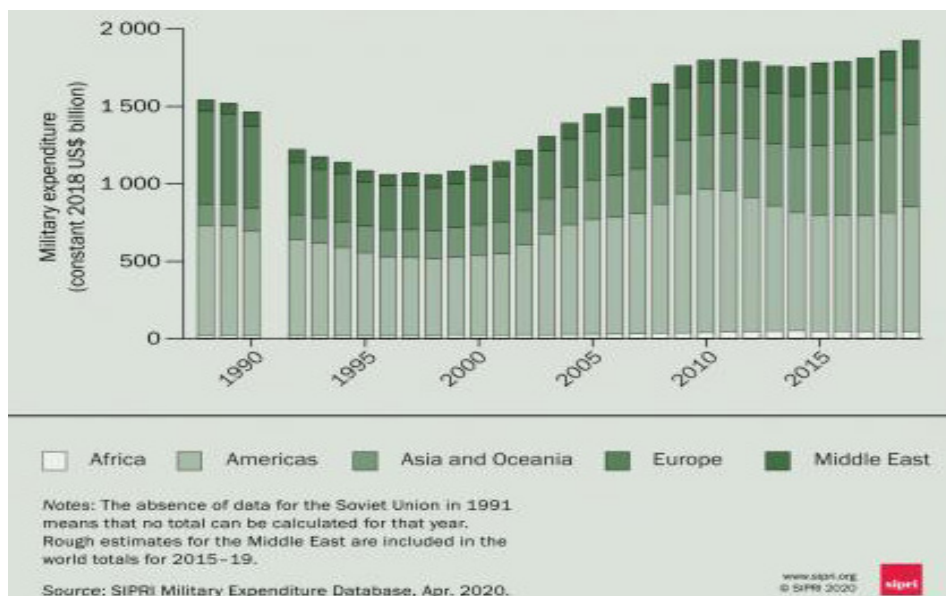


Figure 10: Global military expenditure by region for the years 1998–2019

The **US** military expenditure grew 5.3% to a total of 732 billion dollars in 2019, and constituted 38% of global military expenditure. The increase in US expenditure in 2019 alone was equal to Germany's entire military expenditure for the whole year.

75 Global military expenditure sees largest annual increase in a decade—says SIPRI—reaching \$1917 billion in 2019, Stockholm International Peace Research Institute (SIPRI), April 27, 2020. <https://www.sipri.org/media/press-release/2020/global-military-expenditure-sees-largest-annual-increase-decade-says-sipri-reaching-1917-billion>

The increase reflects the change in US policy in everything related to competition between superpowers.

Table 5: Data for the ten countries with the highest military expenditure globally

Rank	Country	Military expenditure, 2019 (US\$ b.)	Change in military expenditure (%)		Military expenditure as a share of GDP (%)		Share of world total, 2019 (%)	
			2018–19	2010–19	2019	2010		
2019	2018							
1	1	United States	732	5.3	-15	3.4	4.9	38
2	2	China	(261)	5.1	85	(1.9)	(1.9)	(14)
3	4	India	71.1	6.8	37	2.4	2.7	3.4
4	5	Russia	65.1	4.5	30	3.9	3.6	3.4
5	3	Saudi Arabia	(61.9)	-16	14	(8.0)	8.6	(3.2)
6	6	France	50.1	1.6	3.5	1.9	2.0	2.6
7	9	Germany	49.3	10	15	1.3	1.3	2.6
8	7	United Kingdom	48.7	0.0	-15	1.7	2.4	2.5
9	8	Japan	47.6	-0.1	2.0	0.9	1.0	2.5
10	10	South Korea	43.9	7.5	36	2.7	2.5	2.3

() = estimated figure; GDP = gross domestic product.

Note: Figures and percentage shares may not add up to stated totals or subtotals due to the conventions of rounding.

China and **India** lead in military expenditure in Asia. China's military expenditure reached 216 billion dollars in 2019, an increase of 5.1% compared to 2018, whereas India increased its defense budget by 6.8% to 71.1 billion dollars. The tension and antagonism among India, Pakistan and China were prime motivators for India's large military expenditure.

In east Asia, in addition to China and Pakistan, **Japan** (47.6 billion dollars) and **South Korea** (43.9 billion dollars) had the highest military expenditure in Asia and Oceania. The military expenditure in this region has risen steadily since 1989.

Germany led Europe in growth of military expenditure, which grew by 10% in 2019, totaling 49.3 billion dollars. This increase is the most significant among the 15 leading countries in military expenditure in 2019. The increase in German military expenditure may be partially explained by the concept of an increased threat from Russia, common to many NATO members. The military expenditure of **France** and **Britain** remained relatively stable.

There was a sharp increase in military expenditure among **NATO members in central Europe**: for example, Bulgaria's expenditure grew by 127%, primarily because of

payments for new warplanes, and Rumania by 17%. The total amount of expenditure by all 29 NATO member states was 1,035 billion dollars in 2019.

In 2019, **Russia** had the fourth largest military expenditure in the world. We note that in recent years, Russia developed military modernization programs and adopted a more assertive foreign policy. Russia's military expenditure grew significantly in the past two decades. In realistic terms, we are talking about 30% between 2010 and 2019, and in nominal terms, 175% (Figure 11). Even though Russia's military expenditure decreased in 2017 and 2018, it grew again in 2019, reaching 65.1 billion dollars. The military burden on Russia's economy, that is, military expenditure as part of its gross domestic product, was 3.9% in 2019. This was higher than in 2010, but much lower than the peak, which was 5.5% in 2016.

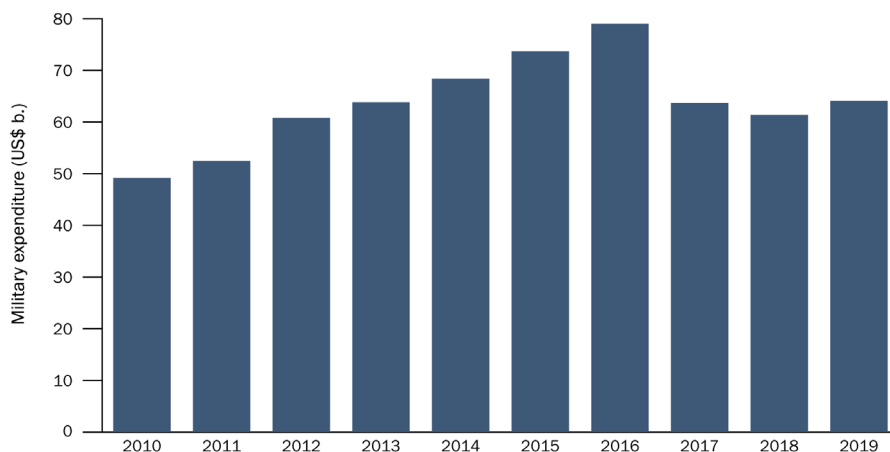


Figure 1. Russian military expenditure, 2010–19

Notes: Figures are in US\$ b. at constant (2018) prices and exchange rates.

Figures and percentage shares may not add up to stated totals or subtotals due to the conventions of rounding.

Figure 11. Russian military expenditure, 2010–2019⁷⁶

In its multiyear military modernization program, Russia allocates high priority to certain parts of its armed forces. For instance, its nuclear program has received focused priority since the beginning of the 2000s, and its delivery systems, and especially its naval arm, underwent broad modernization. In addition to upgrading these systems' equipment, they also received broader media exposure.

⁷⁶ Siemon T. Wezeman, Russia's military spending: Frequently asked questions, *Stockholm International Peace Research Institute (SIPRI)*, April 27, 2020. <https://www.sipri.org/commentary/topical-background/2020/russias-military-spending-frequently-asked-questions>

SIPRI noted that the Russian media and the official media tend to reflect the image of progress in modernization of the armed forces in every aspect of military abilities. This is extremely evident in the official information related to integration of new equipment. Nevertheless, the Swedish institute noted that a **gap exists between the levels of modernization** that were declared and what is actually seen by independent observers. Many large armament programs never reached the targets for which they were budgeted, and Russia has delayed or reduced purchase plans.⁷⁷ These programs may still be changed, especially in relation to the recession that is predicted will follow the COVID pandemic. Following the publication of the programs for 2020–2022 at the end of 2019, the price of petroleum entered a period of fluctuation and volatility. These economic factors are likely to limit Russia's future military expenditure.

77 Ibid.

Geography and Strategy in the Red Sea – The Current Situation

Benni Ben Ari and Moshe Terdiman

General

The Red Sea is an intercontinental sea. It is the northwestern extension of the Indian Ocean, which is bordered by the western coast of the Arabian Peninsula and the eastern coast of northeastern Africa. At its northern extreme, the Red Sea splits into two long and narrow gulfs. The eastern one is the Gulf of Aqaba (gulf of Eilat) and the western one is the Gulf of Suez which connects the Indian Ocean to the Mediterranean by way of the Suez Canal. On the western shores of the Red Sea are Egypt, Sudan and Eritrea, with Djibouti at its southern tip. On its eastern shores are Saudi Arabia and Yemen and at the northern tip, on the shores of the Gulf of Aqaba, are Jordan and Israel.

The Red Sea has been an important sea route since the dawn of history, primarily for the countries on its shores and for the adjacent regions. It was already a major trade route between Europe and Asia in the time of the Roman Empire (including a land segment by way of Egypt), used by Arab, Indian and even Jewish traders.¹ The Red Sea has been serving as a major route for pilgrims traveling to Mecca. The Western powers had strategic and economic interests in the Red Sea only after the opening of the Suez Canal in 1869, which significantly shortened the route between Europe and Asia.

From the middle of the 19th century until the beginning of the Second World War, only three powers had a significant presence in the Red Sea and its environs: Britain, France and Italy, and they guaranteed economic and military stability. Even after oil began to flow through the Persian Gulf and the trade routes to Asia, there was no increase in strategic interest in the Red Sea, and the blocking of the Suez Canal from 1967 to 1975 did not constitute an insurmountable problem since oil tankers were able to circumvent it by going around southern Africa. Only France maintained a presence in the region, a force that consisted of several thousand troops in Djibouti. The US was primarily concerned with its interests in the Persian Gulf and did not adopt a policy toward the Red Sea nor did it maintain any military forces there; rather it relied primarily on Egypt and Saudi Arabia. Since the mid-1970s, only Israel, Egypt and Saudi Arabia have maintained a military presence in the northern Red Sea while

1 For further details on trade in the Red Sea, see Aryeh Roneh, *Shipping in the Writings of the Cairo Geniza*, Chaikin Chair for Geostrategy and the Maritime Policy and Strategy Research Center, (September 2020), Haifa University. [Hebrew]

forces of the French navy have protected the trade routes in the southern section, in spite of the—mostly land-based—local conflicts (between Eritrea and Ethiopia, Somalia and Ethiopia, Somalia and Djibouti and Eritrea and Sudan, as well as the civil war in Yemen). Apart from events connected to the Israeli-Arab conflict, maritime traffic in the Red Sea has not been disrupted since the early 1990s, although the Somali pirates started their attacks against international shipping in the Gulf of Aden and the Arabian Sea. When the level of maritime piracy increased to a point that it threatened sea routes to and from the Red Sea, foreign naval forces were sent to the region, primarily to the Gulf of Aden, the Horn of Africa and the coast of Somalia. Since the early 2000s, a number of joint naval task forces have been established (Combined Maritime Forces – CMF) with the participation of 33 countries (some of which operate as part of the task force and others that operate independently), which protect the routes. This has significantly reduced piracy activity, to the point that it was almost eliminated completely in 2017.

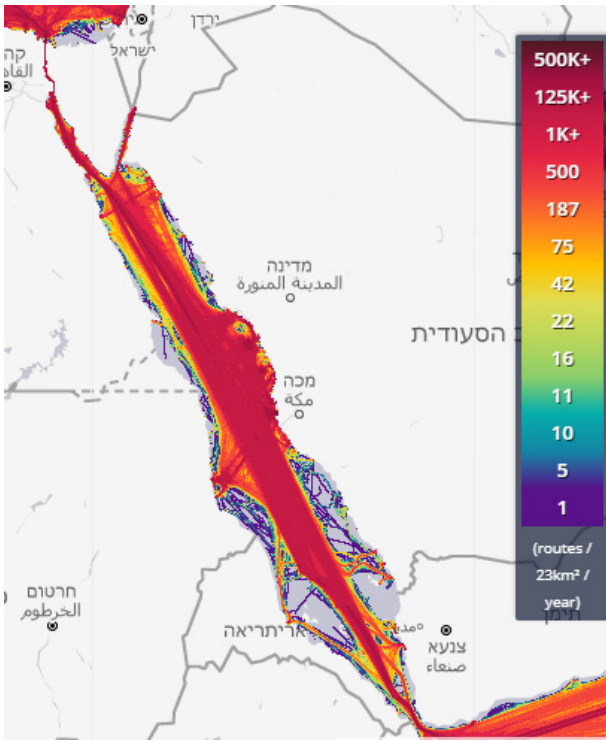


Figure 1: The density of traffic in the Red Sea (aggregate data for 2019). Tens of thousands of ships use the main shipping lanes in the Red Sea²

2 Processing of data retrieved from www.marinetraffic.com.

Chokepoints and their importance

Apart from the oil, gas and mineral deposits, the main strategic factor which contributes to the Red Sea's importance is that it is a shipping lane that connects Europe and Asia, which explains the importance of its chokepoints. There are three maritime chokepoints in the Red Sea, one of which connects the Red Sea to the Suez Canal (the Strait of Jubal and the Strait of Milan), another one connects the Red Sea to the ports of Eilat and Aqaba (the Straits of Tiran) and have international significance and a third—the Bab al-Mandeb Straits — which connects the Red Sea to the Gulf of Aden and the Indian Ocean .

Bab el Mandeb

Bab el Mandeb is a strait that connects the Gulf of Aden to the Red Sea and it is one of the most important strategic chokepoints in the world. It is 20 miles wide and contains a number of islands. The Perim island divides the strait into two routes: the eastern one which is small and narrow with a width of about 2 miles and a depth of 30 meters and the western one which is larger and wider, with a width of about 16 miles and a depth of 300 meters. More than 60 ships pass through the strait each day. It is considered to be a dangerous shipping route which limits the traffic of ships, and in particular tankers, to two lanes whose width is only two miles – one for entry and one for exit from the strait. In addition to the geographic constraints, the straits are located in a politically unstable region where there are threats and challenges to the freedom and security of shipping.



Figure 2: The Bab el Mandeb Strait between Ras Menheli in Yemen and Ras Siyyan in Djibouti³

3 https://commons.wikimedia.org/wiki/File:Map_of_Bab-el-Mandeb.png

The factors that have made the Bab el Mandeb Strait dangerous to shipping originate in the political instability in some of the neighboring countries. The war in Yemen between Houthi rebels and the regime has resulted in rebel attacks on shipping and the Houthis’ threat to close the strait for Saudi and UAE vessels. The increasing pirate activity in the areas near Somalia and the Horn of Africa has also threatened the international shipping. However, thanks to the activity of the CMF in recent years, the scale of pirate attacks on ships in the region has been reduced to only a few each year.⁴ Also Iran’s policy, which supports the Houthi rebels against Saudi Arabia, as well as the friction between it and the US and the Somali pirates’ activity- all has led to the increased presence of Iranian ships in the area of the strait with the goal of demonstrating presence and project power.

Straits of Jubal and Milan

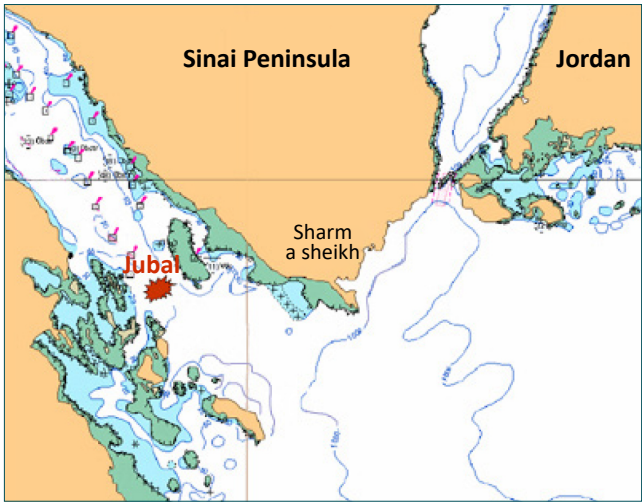


Figure 3: The Straits of Jubal and Milan at the entrance to the Gulf of Suez⁵

The Strait of Jubal, which connects the Red Sea to the Gulf of Suez, is only six miles wide at its narrowest point, and it is surrounded by a huge number of sand bars and shoals, as well as being the location of a significant number of ship wrecks. The depth in the center of the strait is about 80 meters and in its southern portion is 500–700 meters; however, it is filled with coral reefs and, as a result, even in the areas of deep water where the shipping lanes are passing, there are sand bars at

4 ICC International Maritime Bureau; Piracy and armed robbery against ships report, (2020). https://www.icc-ccs.org/reports/2019_Annual_Piracy_Report.pdf
5 <http://www.amutayam.org.il/?CategoryID=616&ArticleID=1469>

shallow depthsthat constitute a danger to ships. To the east of the Strait of Jubal is the Strait of Milan which is even shallower and narrower and is not used for regular shipping traffic. It does allow for the passage of ships up to a certain size but requires precise and careful navigation.

The Straits of Tiran and the islands of Tiran and Sanafir

These two islands are located at the entrance to the Strait of Tiran between the Red Sea and the Gulf of Aqaba. The islands are sandy and barren and sit atop coral reefs. Between the island of Tiran and the Egyptian coast are two shipping lanes that are separated by coral reefs. The eastern lane, called the Grafton Passage, is less than a kilometer wide with a depth of about 80 meters and it is used for northbound shipping. The western lane, called the Enterprise Passage, is about 1200 meters wide and is used for southbound shipping. The depth of the strait ranges between about 250 meters in the western passage and about 70 meters in the eastern passage and its overall width at its narrowest point is about 4 km.

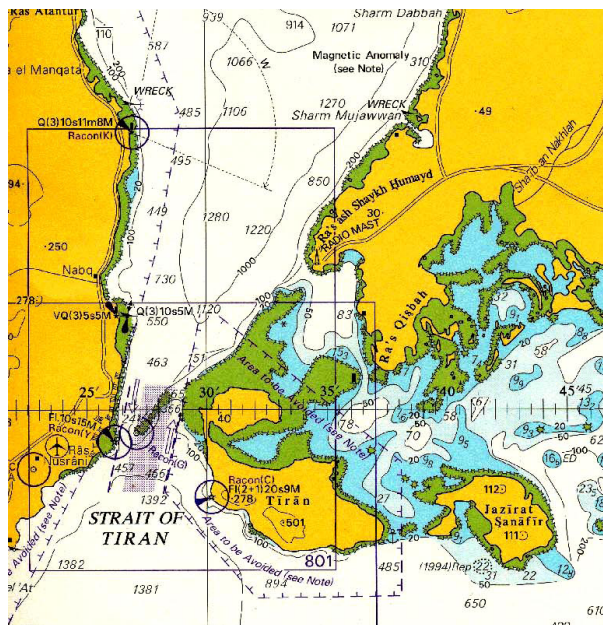


Figure 4: Tiran and Sanafir at the entrance to the Gulf of Aqaba⁶

6 https://he.wikipedia.org/wiki/%D7%9E%D7%A6%D7%A8%D7%99_%D7%98%D7%99%D7%A8%D7%90%D7%9F; <https://www.electronicpoint.com/forums/threads/admiralty-chart-with-led-sequences.252299>

The islands were ceded by Saudi Arabia to Egypt in 1949 (after the capture of Umm Rashrash [Eilat] by the IDF) and were returned to Saudi Arabia in 2017 with the consent of Israel (since they were part of the Israel- Egypt peace accord signed in 1979).

Only in the last three decades has the Red Sea and its vicinity become a focus of geopolitical and geostrategic conflict, while at the same time the economic activity of the countries in the region—most of which are poor and undeveloped—has flourished.

The Red Sea – both a source and a conduit for energy

The main route for the transport of oil and gas from the Persian Gulf to Europe is by way of the Suez Canal and the SUMED oil pipeline in Egypt.⁷ The oil travels through the Bab el Mandeb Strait, through the Red Sea and then by way of the Strait of Jubal to the Gulf of Suez. Much smaller quantities travel through the Straits of Tiran in the direction of Jordan and Israel. At the same time, oil and gas is transported from the fields in the Red Sea and from the Saudi East-West Pipeline northward to the Suez Canal and southward to Asia, primarily to India, Singapore and China. In 2018, 6.2 million barrels of crude oil and oil distillates passed through the strait each day in the direction of Europe, the US and Asia, accounting for 9 percent of all oil transportation by sea (Figures 5 and 6).⁸

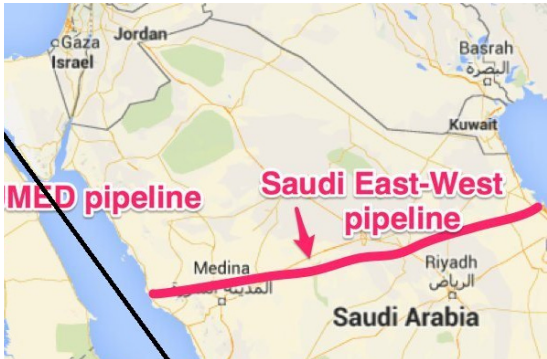


Figure 5: Oil pipelines in the Red Sea region⁹

7 The SUMED oil pipeline is also known as the Suez Mediterranean pipeline. It is used for the transport of crude oil from the terminal at Ain Sukhna on the coast of the Red Sea to Alexandria on the coast of the Mediterranean. The pipeline’s aim is to serve as an alternative for oil tankers travelling from the Persian Gulf to the Suez Canal. It is 320 km long and has been active since 1977.

8 <https://safety4sea.com/bab-el-mandeb-strait-crucial-for-oil-and-natural-gas-shipments>

9 <https://twitter.com/tankertrackers/status/982167978593599489?lang=da>

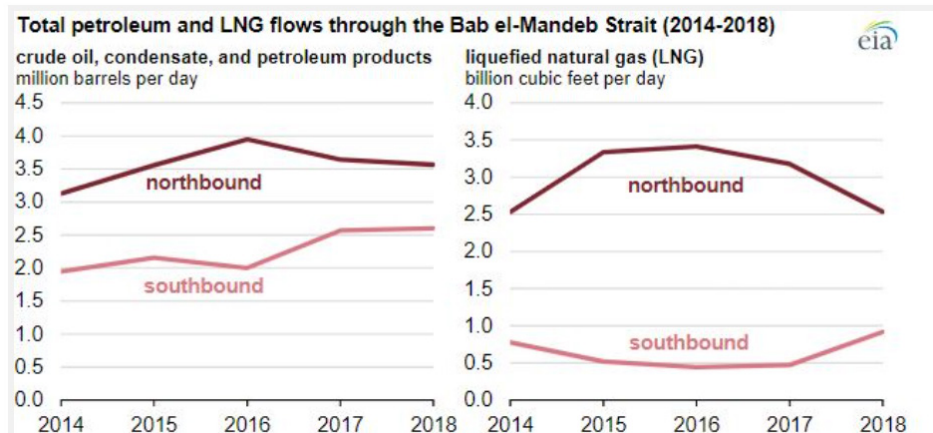


Figure 6: Traffic of oil and gas through the Bab el Mandeb Strait¹⁰

Since the Red Sea is a primary route for the transport of global oil and thanks to the normalization agreements (the Abraham Accords) between Israel and the UAE and Bahrain, it is now possible to use the oil pipeline from Eilat to Ashkelon in order to transport oil from the UAE by a maritime route through the Red Sea and from Ashkelon to the Mediterranean. .

In parallel to the geopolitical developments that have been taking place during the last two years thanks to the discovery of large amounts of natural gas in Saudi Arabia's economic waters, the Red Sea has also become a source of energy in its own right and has not only served as a conduit for energy transportation. On March 10th 2019, the Egyptian Ministry of Petroleum declared a tender to receive price quotes from international companies for oil and gas exploration in ten maritime blocs in the Red Sea, a move that enraged Sudan, since some of the exploration will take place in the economic waters of the Halaib Triangle¹¹, an area that is under Egyptian control but is contested by Sudan.

Egypt suffers directly from the threats in the Bab el Mandeb Strait due to both the shipping traffic through the Suez Canal and the supply of oil to the SUMED pipeline.

10 "The Bab el-Mandeb Strait is a strategic route for oil and natural gas shipments," US Energy Information Administration (27 August 2019).
<https://www.eia.gov/todayinenergy/detail.php?id=41073#>

11 The Halaib triangle is an area on the border between Egypt and Sudan on the coast of the Red Sea. The sovereignty over the area has been contested by the two countries since Sudan's independence in 1956. Starting in the mid-1990s, Egypt has had de facto control of the area. It has issued a tender for oil exploration in the triangle's waters.

In addition, the conflict between Egypt and Sudan has escalated in view of the warming of relations between Sudan and Turkey following the leasing of the Suakin port in Sudan (which is located on an island very close to shore). Turkey leased the port for 99 years on the basis of it being an Ottoman fortification in the past.

This tension passed quickly and on December 29th 2019 Tarek al Mulla, the Egyptian Petroleum Minister, declared that Chevron and the joint Shell - Mubadala consortium from the UAE had won the tender. This helps explain the opening of the Berenice Military Base (Egypt) in January 2020 which is meant to send a clear message to Sudan and to protect the natural resources located in the economic waters of Southern Egypt.

It is still too early to tell whether this change, which symbolizes the entry of the Red Sea into the global energy market, will mean greater importance for the Red Sea or perhaps will create a common energy market between the Eastern Mediterranean and the Red Sea, in which Egypt will have the leading role. It is also too early to know whether this change will contribute to the prosperity of the countries in the Red Sea basin or whether it will constitute a source of conflict and struggles for power. Only time will tell.

Blockading and mining of the straits in the Red Sea

The blockading of the Red Sea will prevent the passage of tankers and cargo ships coming from the Persian Gulf or from the Indian Ocean on their way to the Mediterranean Sea and will make it necessary for them to sail around Africa, a much longer and more expensive trip. It will also prevent the passage of ships from the Red Sea to the Indian Ocean, on their way to Asia and Africa. Since all of the straits in the Red Sea are maritime chokepoints and have geostrategic importance, regional players have exploited the possibility of blocking ship traffic in order to achieve political or strategic goals, in order to impose an economic blockade and as a basis for political negotiations following acts of terror.

The blockading of the Straits of Tiran by the Egyptians in 1956 and 1967 led to Operation 'Kadesh' and the 'Six Day War', respectively. In both of these episodes, the islands of Tiran and Sanafir were captured by Israel. In 2017, sovereignty over the islands was passed back to Saudi Arabia by Egypt.

The Suez Canal was nationalized by Egypt in 1956, which then prohibited the passage of Israeli ships through it. At the end of the Six Day War (1967), the Canal was blocked

to shipping until 1975¹², when it was cleaned and the debris that had blocked the passage of ships was cleared. After the revolution in Egypt in 2011, a number of incidents were reported in which ISIS linked terrorist organizations threatened to disrupt the traffic of ships through the canal and made attempts to do so.

The Strait of Jubal was mined by the Egyptians in the Yom Kippur War (October 1973) and the Siris oil tanker, which was on its way from Eilat to Abu Rodeis, was sunk as a result. The crew was rescued by Israel Air Force helicopters. A few weeks later, the Sirena tanker was damaged by a mine but managed to continue on to Eilat.

A terror attack was carried out in the Bab el Mandeb Strait on June 11th 1971 by the Popular Front for the Liberation of Palestine (PFLP) against the Coral Sea, an Israeli tanker that was flying a Liberian flag and was on its way to Eilat. The tanker was hit by several RPGs rockets but continued to sail.

Egypt asked Southern Yemen to blockade the straits to Israeli ships during the Yom Kippur War. On October 7th 1973; it was reported that three torpedoes were fired at a tanker called the Samson but missed.

Yemen and the Houthis

The countries bordering the Red Sea are all Muslim, apart from Eritrea and Israel. But this fact has not prevented political and military conflicts over sovereignty and energy sources.

The civil war in Yemen (which began in 2015) made it possible for the Houthi rebels (the Ansar Allah movement) to threaten and carry out various attacks against international shipping through the Bab el Mandeb Strait starting in 2015. The Houthis are supported by Iran which supplies them with modern weaponry, including coast-to-sea missiles, sea mines and remote-controlled explosive boats. They are able to threaten shipping because they control the whole southwestern and western side of Yemen up to the border with Saudi Arabia (including the capital Sana'a) and also the Red Sea coast. Commercial ships, tankers and fishing vessels have been damaged by floating mines (of which there are hundreds) that were laid by the Houthis in the vicinity of the Bab al-Mandeb Strait and the Yemeni coast.

The Houthi rebels held the port city of Al Hudaydah, which is located on the coast of the Red Sea and is where their naval force is stationed. Their vessels have operated

12 The blockade followed the capture of the Sinai Peninsula by Israel in the Six Day War and continued until the signing of the ceasefire agreement between Israel and Egypt following the Yom Kippur War (1974).

against the navies of Saudi Arabia, Egypt and even the US since 2015. The rebels' naval forces have carried out numerous successful operations against Saudi and Egyptian vessels in the Red Sea. Among others, they fired missiles at vessels of the Egyptian, Saudi and American navies; they have dispatched unmanned suicide boats; and they have used naval commando forces in various missions, including the capture of autonomous underwater vessels belonging to the US Navy.¹³

In January 2017, the naval forces of a coalition led by Saudi Arabia initiated Operation 'Golden Arrow' in order to recapture the coastal strip under the control of the rebels. Ships of the Saudi navy located and evacuated sea mines, both in the approaches to the Yemenite ports and along the international shipping lanes.

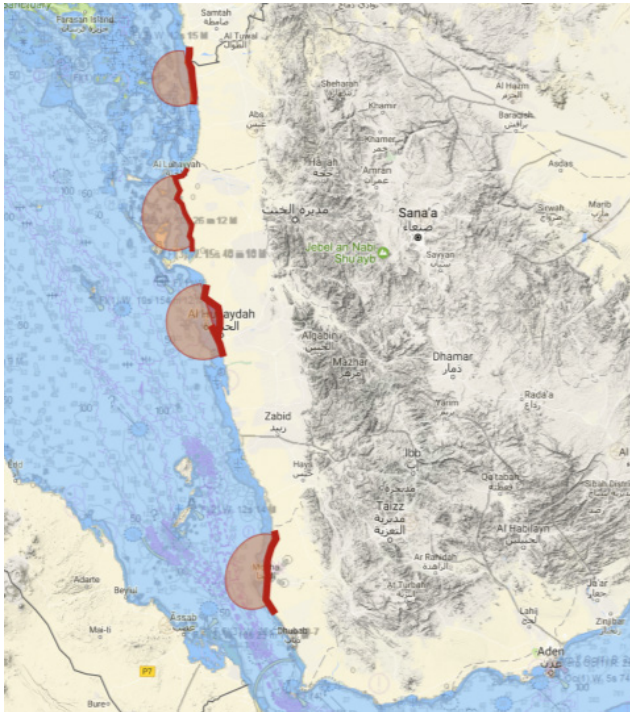


Figure 7: Areas of the Yemenite coast with a high risk of mines as of May 2017¹⁴

13 For further details on the maritime aspects of the Houthi fighting, see Yoram Laks, "Iran – the Maritime Involvement and Influence in the Red Sea and the Eastern Mediterranean Sea," Maritime Strategic Evaluation for Israel 2016, Shaul Horev and Ehud Goren (eds.), p. 95–108, Haifa University https://hms.haifa.ac.il/images/reports/EN_Report201617.pdf

14 UK P&I, Special Advisory: Naval mines and MBIEDs off Yemen (19 May 2017). https://www.ukpandi.com/-/media/files/imports/13108/bulletins/28037---170519_nya_m_special_advisory_yemen.pdf

The war in Yemen, which has been raging for more than five years, has seriously reduced the port activity in Yemen. A number of ports that had ceased functioning have now restored their operations and in particular the largest port in the country located at the city of Aden. Nonetheless, the output of the ports is low due to, among other things, the fear among international companies of working with the ports in Yemen.

The recent attacks against ships in the Gulf of Aden and in the Bab el Mandeb Strait have emphasized the risks in navigating through these waters. Maritime alerts have been issued by various organizations in view of the numerous risks and the large swath of the ocean that is under threat. The CMF has established a Maritime Security Transit Corridor (MSTC)¹⁵ in which its ships patrol, provide protection and search for and remove mines.



Figure 8: The Maritime Security Transit Corridor in the Bab el Mandeb Strait and in the southern Red Sea

Geopolitics in the Red Sea and the Horn of Africa

There are a number of basic facts underlying the geopolitical developments in the Red Sea in recent years. From a geopolitical perspective, and apart from the countries along the coast of the Red Sea, the Red Sea basin includes four additional countries:

15 COMBINED MARITIME FORCES (CMF), Maritime Security Transit Corridor (MSTC). <https://combinedmaritimeforces.com/maritime-security-transit-corridor-mstc>

Eritrea and South Sudan, which do not have access to the sea, but are dependent on the Red Sea for their import and export needs, and Somalia and Somaliland, which are located on the coast of the Gulf of Aden at the entrance to the Red Sea.

Throughout history the Red Sea has served as an essential trade route between Europe and the West on the one hand and Asia and Africa on the other. As a result, the countries located at the choke points (the Suez Canal and the Bab el Mandeb Strait), i.e. Egypt, Yemen and Djibouti, have great strategic importance. In this context, it is important to recall that geographically the Red Sea is an integral part of three different geographical regions, which meet at the Bab el Mandeb Strait: The Middle East, Africa and the Indian Ocean basin.

During the past two decades, freedom of navigation in the Red Sea has been under threat from three sources that originate from Yemen and Somalia, both of which are failed states without a stable government.

The first is the rise of al Qaeda and ISIS in Yemen and Somalia. The al Qaeda organization in the Arabian Peninsula has carried out two maritime terror attacks: on October 12th 2000 against the USS Cole while it was anchored in the port of Aden, which killed 17 American sailors and wounded 39; and on October 6th 2002 against the Limburg, a French oil tanker, in which one crew member was killed and 26 wounded.

The second source is the Somali pirates who operate along the coast of Somalia and have disrupted trade in the Gulf of Aden and in the Indian Ocean, starting in the latter half of the 2000s. During this period, Somali pirates have attacked hundreds of vessels, have kidnapped dozens of vessels and have taken hundreds of hostages. However, as a result of the establishment of an international force by the EU and an international maritime policing force, the number of attacks by Somali pirates has been on the decline since 2010, although in recent years they have begun to attack ships in the Gulf of Aden and the Indian Ocean with renewed vigor.

The third source is the civil war in Yemen, which began five years ago. A coalition of states under the leadership of Saudi Arabia initiated Operation 'Decisive Storm', with the goal of expelling the Houthis from Sana'a, the capital of Yemen, which they captured earlier that year, and restoring control of the country to the government of Yemen headed by Abdrabbuh Mansur Hadi. Countries located on the coast of the Red Sea are involved in this war: Sudan, Egypt and Jordan are directly involved; Eritrea, Djibouti and Somalia are involved indirectly by providing the coalition with access to their territorial waters, their air space and the bases in their territory. The Houthis have attacked coalition ships using explosive boats, sea mines and anti-ship

missiles, as well as US Navy ships because they provide support to the coalition forces. Subsequently, they also attacked commercial vessels and threatened to block international passage through the Red Sea. As a result, the Houthis currently constitute a very real threat to freedom of navigation in the Red Sea and the international trade that passes through it.

The island of Socotra is located strategically at the approaches to the Red Sea. The group of islands is 'on paper' under the sovereignty of Yemen but since April 2018 the military forces of the UAE have controlled the island, including its port and airport, and have provided humanitarian aid to its inhabitants. The UAE has essentially annexed the island despite the protests of Yemen. In February 2020, units of the Yemenite army rebelled joined the forces supported by the UAE. Administrative control was restored to Yemen in May 2018 despite the flag of the UAE flying over the government buildings in Hadibu, the capital.¹⁶ At the beginning of September 2020, Yemen claimed that the UAE is trying to convert the island into a military base and according to foreign sources it may be serving as a base for Israeli Intelligence in order to gather information in the region, particularly the Bab el Mandeb Strait and the Gulf of Aden, and to track the Iranian navy in these areas.¹⁷

The Federal Republic of Somalia is a state in eastern Africa whose regime suffers from a lack of stability and is unable to impose its will on the various forces in the country. Actual control and authority in the country is in the hands of autonomous entities, such as Puntland or an independent entity that is not recognized internationally, namely Somaliland, as well as rival groups and factions that lead the forces of resistance and opposition.

16 Socotra is under the control of the Southern Transitional Council which broke off from the government of Yemen. It is recognized by the West and the Council has won the support of the UAE. Therefore, the UAE still has a military presence in Socotra.

17 Yemen Ready to Counter Israeli Military Presence on Occupied Islands: Expert, Tasnim News Agency (19 September 2020). <https://bit.ly/34LrUbw>; UAE, Saudi Arabia accused of allowing Israel onto Yemen's Socotra, TRTWorld (2 September 2020). <https://bit.ly/381WQ9t>; UAE, Saudi Arabia let Israel send intelligence agents into Yemen: reports, TheNewsArab (2 September 2020). <https://bit.ly/3ee5SRS>; "Israel will establish an Intelligence base on the Island of Socotra together with the UAE," nziv (August 26th 2020). <https://nziv.net/51459> [Hebrew]



Figure 9: The island of Socotra at the approaches to the Red Sea¹⁸



Figure 10: The new states in Somalia¹⁹

Processes of peace, reconciliation and normalization in the Horn of Africa

The need to ensure freedom of navigation through the Red Sea and to eliminate the threats to it, forms the background to the struggles over hegemony among the global powers and the regional powers. These struggles—or more correctly the rare convergence of interests between the global powers, the regional powers and the leaders of Eritrea and Ethiopia, which have exploited these struggles in order to further achieve their goals and to promote their status and the status of their countries in the international arena—have directly contributed to the processes of reconciliation and normalization that have characterized the countries of the Horn of Africa during the past two years.

During the first half of 2018, the conditions were ripe to achieve stability in the Horn of Africa, for the first time in the modern history of the region. The achievement of regional stability in the Horn of Africa was a joint interest of the US and China. Saudi Arabia and the UAE played an important role in mediating between the two. Abiy Ahmed, who was elected as the Ethiopian Prime Minister on April 2nd 2018, sought to exploit this rare opportunity in order to strengthen the status of Ethiopia as a regional maritime power with access to the sea. Similarly, Isaias Afwerki, the President of Eritrea also sought to exploit the opportunity in order to improve Eritrea’s international status and in order to remove the sanctions imposed by the UN in 2009.

18 https://commons.wikimedia.org/wiki/File:Oman_Sea_map-fr.svg
 19 <https://www.bbc.com/news/world-africa-14115069>

These peace processes began to coalesce on July 9th 2018, when Abiy Ahmed and Isaias Afwerki signed a joint declaration for peace and friendship and announced an end to the 20-year-old state of war between their countries and the renewal of diplomatic relations. Already at the end of that month, President Mohamed Abdullahi Mohamed Farmaajo of Somalia made a historic visit to Asmara, during which the presidents of Somalia and Eritrea declared a resumption of relations between their countries. At the same time, Afwerki played a key role in the reconciliation process between the government of Ethiopia and some of the opposition organizations which were headquartered in Asmara. On September 5th 2018, the presidents of Somalia and Eritrea and the Prime Minister of Ethiopia held their first three-way summit meeting in Asmara, at the end of which they signed a joint declaration for economic, social, cultural and military cooperation and announced that they would work together to promote regional peace and security. The next day, the foreign ministers of Ethiopia, Somalia and Eritrea arrived in Djibouti where they met with President Ismail Omar Guelleh of Djibouti. As a result of the meeting, Eritrea and Djibouti agreed to renew relations between them. Apparently, Saudi Arabia was also involved in the mediation activity between the two countries. Ten days later, on September 16th, the involvement of Saudi Arabia and the UAE in the peace processes in the Horn of Africa became known. This occurred when Afwerki and Abiy Ahmed signed a peace, friendship and cooperation agreement between their two countries in Jeddah, Saudi Arabia in the presence of King Salman bin Abdulaziz Al Saud; Mohammed bin Salman bin Abdulaziz Al Saud, the Saudi heir apparent; Sheikh Abdullah bin Zayedbin Sultan Al Nahyan, the Foreign Minister of the UAE; Moussa Faki Maamat, the Chairman of the African Union; and António Guterres, the Director General of the UN. The next day, on September 17th, there was an historic summit meeting in Jeddah between the presidents of Djibouti and Eritrea at the invitation of the Saudi heir apparent, Mohammed bin Salman.

As a result of these developments, the UN Security Council decided unanimously on November 14th 2018 to remove the arms embargo and sanctions that had been imposed on Eritrea in 2009 due to its supplying of weapons to the al-Shabaab terror organization that has been active in Somalia (a claim that Eritrea always denied) and due to its refusal to resolve its border dispute with Djibouti. In addition, Abiy Ahmed won the Nobel Peace Prize in 2019.

The regional peace processes are continuing. On the 9th and 10th of November 2018 the leaders of Somalia, Ethiopia and Eritrea arrived in Bahir Dar in Ethiopia for a second summit meeting. They stressed respect for the sovereignty, territorial integrity and political independence of Somalia. The third summit meeting took

place on the 27th of January 2020, where the leaders adopted a joint plan of action for 2020 and beyond which focused on the stabilization of peace, regional stability and security and the promotion of economic and social development.

Although the peace, reconciliation and normalization processes are attracting investment to the Horn of Africa countries (Djibouti, Somalia, Somaliland, Eritrea and Ethiopia) from all over the world, they are also having an effect on the rivalries between the global powers and the regional powers for hegemony and influence in the Red Sea basin.

The struggle for hegemony among global and regional powers in the Red Sea basin

The guarantee of freedom of navigation in the Red Sea and the activity to eliminate the threats to it, together with the peace, reconciliation and normalization processes taking place in the Horn of Africa exist in the background to the rivalries taking place in recent years among the global powers and the regional powers for hegemony and influence in the Red Sea.

The first rivalry is between the global powers—primarily Japan, China, India, the US, France and Russia—over hegemony and influence in the Indian Ocean and the Horn of Africa, which includes a foothold in the Gulf of Aden, Djibouti and the Horn of Africa countries. The second rivalry is between the key countries located in the region—Saudi Arabia, the UAE, Egypt, Qatar and Turkey—which began in June 2017 when Saudi Arabia, the UAE, Bahrain, Egypt and Mauritania cut off relations with Qatar. This rivalry has focused on the western shore of the Red Sea and the Gulf of Aden.

Due to its strategic location on the Bab el Mandeb Strait and its stable presidential regime, Djibouti is home to the largest number of foreign military bases in the world. Djibouti gained its independence from France in 1977 and until 2002 there was only a single French military base located in the country, which was the largest outside France. In 2001, as a result of the September 11th attack, President Ismail Omar Guelleh invited the global powers to establish military bases on Djibouti's territory in order to fight terror. In 2002, the US established 'Camp Lemonnier' in Djibouti, its largest permanent military base in Africa, for the purpose of fighting terrorism in Somalia and Yemen. Djibouti is also the home for military bases of the EU, Italy, Japan and China. Stationed at the French military base are also German and Spanish soldiers who are there to combat Somali maritime pirates.



Figure 11: The geopolitical situation in the Horn of Africa and the Bab el Mandeb Strait²⁰

The last military base to be established in Djibouti is the first Chinese military base located outside of China, which was inaugurated on August 1st 2017. According to Chinese officials, the purpose of the base is to support peacekeeping activity, Chinese humanitarian activity in the region and maritime missions along the coast of Somalia and Yemen against Somali pirates. However, the establishment of the base should be viewed as part of the implementation of the Belt and Road Initiative or the

20 John Calabrese, The Bab el-Mandeb Strait: Regional and great power rivalries on the shores of the Red Sea, *Middle East institute*, 29 January 2020. <https://www.mei.edu/publications/bab-el-mandeb-strait-regional-and-great-power-rivalries-shores-red-sea>

Maritime Silk Route Initiative of President Xi Jinping. The goal of this program is to create an economic and political land and sea network along China's important trade routes. The Chinese navy will secure this maritime network by establishing a chain of military bases in strategic locations and thus, China will essentially achieve indirect control of its major maritime trade routes. The scope of infrastructure construction at the Chinese base is on a particularly large scale and hints at broader intentions.

The establishment of the Chinese base in Djibouti is also part of the struggle for hegemony in the Indian Ocean between China on the one hand and India, Japan, Australia and the US on the other. It is not surprising therefore that the establishment of the Chinese base, which China is continuing to expand, is raising concern in Japan, which in response has expanded its own military base in Djibouti in an effort to block the growing Chinese influence.

Against the background of the regional peace processes in the Horn of Africa and Somalia's improved international status, the region has during the last two years become the site of another rivalry – that between China and the US. In August 2018, Somalia officially joined the Chinese Belt and Road project. In December 2018, the President of Somalia declared that his government had granted 31 tuna fishing licenses to China, and a year later, on May 13th 2019, the Chinese Exim Bank declared that it had signed an agreement with the government of Somalia according to which it would lend the government of Somalia \$200 million in order to rebuild the port of Mogadishu. In exchange, the bank would have exclusive fishing rights on the coast of Somalia and would become part owner of the port of Mogadishu until the loan is fully repaid.

At the same time, the US took a number of diplomatic steps to strengthen its presence in Somalia, including the reopening in October 2019 of the American embassy in Mogadishu.

During 2018, Russia also penetrated the Red Sea basin, with focus on the sale of arms and the development of trade, and it is seeking to develop good relations with Saudi Arabia in view of its large Muslim population. It is important to mention in this context that in 2008 Russia sent naval vessels into the Gulf of Aden in order to operate against the Somali pirates. According to reports during the last two years, Russia has discussed the construction of military bases with Somaliland and Eritrea. As of now, Russia still has no permanent base in the Red Sea, but Djibouti and Sudan have agreed that ships of the Russian navy can use their ports.

Saudi Arabia and the UAE view the countries located along the Red Sea as their western security belt in the context of the war in Yemen and as guaranteeing freedom of navigation in the Red Sea. In contrast, Turkey and Qatar are doing everything in their power to block the expansion of Saudi Arabia and UAE influence in these countries, including an attempt to gain a stronghold there themselves. These two rivalries are manifested primarily in the establishment of military bases or the leasing and management of ports in strategic locations in the Red Sea basin. The goal is to gain a foothold and influence in the region or alternatively to block the expansion of their rivals' influence. Although Qatar does not have any military or infrastructure presence in the Red Sea basin, it has a substantial influence over the events there. It supported the mediation in 2009 between Sudan and Chad and also between the government of Sudan and some of the rebel groups in Darfur which eventually signed peace agreements; it has invested heavily in Sudan and Ethiopia, primarily in agriculture and development; and it is leasing land in those countries in order to grow food; in 2017, it helped fund the election campaign of the current president of Somalia, Mohamed Farmaajo; and it provides hundreds of millions of dollars in funding to the central government in Somalia for infrastructure, educational and humanitarian assistance.

Also, Turkey, which is an ally of Qatar, is increasing its presence in Somalia, Sudan and Djibouti (in addition to its military presence in Qatar) as part of its plan to expand its traditional sphere of influence. More importantly, it is seeking to guarantee its access to sources of energy, in view of its depressed economic situation. In October 2013, the government of Somalia signed an agreement with the Turkish Bayrak company for the development and management of the port of Mogadishu for a period of 20 years and a new concession was signed in 2020 for an additional 14 years, which includes a terminal and exclusive maritime service in the port of Mogadishu. In September 2017, Turkey opened in Mogadishu its largest military base outside its borders. In January 2020, Somalia invited Turkey to search for oil in its economic waters.

After establishing its presence in Somalia, Turkey then turned to Sudan. On December 24th 2017, President Erdogan made the first official visit by a Turkish president to Sudan. During the visit, an interim agreement was signed, according to which Turkey would rebuild Suakin's port, the ancient Ottoman port city located on the shore of the Red Sea, as a tourist site and as a transit point for pilgrims on their way to Mecca and Medina, and would also build a shipyard there that would service commercial vessels. On March 26th 2018, Qatar and Turkey signed an agreement with Sudan with a value of \$4 billion to develop Suakin. It is important to mention that this facilitates

a joint Turkish-Qatari presence in the center of the Red Sea, thus creating a barrier between Egypt and the UAE base in Eritrea.

Furthermore, Turkey is expanding its influence in the Red Sea basin and is strengthening its presence in Djibouti as well. As a result of the maritime cooperation agreement signed between Turkey and Djibouti in January 2015, which was approved by the Foreign Affairs Committee of the Turkish Parliament in February 2019, Turkey will set up a free trade zone in Djibouti that will be located near the multi-purpose port of Durable. On the other hand, Saudi Arabia is also strengthening its presence in Djibouti. In February 2020, Saudi Arabia and Djibouti signed a plan for commercial cooperation in which they agreed that Saudi Arabia would set up a free trade zone in Djibouti.



Figure 12: Turkey’s geostrategic triangle²¹

The UAE penetrated the Red Sea basin prior to the outbreak of the civil war in Yemen. In 2008, the DP World company signed a contract with Yemen for the development and management of the port of Aden and in that same year the company signed an agreement with the government of Djibouti for the management and development of the container port in Durable, which would be the largest in Africa, for a period of 20 years. After the outbreak of the civil war in Yemen, the UAE focused on assisting the Yemenite government in taking control of the Red Sea coast and the Gulf of Aden and to neutralize the threat from the Houthis against international shipping

21 <http://turknews.ca/turkey-to-restore-suakin-island-and-build-naval-dock>

in the Red Sea. In this context, the UAE captured the island of Perim in the Bab el Mandeb Strait from the Houthis and, according to reports, the President of Yemen leased the islands of Socotra and Abd al Kuri to the UAE for a period of 99 years. With the outbreak of the civil war in Yemen, Djibouti granted Saudi Arabia and the UAE use of a facility to support their military activity in Yemen. However, at the end of April 2015, the UAE cut its relations with Djibouti and as a result Saudi Arabia and the UAE transferred the focus of their activity to Eritrea. At the end of April 2015, the UAE signed a 30-year lease for military use of the deep-water port at Assab and the nearby airfield. Since then, this base has served as one of the main bases of the military coalition in the war in Yemen. At the same time, the UAE has strengthened its military presence in Somalia. In May 2015, the UAE opened a military training base in Mogadishu which it funds and began to train Somali soldiers to fight the terror organization Harakat al-Shabaab al-Mujahideen which is affiliated with el Qaida. In February 2017, Somaliland signed an agreement with the DP World company to upgrade the port of Berbera and to manage it for a period of 50 years. Furthermore, it allowed the UAE to use the airfield and port at Berbera, which is located about 250 km south of Yemen, as a military facility in support of its activity in Yemen. In April 2017, the autonomous region of Puntland signed an agreement with DP World for the development and management of the Bassasso port for a period of 30 years.

However, during the past two years, the UAE presence in the Horn of Africa has diminished. On February 22nd 2018, Djibouti unilaterally terminated the agreement with DP World to manage the container port at Duralle since it transferred part of the control over the port to China. However, the UAE is not giving up in this matter and has filed suit against Djibouti and even against China for violating the agreement. The UAE has won six cases against Djibouti in the London International Court of Arbitration and the High Court of England and Wales, but Djibouti is ignoring the verdicts. The relations between Somalia and the UAE soured following the call by President Farmaajo of Somalia to cancel the agreement signed by Somaliland with DP World, according to which it will manage the port of Berbera. The UAE closed its training base in Mogadishu in May 2018 and also the one in Puntland which was used for the training of a maritime police force. A year later, the UAE suffered another setback when the President of Somaliland declared in September 2019 that the airfield which the UAE had built in Berbera would be used only for civilian purposes and would no longer be used for military purposes as originally agreed on.

Therefore, the UAE is currently strengthening its presence in South Yemen, where it supports the Southern Transitional Council; in Somaliland, where DP World manages the port of Berbera, and where the UAE is financing the construction of the corridor

leading from it to the border with Ethiopia; and in Eritrea whose government signed an agreement with DP World in February 2020 to upgrade its ports.

Nonetheless, the UAE, which at first successfully expanded its influence among the countries along the southern Red Sea and the Gulf of Aden, was in the end left with only a small number of strategic footholds.

Egypt, an ally of the UAE and Saudi Arabia, is demonstrating its military power and its intentions in the Red Sea basin by creating a task force to guarantee freedom of navigation in the northern Red Sea and by opening, in January 2020, the Berenice military base²² which is located near the border with Sudan. This is the largest Egyptian military base in the region and it is intended to protect Egypt's southern shores and the natural resources located there, as well as ensure international freedom of navigation from the Red Sea to the Suez Canal and to the oil terminal of the SUMED pipeline at Ain Sukha in the Gulf of Suez. The complex includes a naval base, an air base, army units, training facilities and more. The Egyptian navy is increasing its strength in the area and in 2017 established the Southern Fleet whose theater of operations is the Red Sea. The fleet includes a helicopter carrier, corvettes and multipurpose vessels that enable rapid military intervention.²³

Furthermore, Egypt is interested in strengthening its presence in the southern Red Sea in view of the difficulties in its negotiations with Sudan and Ethiopia with respect to the 'Grand Ethiopian Renaissance Dam' which Ethiopia is building on the Blue Nile. As a result, Egypt is negotiating with Djibouti in order to create a massive Egyptian free trade zone in Djibouti. In addition, in June and July of 2020 Egypt negotiated with South Sudan and Somaliland in order to establish a military base in their territory; however, Ethiopia was opposed to the idea and as a result the negotiations failed.

Even though Ethiopia does not have access to the sea either, it is transforming itself into a regional maritime power in the Red Sea. Since the election of Abiy Ahmed as Prime Minister on April 2nd 2018, he has been working to ensure access to the sea for Ethiopia, which it lost when Eritrea became independent in 1993. Although Ethiopia made use of the port at Assab in Eritrea until 1997, since then almost all of its exports and all of its imports have been passing through the port of Djibouti. In March 2018, Ethiopia, Somaliland and DP World signed an agreement according to

22 Dan Arkin, "Sea, Land and Air: The Egyptian army inaugurates a new base", Israel Defense (January 23rd 2020). <https://www.israeldefense.co.il/he/node/41665>

23 For further detail on the expansion of the Egyptian Navy, see "The Egyptian navy in the modern era: Its past and its future," *Maritime Strategic Evaluation for Israel 2020*, Shaul Horev and Ehud Goren (eds.), p. 190–211, Haifa University. [Hebrew]

which Ethiopia will own part of the shares in the Berbera port. In addition, the three sides agreed that the government of Ethiopia would invest in infrastructure in order to develop a corridor in Berbera that would serve as a commercial gateway to the interior of the country. Immediately after being elected Prime Minister of Ethiopia, Abiy Ahmed made three official visits – to Djibouti, Sudan and Kenya – in order to ensure that Ethiopia would have a foothold in the port of Djibouti, in the port of Port Sudan, which is the largest in Sudan, and in the port of Lamu in Kenya. At the same time Abiy Ahmed is busy rebuilding the Ethiopian navy with the assistance of France and Norway and on the 19th of January 2020, Lema Magersa, the Defense Minister of Ethiopia, declared that Ethiopia had established a navy whose base would be located at Djibouti and whose headquarters would be located at Bahir Dar, on the shores of Lake Tana. The role of the navy is to monitor events in the region, in light of the fact that the only port currently being used by Ethiopia for its imports and exports is located at Djibouti.

In sum, the outcome of this maneuvering for power is that Turkey is strengthening its presence in the Red Sea in Sudan and in Somalia, while the UAE is strengthening its presence in Eritrea, Somaliland and South Yemen. Meanwhile Egypt and Saudi Arabia, in addition to Turkey, will have a presence in Djibouti.

The security alliances in the Red Sea

In parallel to the struggles for power among the global powers and the regional powers, Saudi Arabia has during the past two years initiated a regional alliance made up of most of the countries located along the Red Sea. Its goal is to secure the international shipping lanes in the Red Sea and to halt the Iranian penetration into the region. On December 12th 2018, the representatives of Egypt, Djibouti, Somalia, Sudan, Yemen and Jordan met in Riyadh to discuss the creation of the alliance. On January 6th, 2020, the foreign ministers of Jordan, Saudi Arabia, Egypt, Yemen, Sudan, Djibouti, Somalia and Eritrea gathered in Riyadh to sign the charter of the Council of Arab and African Countries Bordering the Red Sea and the Gulf of Aden. The goal of the charter is to encourage cooperation in securing international shipping in the Red Sea and economic cooperation between the member states. As of now, the Council is not yet active since the declaration is waiting for ratification by the parliaments of its members. However, it is already clear that there will not be any military force at the disposal of the Council since each of the member states has its own military and therefore its security activities will be carried out through bilateral or collective coordination. The core of this alliance is made up of Saudi Arabia and Egypt who have been holding joint military exercises and maneuvers in the Red Sea

with the participation of representatives of some or all of the Council's members. It is important to mention that among the countries located in the Red Sea basin, three are not members of the Council, namely Ethiopia, apparently as a result of the tension between it and Egypt over the Renaissance Dam; Somaliland whose inclusion would imply recognition of its independence; and Israel.

The Inter-governmental Authority on Development (IGAD), a bloc of eight countries in East Africa and the Horn of Africa, has also joined the effort to protect freedom of navigation in the Red Sea and the Gulf of Aden and on April 4th 2019 established a special task force of experts with the goal of formulating a joint regional plan of action with a clear timetable with the goal of protecting the security and economic interests of the region.

It is possible that in the future, these two bodies will join forces, particularly in light of the fact that some of the countries located along the African coast of the Red Sea and the Gulf of Aden are members of both organizations and efforts are being made to consolidate them.

Israel's' policy in the Red Sea basin

Since its independence, Israel's foremost strategic interest in the Red Sea has been to protect its freedom of navigation and to foil efforts to interfere with it. In this context, the Straits of Tiran, which serve as Israel's only maritime route of access to the Red Sea and Africa, are of particular importance. Therefore, the closing of the straits to Israeli ships by Egypt in 1956 and 1967 constituted a "casus belli" – a pretext for war. At the end of the day, the peace agreements between Israel and Egypt (1979) and between Israel and Jordan (1994) provided an anchor for Israel's freedom of navigation (at sea and also in the air) through the Suez Canal, in the Straits of Tiran and in the Gulf of Eilat. Therefore, Israel was involved in and consented to the transfer of the islands of Tiran and Sanafir from Egypt to Saudi Arabia as part of the development of the future city of Neom in northeastern Saudi Arabia, which will stretch over the territories of Saudi Arabia, Jordan and the Sinai Peninsula. In the southern Red Sea, Israel has worked to reinforce freedom of navigation through diplomatic contacts with Ethiopia. Starting from May 1993, when Eritrea won its independence and Ethiopia lost its access to the sea, Israel has strengthened relations with Eritrea and used them in order to create an expanded military presence in Eritrea.²⁴ It has also informal relations with Djibouti and Somalia.

24 An American company: "Israel has a military base in Eritrea," *Globes* (December 12th 2012). <https://www.globes.co.il/news/article.aspx?did=1000805648> [Hebrew]

In addition, according to foreign media reports, Israel has been involved in the war in Yemen and until January 2016, when Sudan cut off relations with Iran, Israel was also involved in the effort to halt the smuggling of arms by way of Sudan to Hamas in the Gaza Strip. Starting in January 2016, Israeli interests have been to prevent the smuggling by sea of arms from Iran to the Gaza Strip which are meant to be used against Israel.

The geopolitical developments described above provide Israel with a number of opportunities. From a security perspective, the signing of the Abraham Accords with the UAE on September 15th 2020 creates the possibility of security and military cooperation with the UAE in order to ensure freedom of navigation and to prevent smuggling of Iranian arms to the Houthis in Yemen, as well as the possibility of an increased presence in the Red Sea and the Gulf of Aden. Recall that the UAE has a presence in South Yemen, in Somaliland and in Eritrea. In July 2020, Ishmael Khaldi was appointed as Israel's ambassador in Eritrea, the first Israeli diplomatic presence in the country for many years. This appointment creates a rare opportunity for cooperation with the UAE on the military-security level and in order to create an Israeli presence in this important country. In addition, already in August 2020, there were unconfirmed reports of an Israeli presence on the island of Socotra and the construction of an Intelligence base (according to the report) on the island which is operated jointly by Israel and the UAE.

On the political level, Saudi Arabia is interested in creating a regional alliance to block Iranian expansion and Israel's important place in this coalition constitutes the basis for the warming of relations between Israel and Saudi Arabia and the signing of the Abraham Accords with the UAE and Bahrain (2020). As a result, and also in view of the Sudanese understanding that the way to the US and removal from the list of countries that support terror passes through Israel, Israel and Sudan announced on October 23rd 2020 an agreement for normalization, which would begin with the establishment of economic and trade relations, with emphasis on agriculture.²⁵ This followed a telephone conversation between US President Donald Trump, Israeli Prime Minister Benjamin Netanyahu, Sudanese President Abdallah Hamdok and Chairman of the Supreme Military Council Abdel Fattah al-Burhan. However, and even though Israel's situation in the Red Sea basin has never been better—it has relations with all of the countries in the region—without full diplomatic relations with Saudi Arabia and subsequently with the rest of the countries in the region which may will follow soon, it cannot participate in the Council of Arab and African

25 "Israel and Sudan have declared a normalization agreement between the countries, mediated by the US," *Haaretz and Reuters* (October 23, 2020). <https://bit.ly/382iECe> [Hebrew]

Countries Bordering the Red Sea and the Gulf of Aden and cannot take an active part in economic cooperation in the region.

Moreover, the establishment of the EastMed Gas Forum, whose members include three countries located on the Red Sea basin, namely Jordan, Israel and Egypt, can constitute a basis for the creation of a joint gas forum for the Eastern Mediterranean and the Red Sea. This is especially the case if natural gas or oil deposits are found in Egypt's economic waters in the Red Sea. In this case, Israel will be able to integrate economically also in that region.

Conclusion

Israel's strategic goals are directly and closely connected to its economic goals. Israel's main goal is to prevent a blockade of the Bab el Mandeb Strait to maritime traffic between Eilat, the Suez Canal and the Indian Ocean – to and from Asia and Africa.

In recent years, there has been a real danger to maritime navigation in the Red Sea. The Houthi rebels who are supported by Iran have planted hundreds of sea mines along the shipping routes that pass through the Red Sea. Neutralizing these mines will require a period of five to six years. Various countries have been called on to join the effort to remove the threat of sea mines in the Red Sea.

The security, political and economic developments in the Red Sea basin in recent years have transformed it into a dynamic and changing landscape, but one that is highly explosive. Therefore, Israel needs to exploit the regional opportunities that have recently emerged and to expand its integration within the region.

However, in order for Israel to integrate within this region it must first decide on its policy, based on a continuous monitoring of regional developments. These developments are occurring at a fast pace and the interests that determine the actions of the global powers, the regional powers and the states in the region are highly complex. If Israel is interested in integrating within this landscape or at least protecting its essential interests, it must have a deep understanding of the interests of all the players and of the resulting opportunities and challenges.

The Russian Navy – Main Trends in 2020 and their Implications for the Middle East

Ido Gilad

Background

The year 2020 was characterized by the spread of the Corona pandemic, a slowdown in economic activity and a drop in international trade. The global economic crisis did not pass over Russia. The rising level of infection (despite the Russian reports of the development of the Sputnik-V vaccine) and the overall economic slowdown have had an impact on a variety of its global maritime activities, including those of the Russian navy. However the key maritime geo strategic goals continued to develop in the North Arctic region and consistently in the Middle east, i.e. East Mediterranean Syrian coast footholds, the Libyan coast and a Red sea planned logistic facilities as mentioned (16th November 2020) in Port Sudan. Russia's hegemony aims to export & supply energy with emphasis on fossil fuels and particularly natural gas, refers to the Eastern Mediterranean arena as well, in spite of the global crisis fall in demand, prices and production of these energy products. The decline in this field of activities effected the income of the Russian economy, since energy products constitute one of Russia's largest export sectors. The regional impact of the crisis in the Eastern Mediterranean is liable to hinder Russian involvement in the development of offshore energy projects, such as in Lebanon, Libya, etc., as well as its sea transportation.

Nonetheless, naval activities during the past year aspired to meet the basic planning, as was directed on June 1st, 2020 by Admiral Nikolai Evmenov, the commander of the Russian navy (see Figure 1)¹

This year, Russia is marking the 237th anniversary of the founding of the Black Sea Fleet (on May 13th). At the event, Admiral Evmenov stressed the important role played by this fleet affecting the Russian navy's operational capabilities in the Mediterranean "Permanent Operational Formation of the Russian Navy in the Mediterranean Sea."²The operational experience partly is an outcome of the fighting against the terrorist targets since 2014 in Syria.

- 1 The Russian Ministry of Defense site – The Navy; June 6th, 2020. http://xn--d1acaykgvdf0he1a.xn--90anlfbebar6i.xn--p1ai/news_page/country/more.htm?id=12295177@egNews
- 2 From the Russian Ministry of Defense site, May 13th 2020 – Greetings from Admiral Nikolai Evmenov, the commander of the Russian navy on the anniversary of the fleet which was founded in 1783. http://xn--d1acaykgvdf0he1a.xn--90anlfbebar6i.xn--p1ai/news_page/country/more.htm?id=12291947@egNews



Figure 1: Admiral Nikolai Evmenov, the commander of the Russian navy¹

Another event marked this year was the 75th anniversary of victory over Nazi Germany as part of ‘The Great Patriotic War’ on June 24th, 2020 (deferred from May 9th as a result of the Corona pandemic). The event included all Russian fleets, including the Black Sea one. Simultaneously, a Kilo-class submarine sailed (above the surface, as by the convention) in a southbound direction through the Turkish straits from the Black Sea to the Mediterranean. A possible added value to this passage could have symbolized a "show of the flag" daylight expression by a Russian strategic vessel, with relations to the festive national memorial event (Figure 2).³



Figure 2: A Russian Kilo-class submarine passing through the Turkish straits on June 24th 2020³

3 From the Forbes site, June 24th, 2020. <https://www.forbes.com/sites/hisutton/2020/06/23/image-shows-russian-submarine-appearing-to-break-international-treaty/?sh=74aee2157b82>

Additional projection of power this year included Naval day which was marked at various bases, including the Syrian coast, on July 26th.⁴ The annual 'Caucasus 2020' exercise, under the command of the Chief of the General Staff Valery Gerasimov, took place during September 21–26, 2020 in the Southern Theater. Some 20 vessels from the Black Sea Fleet took part as well as from the Caspian Sea naval squadron. In addition, missiles as other weapons were fired as President Putin observed.⁵ In late September, the Russian navy held a joint exercise with the Indian navy. This joint maritime cooperation between the two navies has various geostrategic implications, primarily with respect to China (see below). On November 17-24, four Egyptian combat Naval vessels participated in the "Friendship Bridge-III -2020" great maneuver held for the first time in the Black sea region⁶

The rest of the activities, subject to the Corona policy imposed by the Russian navy, included the activities of the various fleets. In the East Mediterranean, in addition to the navy's routine activities, a large-scale joint exercise held with the Syrian navy (on August 21st 2020).⁷ Like many other activities of the Russian navy in the shadow of the Corona virus, warship' crews were isolated, following the experience of other foreign warships since April 2020, within the USN 'Theodore Roosevelt' and the French 'Charles de Gaulle' aircraft carriers.

The buildup of power, development of weaponry, and procurement of the Russian navy continued this year, even though it could have possibly slowed due to the pandemic impacts. In these contexts, there were reports about weaponry tests and some missiles launches, It including the "Tsirkon" Hypersonic Missile, with the speed of Mach 8, from a surface vessel (October 7th 2020, see Figure 3).⁸ In addition, on November 3rd, 2020, an R-30 "Bulava" intercontinental ballistic missile had been launched from a Borei-class submarine, project 995.⁹ A number of

4 From Tass News Agency, May 20th 2020. <https://tass.com/defense/1158531>. The preparations could be seen starting about two days earlier and included the participation of a variety of vessels and aircraft. See the Sputnik site in Arabic, July 24th 2020. <https://arabic.sputniknews.com/military/202007241046090817>

5 From the Tass News Agency, September 24th, 2020. <https://tass.com/defense/1204499>

6 From YouTube, November 14th, 2020. www.youtube.com/watch?v=F649m_Lg32Y&feature=emb_logo Film shows the northbound passage of the Dardanelles over Novorssisk port. According to the mentioned publication Vessels in participation were: Frigate Frame, Frigate OHP class, Corvette Gowind, and Ambassador-III missile boat.

7 From Izvestia, August 21st 2020. <https://iz.ru/1050910/2020-08-21/voennye-rf-i-flot-sirii-proveli-sovmestnye-ucheniia-v-tartuse>

8 Tass News Agency, October 7th 2020. <https://tass.com/defense/1209579>. See Figure 3.

9 Tass News Agency, November 3rd 2020. <https://tass.com/defense/1219491>. See Figure 4.

reports during the year, indicated about some deliveries of new vessels to the navy. President Putin in person participated the ceremony of a new icebreaker held on beginning of November 2020 in the St. Petersburg shipyards. Vessel named 'Viktor Chernomyrdin'¹⁰ of project 22600 (not the atomic propulsion ice breaker 22220 which is still under construction). The attendance in the event of President Putin emphasizes the importance that he attributes to the development of the Northern Arctic region and the development of the Russian ice breakers fleet.



Figure 3: Test launch of the Tsirkon hypersonic missile, October 7th, 2020



Figure 4: Test launch of an R-30 Bulava ballistic missile from a Borei-class submarine, November 3rd 2020

Visits and joint maneuvers in order to show the flag

A force composed by two 'Udaloy' destroyers class 'Admiral Vinogradov' & the 'Admiral Tributs' accompanied by a tanker, left Vladivostok, home port of the Pacific Fleet to participated in the 'Indra' naval exercise together with the Indian navy (September 4–5, 2020). The joint naval exercise took place in the Strait of Malacca, delivering apparently a political mutual message towards China, emphasizing the tightened relations between the two countries. The exercise was preceded by a visit of the Indian Minister of Defense to Moscow, where he met with his Russian counterpart, Sergei Shoigu.¹¹

Another group from the Northern Fleet, led by another Udaloy class anti-submarine destroyer, 'Admiral Kulakov' accompanied by a tanker & tugboat sailed (September-October 2020) over the Mediterranean and visited ports in Algeria, Cyprus, Syria and Greece /Piraeus port.¹² Another joint maneuver between the Russian and Egyptian

10 Tass News Agency, November 3rd 2020. <https://tass.com/society/1219653>.

11 The Economic Times, September 4th, 2020. <https://economictimes.indiatimes.com/news/defence/quad-in-action-india-us-japan-australia-navies-begin-first-phase-of-malabar-naval-exercises/videoshow/79047994.cm>.

12 Tass News Agency, October 22nd 2020. <https://tass.com/defense/1215151> (report of the visits to Greece).

navies (above mentioned) held in the Black Sea at late Nov.2020. As the Egyptian force passed through the Turkish straits forth and back, it could be viewed as a political message directed toward Turkey.¹³ It is worthwhile at this point to describe the rivalry between Egypt and Turkey in recent years, after the regime of Egyptian President Mohamed Morsi during 2012–13. Morsi's regime was ideologically based on the Moslem Brotherhood movement in Egypt and that was the reason to create a close accord of relationship with Ankara, despite some historical tensions between the two countries. Both sought for the leadership over the Sunni Muslim world. Morsi's removal from power soured the relations between the two countries, hence both sides had put efforts competing the other, combining huge interests in developing their maritime capabilities, emphasizing their navies. In Turkey the maritime dimension had been developed towards a new doctrine which is called: nation's 'Blue Homeland' ('Mavi Vatan' in Turkish).¹⁴ The rivalry over ideological-religious hegemony of the Muslim-Sunni world reached geo-economic and geo-energetic elements too, with deep attention to the production of fossil fuels in the Eastern Mediterranean. The East Mediterranean Gas Forum (EMGF) established in Cairo (January 2020) is dedicated to advance the coordinated exploitation of these resources and the possibility of implementing an EastMed gas pipeline to connect EastMed with south Italy. The Forum members include the neighboring countries: Israel, Greece, Cyprus, Jordan, the Palestinian Authority and Italy. France has asked to join while the US serves as an observer, while Turkey is excluded. Both Turkey & Egypt have been attempted to accelerate their maritime development in other means too, in order to achieve the status of a 'regional power'. Among various frictions being held between the two countries, rivalry in the Libyan front has recently reached the point of a true conflict, and there is a danger of escalation. As Turks support the forces of the Tripoli government (GNA) headed by Fayez al-Sarraj, while Egypt supports the Eastern faction (LNA) led by Khalifa Haftar, together with Russia, France, Saudi Arabia, Jordan and the Gulf Emirates.

Russia attempts to stay away from the Turkish-Egyptian rivalry, even though its involvement in the Libyan complex as others tenses its relations with Turkey. The relations between Russia and Egypt are also complexed. As aforementioned the two share the same side in the Libyan arena, both have shared (end of November 2020) a first mutual naval maneuver in the Black sea for the first time. They share trade also of arms supply to Egypt; Russia constructs infrastructure assets in Egypt, among

13 Tass News Agency, October 11th, 2020; Tass, October 11th, 2020. <https://tass.com/defense/1210889>; and October 8th, 2020. <https://tass.com/defense/1210037>.

14 For a full survey of the Blue Homeland policy, see the chapter by Omri Eilat and Ayal Hayut Mann.

them a nuclear energy reactor in El Dabaa, on the coast, west of Alexandria, close to a water desalination plants ; the creation of a commercial-industrial zone east of Port Said, etc.

The expected impact of Russian activity with respect to the US

During the Obama presidency, the US adopted a policy of reducing its presence in the Middle East, preferring other regions with priority of global focal points, among them China is first within an emphasis to East Asia, by a motto called "Pivot to Asia". Nonetheless, Russia continues to be a leading focus of interest for the US and "*Russia will be high on America's foreign policy agenda, including the Mediterranean basin*".¹⁵ US attention continues to be focused on the Russian presence in Syria, Its' developed role in Libya during the past year and in North Africa. In recent days another arena has risen in the Red sea, with the intent to gain a "logistic facility" at Port Sudan. According to Lesser(2020) ¹⁴every American government will continue to show interest in the Mediterranean region, however US would prefer to be part of an efforts led by the EU rather than leading a direct accord under its dominance activity in the Mediterranean arena.

The growing presence on the Syrian coast

In late May 2020, President Putin ordered an expansion of the Russian presence on the Syrian coast. Two months later (on July 30th), a directive issued by the Kremlin went into effect in order to reinforce Russia's foothold in the logistic maritime center at the port of Tartus, and the better define of the airspace west of the Khmeimim airbase (in central Syrian coast), serves also as main headquarters of the Russian forces in Syria. This directive also expands the foothold on the coast in the Latakia district, in the vicinity of the northern border with Turkey, area that is called Kesab.¹⁶

The publication date of the directive marked five years of Russian involvement and fighting in Syria. The permanent presence in Syria was officially approved by Minister of Defense Shoigu on September 30th, 2020. He stated that along the 5 years

15 Lesser I.O.(2020). "The United States and the Mediterranean in an Age of Shocks," in: Euro-Mediterranean policy observatory (IEMed.) Year Book 2020. Pp.248-250. www.iemed.org/observatori/arees-danalisi/arxiu-adjunts/anuari/med.2020/US_policy_Mediterranean_Ian_Lesser_IEMed_YearBook2020.pdf

16 From the official site for legislation of the Russian Federation, August 19th 2020. <http://publication.pravo.gov.ru/Document/View/0001202008190057?index=3&rangeSize=1> This document is an extension of the directive of August 2nd, 2015. Also: the Tass News Agency, May 29th 2020. <https://tass.com/defense/1161849> ; the Al-Arabiya Network, August 21st, 2020. <https://www.alarabiya.net/ar/arab-aworld/syria/2020/08/20>.

period "air strikes and cruise missiles (assumed that also 'Caliber' naval missiles are involved-I.G.) were used to destroy 133,542 terrorist targets, including 400 unlawful refineries and about four thousand refueling facilities. A large number of opposition fighters were killed, including 865 commanders and 4,500 Muslim militia members from former CIS countries"¹⁷

The five years of activity in Syria have kept the Assad regime in power, as President Assad compensated the Russians by giving them a desired permanent foothold in Syria. The official agreement upon was signed in the summer of 2017 and as mentioned was expanded last summer (2020). This includes the leasing of the ports at Tartus and the Khmeimim Air Base, including the coastal strips adjoining these assets. The period of the Russian lease was specified as 49 years (until 2066) with a possibility of a 25-year extension (to the year 2091, almost till the end of the present century). It appears therefore that Russia does not intend to give up its presence in the theater any time soon. Furthermore, the directive issued in the summer of 2020 allows Russia to address its permanence status in Syria, as a message towards the US, as to other players as the regional active powers, in particular Iran, Turkey and even Israel. To other foreign players and potential investors in the region such as China, Eu, the Persian Gulf countries and others. Russia continues currently in propping up Assad's regime despite the lack of political and economical solution to the enormous damages caused by the war, and even more, its costs in terms of the victims & the population from a demographic upheaval that resulted from the massive migration within the country and the immigration abroad. In addition, there has been a significant damage to the country's infrastructure and uncertainty has risen even more due to the Corona crisis. Local incidents in the Syrian coastal area included repeated attempts to attack the Russian bases by the local opposition and terrorist forces by means of drones and various other methods. There also were large-scale fires in October 2020 in the areas under Alawite control on the Syrian coast. In order to protect their bases in Syria, the Russians have employed various methods. Among the protective measures in the port of Tartus, there had been a deployment of sea mammals (which occurred at least two years ago) for the defense of underwater targets (see Figure 5, comment 18).

Efforts to find a solution to the crisis in Syria and the surrounding regions will require a multidimensional approach, on both: the military level and the socioeconomic, political and diplomatic levels. The Russian maritime presence in Syria is based upon a

17 From Tass, September 30, 2020 (the fifth anniversary of Russian involvement in the fighting). <https://tass.com/world/1206679>.

basic policy document for Russian naval strategy up to 2030 (published in July 2017).¹⁸ The document describes the Russian navy as "one of the effective deterrents in the maintenance of Russian strategy" and is intended to ensure the permanent presence of the Russian navy in the Mediterranean and at essential maritime passages.¹⁹ The fighting in Syria is mentioned in the document as an important international arena, with the potential to endanger Russian strategic interests.²⁰



Figure 5: Sea mammal pens on the pier in the port of Tartus²¹

The importance of the port of Tartus for Russia

The Syrian port of Tartus has served as an important stronghold for the Russian navy in the Mediterranean since 1971, when an agreement was reached with President Hafez Assad for the use of the port by the Soviet Union. The agreement was expanded in 1974 following the 'Yom Kippur War' (October war 1973). The Russian presence in the port has therefore been maintained for about 50 years so far and has been expanded in recent years, as mentioned above. In late 2019 and prior to the Corona

18 The Kremlin site, July 20th, 2017: Document 55127 signed by President Putin. Fundamentals of the State Policy of the Russian Federation in the Field of Naval Operations Period Until 2030. It is worth mentioning that it extends previous documents published in 2001 and 2015.

19 *ibid.*, Fundamentals of the State Policy of the Russian Federation in the Field of Naval Operations Period Until 2030, Chapter 4, paragraphs 32 and 38 g.

20 *ibid.*, Chapter 2, paragraph 27.

21 From <http://www.hisutton.com/Russian-Navy-In-Tartus-Syria.html> June 24th 2020: Russian Navy Deployed Marine Mammals to Defend Base in Syria. The identification is attributed to at least as early as September-December 2018.

pandemic, Russia addressed its intention to invest about half a billion dollars in the port in order to expand its infrastructure.²² Russia's motives for such expansion could increase its powerful presence as a counterweight to other European superpowers and other players in the Middle East, in order to "*modify its military activity*".²³ The Russian presence in the port of Tartus is illustrated in Figures 6 and 7.



Figure 6: The deployment of first-line ships in the port of Tartus; two Kilo-class submarines and the Admiral Grigorovich-class frigate (October 11th, 2020)²⁴



Figure 7: Deployment of Russian vessels in the port of Tartus (July 2nd, 2020)²⁵

- 22 Foy in the Financial Times, December 3th, 2019. <https://www.ft.com/content/f52bdde6-20cc-11ea-b8a1-584213ee7b2b>
- 23 Svetlova, K. (September 24, 2020). "Russia Marks Five Years of Presence in Syria: Challenges vs. Achievements." The Institute for Policy and Strategy (IPS), Spotlight on Russia in the Middle East. <https://www.idc.ac.il/en/research/ips/pages/russia-middleeast/russia-11-10-20.aspx>
- 24 From <http://www.hisutton.com/Russian-Navy-Base-in-Tartus-Syria.html>; accessed on October 11th, 2020.
- 25 From <http://www.hisutton.com/Russian-Navy-Base-in-Tartus-Syria.html>; accessed on October 7th, 2020. The photograph itself is from July 2nd, 2020.

It appears that the reinforcement of its foothold in Syria and the port of Tartus has provided Russia with stability to continue and proceed the geographic exploitation in deploying over other regions of the Middle East, relatively distant from the Russian homeland, too. Another foothold achieved by Russia during the last year is in Libya, being supportive as mentioned to the forces of the Libyan National Army (LNA) under command of General Khalifa Haftar who fights the the Government National Accord in Tripoli (GNA). The Russian activity is part of a coalition together with other foreign participants. Russia is working as well to expand its cooperation with other countries in North Africa, including Egypt and Algeria. Another arena of interest for Russia refers to east Africa's continent in Sudan, in where it was agreed recently to deploy a naval facility. These geopolitical advantages for Russia, should increase its influence in the near east region, even if the importance of these new posts would not gain the same equivalence to the "*duplicating the Russian activity in the waters off the coast of Syria*".²⁶

The ports of call by Russian vessels in the Mediterranean mean various interests. Among others those in Cyprus and especially in Greece (September-October 2020) are interesting, as they might reflect over Russia's future potential intention to gain a foothold in the port of Alexandroupolis which is located in the northern Aegean Sea and is near the Dardanelles Strait in Turkey. De Palo (2020) describes the competition between Russia, the US and China for the concession to use this port facilities in view of its highly strategic location: at the junction of maritime traffic to and from the Black Sea, at the point where the Trans-Anatolian pipeline and the Trans-Adriatic pipelines branch cross its destinations; at the sea-land seam leading to the Balkans; and its close proximity to the passages between Asia and Europe, including the routes for immigration from Asia over Europe.²⁷

Sino-Russian Relations

The mentioned competition over a potential concession in the Port of Alexandroupolis is definitely not the only one between these two superpowers. Other topics as well as maritime disagreements are parts of a larger scale. A major one considers the control of the Arctic Northern Sea and the ownership of the natural resources under the melting ice cap in that huge and rich region. Another issue would be the

26 Krasik, T. (2018) "Implications and Policy Recommendations" in: Krasik, T. & Blank, S. (eds.) *Russia in the Middle East*. The Jamestown Foundation, Wa DC. PP. 414–440

27 De Palo, Francesco (28.10.2020) "The three-way derby between China, Russia and the USA for the Greek port of Alexandropolis." In: Formiche.net. <https://formiche.net/2020/10/gas-geopolitica-alexandroupolis>

increasingly close relationship between Russia and India, were manifested at the joint Russian Indian naval exercise in the Malacca Strait in early September 2020. An event which carried a message directed primarily to China (see Figure 8). The Russo-Indo relations include a purchase of Russian arms as well—not limited to naval arm, and joint development of weaponry. The supply of arms to India began already during the Soviet era.



Figure 8: The commanders of the joint 'Indra' naval maneuver (September 2020) on the deck of the command ship²⁸

Russian vessels began their journey from their homeport of Vladivostok on the Pacific Ocean. With a probable connection, China has complained to Russia that its possession of Vladivostok (since 1860) is unlawful since it was taken from China after its defeat by Britain and France and transferred to Russia.²⁹ The Russian-Indian exercise preceded meetings on the defense ministers level to achieve coordination between the two navies, their professional levels of delegations from the two navies. The exercise was preceded by another naval maneuver in which the Russian navy took part, together with the navies of China and Pakistan²⁶. It appears that the joint naval activity with India, which was widely reported mainly in India, illuminates a certain amount of tension in the relations between Russia and China. Among all other matters, there are foci of disagreement also in the Northern Arctic Ocean. The over-all Sino-Russian relations might have changed compared to a year ago, as lights casted the attitude towards a deeper sense of a strategic mutual partnership. A clear expression of this change can be found in the announcement by President Putin (Tass, October 22nd) which quotes "*there is no (further) need for a military alliance with China*" unless the US attacks them simultaneously.³⁰

28 From a clip on YouTube, September 6th, 2019. <https://www.youtube.com/watch?v=aUrpdTJjuk>

29 From a clip on YouTube, September 19th, 2020. <https://www.youtube.com/watch?v=iy4b6fmzags>

30 From Tass News Agency. <https://tass.com/defense/1218485>, October 30th, 2020.

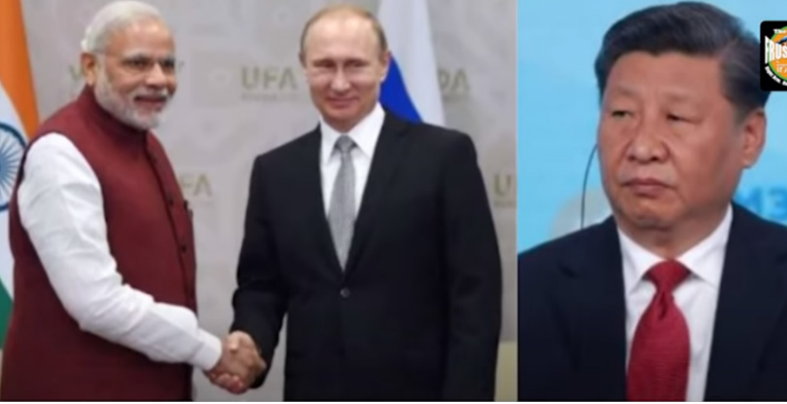


Figure 9: Russian President Putin and Indian Prime Minister Modi and opposite them Chinese President Xi²⁶

Putin did not ignore the need to continue the primary forms of cooperation and the need to consist of joint maneuvers on land and at sea, as well as the exchange of technologies for military development. In the former December 2019, the Russian navy took part in a three-day naval maneuver in Iran which included the Russian navy, the Chinese navy and the host navy, that involved also the naval forces of the Iranian Revolutionary Guards. This year, there has been no report of such a three-way exercise and it is unclear whether this is related to the tightening relations between Russia and India or due to the affection of the expected growth of Chinese investment in Iran, which means a decrease in the influence of Russia over the rest two other players Russia and Iran.

Conclusion

Despite the outbreak of the Corona pandemic in 2020, the Russian navy consistently attempted to fulfill its missions according to plan. The relationship with the Chinese navy is a part of the wider relations between the two countries. They could be expressed by the statements of President Putin who diminished the need for forming a military alliance between the two countries. On the other hand, there has been measures which indicate the tightening relationship with the Indian navy. However, Russia's aim to expand and strengthen its global and maritime positions as a key player in the various diplomatic and economic arenas remains still, with an emphasis on the Northern Arctic Ocean. Russia continues to advance its projects over the north region by launching ice breakers, deepening its maritime control over the region, deploying various types of military forces to the region, planning and coordinating its legal position in the region. Russia decisively appears in the

Mediterranean, too. These entire activities continue to have domestic implications in Russia and on Putin's administration.

In the Middle East, the main activity referred to Russia's growing presence on the Syrian coast, both: in its maritime facility in Tartus port, and on the northern coast: west to the air base and headquarters in Hmeimim, and in the northern border point with Turkey. Russia has expressed its intention to develop the commercial ports, with emphasis on Tartus.

The Russian activity is also evident in Libya, as part of its intervention in the local civil war. The presence there was expanded along this year from the Libya's eastern border with Egypt - westward toward the capital of Tripoli.

Russia has deepened its naval relationship with Egypt as was realized by the joint two navies exercise held in the Black Sea at late November 2020, first of its kind in that region. The unique passage of the Egyptian naval vessels through the Turkish straits Served as a political sign over the Turkish Erdogan's government, manifesting Egypt and most likely Russia's mutual coordination. Some other operational issues between the two focuses on shore, energetic & infrastructure facilities supported by Russia.



Figure 10: The Russian–Egyptian joint manoeuvres at the black sea, the 'Friendship Bridge-III, November 2020

Russia continues to put efforts in order to strengthen its regional status in the Middle East, maintaining simultaneously numerous of relationships, especially as some players tend rival relations between themselves (e.g., Israel & Iran+ proxies;

Greece + Cyprus & Turkey, Armenia & Azerbaijan etc.). This role allows Russia to increase its influence as of a mediator regionally and Globally.

In the Persian Gulf, a joint Russia-Iranian maneuver hasn't taken place yet, albeit the previous one held there in late December 2019 together with China, ending with a wish statement of the Iranian commander to hold further joint exercises between the three participated navies. The nature of the Russian presence in the Persian Gulf during the past year decreased due to the Corona pandemic as well as from other reasons.

Alongside the development of naval weaponry, Russia is continuing to develop capabilities, focusing on asymmetric as hybrid threats to be projected. However economically civilian national investments, commitments and infrastructure may suffer a shortage, for example in the Syrian ports, also due to the corona pandemic. A solution might be realized by a participation of private Russian companies or investors.

Recommendations

Israel should exploit Russia's unique strength to tend varied relationships with different parties -some in a rival situation. Especially in viewing of Russia's naval longitudinal presence in the arena.

The US trend towards leaving the near east region will apparently continue, despite the replacement of the Trump government. Russia's regional superpower status as a result, and especially as seen in the maritime domain which President Putin emphasizes, increases its presence and influence over the region. The continuity noticeable by Russia's buildup of its footholds in the region, also to the Red Sea. Thus, Israel's interest should create dialogue and coordination with Russia as a leading player and a mediator in the region, should be considered even more vitally.

Potential aspects of dialogue between the State of Israel and Russia as with other players in the region can include joint research activity in the areas of maritime infrastructure, blue energy, desalinization, sea transport, the impact of climate change, i.e., finding solutions to the threat of rising sea levels, development of food from the sea, migration etc.

Another dimension may include a research over the impact of the exploitation of the Northern Sea Route and the possible growing sea traffic through it, as well as its implications on the current traditional traffic through existing shipping lanes in the Red Sea and the Suez Canal.

Russia in the Pacific: A Historical Perspective and the Current Situation

Tzevy Mirkin

Geographical Conditions

The Russian Pacific Fleet, which is considered to be one of Russia's "strategic fleets"¹, is responsible for activity in the Pacific Ocean and the Indian Ocean. Its two main bases are at Vladivostok, where the fleet headquarters and its main forces are stationed, and Petropavlovsk-Kamchatsky, a port on the Kamchatka Peninsula which is the base for the nuclear submarines of the Pacific Fleet.

In addition to the fact that this fleet is the most remotely deployed of Russia's naval forces, it also suffers from geographic isolation from Russia's most important regions (as well as Russia's industrial centers and shipyards) and a lack of infrastructure in its theater of operations.

First and foremost, the Russian Far East is Russia's most outlying area (the flight from Moscow to Vladivostok takes more than 8 hours and the trip by railway is about 6 to 7 days). Furthermore, land transportation between the Far East and the rest of the country is based primarily on the Trans-Siberian railway, which has only a limited capacity. With respect to the Far East itself, a large part of it is not connected to the other parts of the country or to the industrial centers by a land route, such that there is no overland route connecting the Kamchatka Peninsula even to neighboring regions and therefore all transportation is by air or by sea.

There are also problems for vessels to leave the naval bases in the region for the open sea – between Vladivostok and the bases in its vicinity. Between the Pacific Ocean and those bases are Japanese islands and north of them the Kuril Islands. Even if the latter are under Russian control, the straits between some of them are frozen in winter, thus further limiting the naval forces' ability to maneuver there. This is essentially the reason that the nuclear submarine base is located in Kamchatka, since despite the major problems in supplying the base, its location allows the submarines direct access to the open sea.

1 A phrase coined during the Soviet era. This is a fleet that has strategic weapons, i.e. submarines (primarily nuclear), that are armed with ballistic missiles. Russia's other (and primary) strategic fleet is the Northern Fleet.



Figure 1: Map of east Asia and the naval bases that was mentioned

The appearance of Russian naval forces in the Far East

The Siberian Fleet was official established in 1799 according to the decision of the Russian Emperor Pavel the First. In 1849, it was stationed in Petropavlovsk-Kamchatskiy, which was established about one hundred years previously by Russian sailors who were mapping the country's eastern border. In 1871, the Fleet's main base was moved to Vladivostok as part of the efforts to develop Southern Siberia. In 1898, after the lease of Port Arthur from China (now the Lüshunkou District), the main headquarters of the maritime forces in the Pacific Ocean was moved there, and from that point onward these forces were composed of two main parts:

1. The First Fleet of the Pacific Ocean which stationed at Port Arthur; and
2. The Siberian Naval Squadron whose base was at Vladivostok.

The Russian naval forces in this theater were relatively weak. This is the result of insufficient investment in the forces in the Far East due to the theater's neglected position within Russia's threat perception and due to reasons that can be called "objective": the absence of any shipyards in the Far East (and the almost total lack of any real industry) and the fact that its ships are built in the Baltic Sea and must sail from there to the Pacific. Moreover, the low capacity of the land infrastructure, which connects between Russia's central regions and the Far East, has limited the ability to supply the forces in the Russian Far East.

The isolation of the theater from the main regions of Russia and its primary forces was a central factor in the Russo-Japanese war that broke out in 1904. When it became clear at the beginning of the war that Russia's naval forces in the Far East were unable to deal with the Japanese navy, a decision was made to reinforce them by dispatching a fleet from the Baltic Navy. The voyage of the fleet took about 8 months and during that time, Port Arthur fell and the reinforcements, on arriving in the theater of battle, found themselves cut off from the bases and sources of supply. The total defeat of the Russian navy in the Battle of Tsushima and the defeat of the Russian army by Japan led to the loss of some of Russia's strongholds in the Far East. Together with the decision to concentrate effort and resources on building up forces in the West to meet the growing threat from Germany, this essentially led to a major slowdown in the development of the Far East and the buildup of forces there.

The Soviet era

The Far East was the last region of Russia taken over by the Bolshevik regime – the Civil war continued there until 1921. Almost immediately on its completion and with the stabilization of the new government, the buildup of military power began in the region. This included the reestablishment of naval strength. The Far East Naval Forces were established in 1922 and continued to exist (with short interruptions) until 1935, when they became the Pacific Fleet. The significance of this change was that it "upgraded" the status of the naval forces in the region, which was now formally equivalent to a regional command. Apparently, the reason for this was the change in the form of the threat in this region. Until the beginning of the 1930s, China was perceived as the main threat (to the point of open and large-scale conflict in 1929) and the main attention of the Soviet leadership was concentrated on China's land forces. At the beginning of the 1930s, Japan began to occupy this position following its invasion of Manchuria and the entrenchment of its forces there. Although the main friction with Japan was on land and since the naval forces did not participate in the two conflicts between the USSR and Japan (in 1938 and 1939), the Soviet

leadership could not ignore the presence of the growing Japanese navy and the importance of the naval route linking Japan and its forces in Manchuria.

The signing of the Mutual Neutrality Agreement between the USSR and Japan on April 13th 1941 significantly reduced the level of tension in the Far East theater. Thus, in the autumn of 1941, as the German army approached Moscow, the Soviet could bring significant forces from the Far East in order to defend the capital. In the war between Russia and Japan, which began in mid-August 1945 and lasted only a few weeks, the function of the naval forces was quite limited: the fighting occurred mainly on land and the navy was primarily involved in a number of tactical amphibious landings of forces in China and Korea. In the final days of the war, it participated in the operation to take over the Kuril Islands.

The changes that occurred worldwide and in particular in the Far East following Second World War led to a change in the Soviet leadership's attitude toward the region. Prior to that, the threat in the Far East was perceived as secondary, although important. The start of the Cold War and the emergence of the US as Russia's main rival gave the Far East unique importance, particularly in light of the US Navy's control of the Pacific Ocean and the presence of the American army in Japan.² The experience accumulated by the Americans in the Second World War in carrying out amphibious landings and the landing of its forces in Korea in 1950 created a new threat in the eyes of the Soviets, namely an American intention to land forces on the Soviet coast, and the Far East was viewed by the Soviets as an ideal arena for American goals to be achieved.

Therefore, in the late 1950s and early 1960s, a program was initiated to transform the navy in the Pacific Ocean into a strategic fleet. In 1961, the navy received its first nuclear-powered submarine and the following decade saw a buildup of the fleet's forces. The Pacific Fleet began the newly-built missile-carrying surface vessels, and in 1978 it received the Minsk aircraft carrier, one of the USSR's first two aircraft carriers. The second aircraft carrier, the Kiev, was deployed in the North Sea.

The new ships were provided to the Pacific Fleet mainly from the Northern Fleet. The local building of ships was problematic due to the limited capabilities of the shipyards in the Far East. New ships, including both submarines and surface vessels, travelled to the Pacific Ocean by way of the Northern Sea Route. After that difficult journey, the ships required repairs and sometimes did not manage to cover the whole route in one sailing season. In such cases, there was a need to supply them

2 Захаров, С.Е. (Zakharov, S.) *Краснознамённый Тихоокеанский флот (The Red Banner Pacific Fleet)*, (Moscow, 1973), p. 252.

during their stay near the Bering Strait, and due to the lack of land transportation infrastructure the supplies were delivered by air.³

In the mid-1960s, the new threat from China was added to those which the Soviet forces in the Far East—and in particular the naval forces—were meant to deal with. The decline in relations with Communist China, which began in the previous decade, got the point where the two countries found themselves on the brink of war.⁴ New missions led to an expansion of the Pacific Fleet, primarily with respect to its land units which are part of the coastal defenses.⁵

Another component was added to the Pacific Fleet's activity in the early 1970s. Even prior to that, Soviet ships appeared in the Indian Ocean, but in 1971 a framework was specifically created for that purpose – the 8th Operational Squadron. It was under the command of the Pacific Fleet and its responsibility was the Indian Ocean and the Persian Gulf.

Following the breakup of the Soviet Union

Like the other parts of the Soviet armed forces, the Pacific Fleet was adversely affected by the economic crisis during the final years of the Soviet Union, a situation that reached its peak a short time after its breakup. Many ships, including the Minsk aircraft carrier and missile cruisers, which constituted the Fleet's main fighting capability, went out of service and were sold. During the 1990s, this theater was low on the Russian leadership's order of priorities, to the point that the fleet did not manage to maintain its strategic potential, and the active forces that remained in the theater consisted of only one strategic submarine.⁶ This was at a time when strategic nuclear forces were essentially the only component of the armed forces that the leadership was making a real effort to preserve.

The efforts to rehabilitate the armed forces, which was initiated by Putin towards the end of the first decade of his regime, was felt less by the Pacific Fleet than other fleets.

3 Амелько, Н.Н. (Amelko, N.) *В интересах флота и государства (In the Interests of the Navy and the State)*, (Moscow, 2003), p. 78.

4 In 1969, there were indeed a series of armed clashes on the border between the two countries. the forces of the Pacific Fleet were not involved.

5 Манойлин, В.И. (Manoylin, V.) *Базирование Военно-Морского Флота СССР (Deployment of the Navy of the USSR)*, (Petersburg, 2004), p. 171.

6 Иванов, В. (Ivanov, V.) "Тихоокеанский флот вооружится подводными стратегическими крейсерами" ("The Pacific Fleet Will Be Equipped By Strategic Submarines"), *Nezavisimoe Voennoe Obozrenie*, 2020, Mar. 23.

Currently, the forces of the Pacific Fleet include the following: one missile cruiser (out of a total of three Slava-model cruisers that were built back in the 1980s and which are currently the navy's flagships); one destroyer (another one being renovated); four frigates (with another under construction and which will be delivered in 2025); two corvettes (and another four, according to official estimates, which are in the late stages of construction or are being test run) which are primarily used for activity in "green water"; about 14 small missile boats that are intended only for green water; four strategic nuclear submarines; four nuclear attack submarines; six non-nuclear-propulsion submarines; and a number of landing vessels and auxiliary ships of various kinds. Periodically, there are reports in the media about various plans to strengthen the Pacific Fleet, including the rehabilitation of its strategic component⁷; however, in the meantime the only program that appears to be feasible in the near future is the reinforcement of the underwater component of the fleet with a number of Kilo submarines.⁸

Overall, a comparison of the level of investment in the Northern Fleet relative to that in the Pacific Fleet shows that the forces in the Arctic have a much higher priority among the leadership.⁹ A similar situation exists with respect to the "visibility" of the fleets in the media – reports on the activity of the Northern Fleet appear much more frequently than that of the Pacific Fleet.

Moreover, there are signs that the activity of the Northern Fleet is being expanded at the expense of the Pacific Fleet. Thus, in September 2020, the Northern Fleet held an amphibious exercise in the Bering Sea. A group of the Fleet's ships sailed from the North Sea to the Pacific Ocean by way of the Bering Strait and landed a force on a beach on the Chukotka Peninsula.¹⁰ It is worth mentioning that the Bering Strait served, until recently, as the boundary between the theaters of the two fleets. In this context, it is worth mentioning that the amphibious forces of the Northern Fleet are stationed permanently in the western part of its arena of activity rather near the Bering Strait.

7 Ibid.

8 Завершены государственные испытания подлодки "Петропавловск-Камчатский" ("The Tests of the Submarine "Petropavlovsk-Kamchatsky" Are Completed", *Kommersant*, 2019, Oct. 11.

9 For further details about the buildup in the North see: Mirkin, T. "Russia's "Arctic Strategy" As a Result of the Inter-Systemic Power Struggles", at: *Maritime Strategic Evaluation for Israel*, 2019/20, (Haifa, 2020).

10 Северный флот провёл учение по высадке десанта недалеко от Аляски ("The Northern Fleet Conducted Landing Exercise Not Far from Alaska") *Interfax*, 2020, Sep. 21. <https://www.interfax.ru/russia/727906>

This trend is not unique to the Russian navy. Russia's efforts to build up its forces during the past decade have been concentrated in the Northwest of the country, where in fact the military threat appears to be only imagined. This is often at the expense of the forces in the eastern part of the country, namely those opposite China, and some independent military commentators in Russia have been claiming for a while that it is in fact China that is the primary threat to Russia.¹¹

Conclusion

The reasons for the situation of the Pacific Fleet are apparently to be found both in the political domain and the domestic-military domain. With respect to the former, the forces in the Far East (to which the Pacific Fleet belongs) have been neglected due to the efforts to avoid any problem in the relations with China, which is viewed by many in the Russian leadership as a partner against the "hostile West". This perception is in line with the views of a not insignificant number of senior officers in the Russian army who continue to view the West as Russia's main rival and consider the end of the Cold War and the withdrawal of forces from Central Europe as having been a surrender to the West.

In the domestic-military domain, the situation is apparently influenced by the balance of power in the navy's leadership. Most of the senior officers in the navy during the last two decades arrived at the navy's headquarters after holding senior positions in the Northern Fleet. Thus, the setting of priorities and the division of resources are to a great extent determined by their interests as a group within the naval command. This is even manifested in the gap created in the fleet's status: while the Northern Fleet has been granted an independent status equal to that of the army's regional commands, the Pacific Fleet has remained part of the eastern regional command, whose commanders originate from the land forces.

At the moment, there does not appear much chance of a change in the situation, and therefore it may be that Russia will remain without any major naval power in the Pacific theater. It appears that major parts of the Pacific will remain under the control of the US navy and in those areas near to Eastern Asia, including the eastern areas of Russia itself, Russia will be able to do no more than watch the competition between China on the one hand and the US and its allies on the other for control of the sea.

11 Храмчихин, А. (Khranchikhin, A.) "Почему необходимо обезопасить восточные границы России" ("Why Is Necessary To Secure Russia's Eastern Border") *Nezavisimoe Voennoe Obozrenie*, 2018, Sep. 02; Гольц, А. (Goltz, A.) "Военно-дипломатические маневры" ("Military-Diplomatic Exercise"), *Ezhednevny Zhurnal*, 2019, Sep. 24.

Strategy and Culture in the South China Sea Conflict

Benni Ben Ari

This article describes the geostrategic and geopolitical situation in the South China Sea, the setting for a decades-long conflict over sovereignty between China and the other countries in the region. The article also surveys a number of strategies and actions taken by China, some of which are based on Chinese culture and history and which give China an advantage in the current conflict.

Past and Present

In April of 2020, at the height of the Corona pandemic, China published a list of names of 80 islands and shoals in the South China Sea. These were the historic Chinese names of the islands that are at the core of the prolonged conflict over sovereignty in the South China Sea and over the islands located in it. In a non-conventional move, 25 of the names were given to islands that include 10 sand-dune ridges (in Chinese: Sha), two small shoals and 13 shoals and reefs in the area controlled by Vietnam. Another 55 names were given to underwater mountains and ridges that are exposed only at low tide. According to international law, as it appears in the Convention of the Sea, (UNCLOS, 1982), China has no sovereign rights to these islands.

The determination of the restored names (the last time this occurred, in 1983, 287 names were determined for 287 geographic land formations) took place one day after China announced the establishment of two new administrative districts in the South China Sea, which will be under the 'Sansha' district. The two new districts are 'Xisha' and 'Nansha', which are the Chinese names for the 'Paracel' and 'Spratly' islands. This constitutes the creation of another fait accompli in the "strengthening" of China's claim of sovereignty. At the same time, China sent a research ship into waters over which Vietnam and Malaysia claim sovereignty, which constituted an open provocation.

At the same time, there was an incident in which a Vietnamese fishing boat was rammed and sunk by a ship of the Chinese coast guard. Chinese vessels also penetrated into Malaysian waters a number of times. US naval vessels patrol the region (since 2010) as part of the Freedom of Navigation Operations (FONOPS). The American presence was reinforced when President Obama declared the Pivot to Asia policy and since then the US has held naval and aerial exercises in the region. During 2020, there has been aerial activity involving helicopters and F35B aircraft, as well as B1 bombers, which are carrying out presence patrols in the region in order to demonstrate the US air force's ability to operate there. There are also patrols by

EP-3E and RC-135U planes (naval patrol planes and advanced intelligence planes). At the same time, the US is again issuing diplomatic protests against China activity, and the tension between the countries is rising. In contrast, the government of Malaysia announced that the Chinese research ship in its economic waters is operating according to law, and the President of the Philippines has announced his support of China, contradicting declarations by his foreign minister.

The US took a harder line starting on July 13th, 2020. Until that date, it took a neutral stance and only issued protests with regard to the conflict. The US also issued unambiguous diplomatic condemnations, including public recognition of the verdict by the Court in The Hague, handed down in July 2016. The US Secretary of State has declared that China does not have any legal basis for its activities in the region, such that the world will not allow it to relate to the South China Sea as China's "maritime empire". In addition, there is increased US military activity both in the air and the sea, which did not take place at all during the period 2012–15 and which is intended to demonstrate its capabilities and presence according to international law. This further intensified the tension in the region (although it should be mentioned that the US is not signed on the 1982 Convention of the Sea- UNCLOS).



Figure 1: the USS Ronald Reagan aircraft carrier, the USS Boxer amphibious assault ship and auxiliary ships in a naval exercise in the South China Sea, October 6, 2019¹

The US has no claims of sovereignty in the region, such that all of its activity is meant to show support for its allies and essentially is a show of opposition to China's aggressive actions, as part of its efforts to maintain the existing world order. It can

1 Richard Javad (22 November 2019), US, China sea tensions hit new boiling point, AsiaTime <https://asiatimes.com/2019/11/us-china-sea-tensions-hit-new-boiling-point>

be assumed that this activity is a result of the failure to resolve the problems and disagreements between China and the US through diplomatic means and of the increased tension between the countries as part of the trade war between them. Despite the presence patrols and the diplomatic protests, it appears that the US was too late in understanding the significance of Chinese activity, including the impressive buildup of power of the Chinese navy in recent years. Already at the end of 2019, the Chinese navy, according to the report of the US Congress Research Service, had 335 warships as compared to the 285 ships of the US navy.² According to a study by the US Naval War College, China will have 430 ships and 100 submarines in 2035, which is apparently double the number that the US will have. (On September 30, 2020, it was reported that a new program is being considered to enlarge the US navy, such that it will have 581 ships, in response to the growing threat from the Chinese navy).³ The apparently incorrect assessment (which is partly due to the weakness and lack of preparedness of US Intelligence with respect to the intentions of the Chinese Communist Party and the lack of intelligence and understanding regarding the decision-making process of the Chinese regime)⁴ that the artificial islands and weaponry deployed on them is not a serious or significant factor led to the long period of complacency. Thus, the Chinese essentially control the South China Sea at this point in time, and it is their intention to declare, apparently in the not too distant future, the region to be an Air Defense Identification Zone (ADIZ) (similar to the declaration made by China in the East China Sea in 2013).

The expansion of activity by US forces: The US navy, marines, army and air force all intend to challenge China's behavior. These activities can be classified into six groups, with some overlap between them: declarative actions (primarily freedom of navigation in the sea and the air); demonstration of presence (demonstration of force by means of ships, submarines and planes in patrol activity); intelligence activity for the gathering of information (by spy and patrol planes, submarines and oceanographic research); military exercises and training (by land, sea and air forces including cooperation with individual countries or exercises involving a number of

- 2 Steven Lee Myers(26 June 2020), China's Military Provokes Its Neighbors, but the Message Is for the United States, New York Times. <https://www.nytimes.com/2020/06/26/international-home/china-military-india-taiwan.html>
- 3 Paul Mcleary (30 September 2020), DoD Ponders 581-Ship Fleet, As Navy Shipyard Problems Persist, Breaking Defense. <https://breakingdefense.com/2020/09/dod-ponders-581-ship-fleet-as-navy-shipyard-problems-persis>
- 4 Adam Schiff (30 September 2020), The U.S. Intelligence Community Is Not Prepared for the China Threat, foreign affairs. <https://www.foreignaffairs.com/articles/usa/2020-09-30/us-intelligence-community-not-prepared-china-threat>

countries, some which are in the context of defense alliances); development and testing of operational and fighting tactics (in possible confrontations with China and relating to the South China Sea as a potential theater of battle); and deterrent activities (by amphibious task groups, battle groups of aircraft carriers, presence of nuclear attack submarines armed with ballistic missiles and flights of strategic bombers).

The Chinese naming of the islands and shoals is taking place at a time when the Association of Southeast Asian Nations (ASEAN) is, together with China, involved in the formulation of a Code of Conduct in the South China Sea. This process began as a demand in 1995 following the takeover by China of a shoal within the waters of the Philippines. China agreed in 1999 to begin discussions, which essentially only started in 2002, and at that time a document was published entitled the Declaration on the Conduct of the Parties in the South China Sea.⁵ The goal of this document was to ratify the understanding among all of the countries in the region with respect to maritime, practical and environmental matters in the South China Sea and their resolution, with the intention of establishing friendly relations and cooperation in the resolution of conflicts. The document was based on the joint declaration in 1992 by the ASEAN countries which is in turn based on a 1976 document entitled 'Treaty of Amity and Cooperation in Southeast Asia'.⁶ In 2018, the sides agreed that discussions should be completed and the code published in 2021. During the many years of discussion, the principles of the code and its clauses were not common knowledge and not within the public domain. The delays and deferral are the result of the Chinese negotiating policy not to produce an agreement, since China is liable to find itself in an inferior position, from the viewpoint of both the agreement itself and international law. It can be assumed that the completion and ratification of the document will be deferred due to the Corona pandemic.

Simultaneous with the aggressive activity of China and its position with respect to its rights to sovereignty, and despite difficult domestic problems as a result of the Corona pandemic, China has provided assistance and support to the ASEAN countries, some of which have been involved in protracted conflicts with China in the South China Sea. These activities included the provision of 100 million masks and

5 DECLARATION ON THE CONDUCT OF PARTIES IN THE SOUTH CHINA SEA, Association of South Asian Nations (ASEAN). https://asean.org/?static_post=declaration-on-the-conduct-of-parties-in-the-south-china-sea-2

6 Treaty of Amity and Cooperation in Southeast Asia Indonesia, Association of South Asian Nations (ASEAN), (24 February 1976). <https://asean.org/treaty-amity-cooperation-southeast-asia-indonesia-24-february-1976>

19 million biohazard suits, as well as an assistance grant in the amount of \$5 billion offered by the Asian Infrastructure Investment Bank (AIIB), which is an international investment bank in which China has a leading role and which is part of the Belt and Road Initiative (BRI). This phenomenon of separating aggressive diplomatic and military activity from economic activity and foreign policy is part of the history of foreign relations in Asia as far back as the imperial China.

At the annual conference of ASEAN in June 2020, the countries raised the concern that China intends to continue its aggressive activities. For the first time, they presented a united diplomatic front against Chinese activity and its demands for almost complete sovereignty in the South China Sea. The Prime Minister of Vietnam warned that the continuation of the conflict threatens regional peace in the areas of policy and economics and added that the uncertainty is a threat to peace and stability.⁷ The decision published by Vietnam (the current president of the organization) stated: *"We are reaffirming that the 1982 UNCLOS is the basis for defining maritime rights, sovereign rights, jurisdictional authority and the issue of legality of maritime territories."* In September 2020, the foreign ministers of ASEAN published a statement calling for the cessation of all illegal activities in the South China Sea, including the construction of the artificial islands and the deployment of weapons on them and the disruption of fishing, and called for a resolution of all problems according to the 1982 Convention of the Sea, again without any mention of China.

However, and despite the new US stance, its open and explicit support of the international court from 2016 and the intensification of its activity in the region, the ASEAN states have not changed their policy in practice and they did not go any further than simply making declarations.

There are also islands under the sovereignty of Vietnam, Malaysia and the Philippines...

Recall that the Chinese activities, which included the construction of seven artificial islands (nicknamed the Great Wall of Sand) in the Spratly island group starting in 2013 and their conversion into military strongholds, including airstrips, harbors and weapon and detection systems, were not halted by the decision of the International Court in The Hague, handed down in July 2016. Chinese diplomatic activity has

7 Bickerton, J. (11.09.2020), South China Sea: Beijing joins new negotiations in bid to prevent all-out war, Express. <https://www.express.co.uk/news/world/1333650/south-china-sea-news-Beijing-world-war-3-ASEAN-Vietnam-Philippines-conflict>

continued using the Chinese "salami-slice strategy" After creating facts on the ground, separate negotiations are held with each country and the outcome in most cases involves the provision of economic and military support to the complaining countries, which are using various means in order to resolve the situation; however, in practice, there is no change. The ASEAN countries have not managed over the years to come to a full consensus, which is the required method of decision making according to the ASEAN constitution. This is because Cambodia, Laos and Myanmar, which have close economic, political and military ties with China, have objected any decision that is not favorable to China.

Notwithstanding the impression that it is only China which is establishing facts on the ground, the other countries that are parties to the conflict have also taken control of a number of islands over the years. On some of these islands. there has been activity to transform them into "military outposts", as well as creating tourist and diving resorts there, with the goal of demonstrating presence and sovereignty. Vietnam and Malaysia are the main countries involved in these activities.

While most of the islands in the Paracel group have been under Chinese control since the mid-1950s and full control was achieved in 1974 following a military confrontation with South Vietnam, the situation in the Spratly Islands is more complicated. Apart from the problem of identifying the natural dryland formations, the shoals, the rocks and the sand dunes, most of which are above water only during low tide, the involved countries have taken various steps to establish their presence in the islands. This has been accomplished by the construction of facilities for the temporary or permanent housing of small military forces, the construction of observation towers and lighthouses that remain above water even during high tide and by means of patrols carried out by the navies and coast guards, and in particular by means of intensive fishing activity. In view of the claims of sovereignty by a number of countries, the legal situation is unclear. It is unclear which country has sovereignty and whether these shoals and reefs fit the definition of a "habitable island" as specified in the Convention of the Sea, which would make it possible to demarcate sovereign waters.

Since 1988, Vietnam has taken control of 21 dryland formations, including shoals, rocks and sand dunes, on which it has established 34 structures. It has created platforms of between 100 and 250 square meters on some of them, made of wood or metal and built on piles. Vietnam considers some of them to be part of the Spratly islands within its Exclusive Economic Zone, according the definition in the 1982 Convention of the Sea.



Figure 2: Vietnamese "outposts" on shoals in the Spratly Islands⁸

The Philippines controls nine of the Spratly Islands and maintains a presence on them. Of those, eight are above the surface even at high tide. Since 1978, it has stationed small military units (of four soldiers) on five of the islands and shoals. On a different island, called the 'Second Thomas Shoal' (only exposed during low tide), they have placed an old landing craft onto the shoal which serves as an outpost for the soldiers that guard the island and maintain a presence.



Figure 3: A military outpost and observation tower on the Flat Island under Philippine sovereignty and the "grounded" landing craft on the Second Thomas Shoal

Since 1970, Malaysia has been demonstrating its sovereignty on five islands and has built facilities on them which are manned by naval commandos. It built a runway on the Swallow Reef island and has turned it into a tourist and diving resort.

Brunei is claiming sovereignty on only one coral atoll in its economic waters and in a 2009 agreement with Malaysia, which is also claiming sovereignty over this oil-rich area, it obtained control over 'Louisa Reef', which includes two areas of oil exploration.

8 Spratly Islands — a zone of possible military conflict in South-East Asia, (2 August 2013), Survincity. <https://survincity.com/2013/08/spratly-islands-a-zone-of-possible-military/>; Lighthouses of the Spratly Islands. <https://www.ibiblio.org/lighthouse/spr.htm>



Figure 4: The Malaysian island of Swallow Reef⁹

OCCUPANTS* ● China ● Malaysia ● Philippines ● Taiwan ● Vietnam ○ Reported reclamation/construction



Figure 5: Islands and shoals in the Spratly Islands and under the sovereignty of five countries¹⁰

The country that is most determined in responding to the Chinese activity in the region is Vietnam, which has been a communist country for many decades and is closely aligned ideologically and politically (ostensibly, at least) with China. Nonetheless, it has taken a leading role in responding to Chinese aggression. Vietnam

9 Adrian David (4 march 2019), How Malaysia's five naval stations at Spratlys were built, New Straits Time. <https://www.nst.com.my/news/nation/2019/03/465854/how-malaysias-five-naval-stations-spratlys-were-built>

10 Greg Torode and Manuel Mogato, (29 May 2015), One thing people don't realize about the disputed islands on the South China Sea, Reuters. <https://www.businessinsider.com/r-civilians-emerge-as-pawns-in-south-china-sea-legal-chess-game-2015-5>

differentiates between responding to the Chinese activity and its overall political, economic and even military relations with China. This differentiation has an effect on the character of the responses, which primarily take the form of diplomatic protests. Nonetheless, Vietnam has recently adopted a more aggressive stance, particularly in the encounter between its fishermen and Chinese coast guard vessels; however, in all of the incidents it is in an inferior position.

China's policy and behavior in a crisis

During the decades of the conflict in the South China Sea, China has adopted various strategies, according to the circumstances and the geopolitical situation, and its foreign policy and military activity are determined accordingly. In some of the cases, China has acted aggressively and with determination while in others it has adopted less of a hard line that it could have. But there is no doubt that all of its actions are connected to China's growing power, whether in the economic arena, the international arena or the military arena. Its policies are intended to challenge the status of the US in general and in particular to achieve full control in the South China Sea.

One of the main elements in China's behavior in the South China Sea conflict has been to maintain an impressive military presence. This has been manifested in "policing" operations by the coast guard and the navy against the countries in the region and the presence of tens of thousands of fishing boats, as well as the construction of the artificial islands and their militarization and in particular the naval exercises that have included advanced naval vessels of every type, including nuclear submarines and aircraft carriers.



Figure 6: Exercises of the Chinese navy in the South China Sea, September 2020¹¹

11 Aw Cheng Wei (18 September 2020), China can safely drop nine-dash line in South China Sea and win friends in Asean: China expert, The Straits Time (Photo AFP). <https://www.straitstimes.com/asia/se-asia/china-could-safely-drop-nine-dash-line-in-south-china-sea-and-win-friends-in-asean-china>

The goals of the Chinese Communist Party are to maintain social stability with the goal of preserving its status and regime. This is also the purpose of its foreign policy in recent years, which is working to rehabilitate and improve China's global status and restore Chinese position in the world as at historic imperil China. China's behavior in the South China Sea conflict is part of its strategy to wipe out the "Century of Humiliation"¹². In addition to the region's strategic importance as a primary sea route for the transport of goods and energy, in addition to its role as the line of defense for southern and western China (AD/A2), the region has major economic importance for China, primarily with respect to fishing and deposits of oil, gas and minerals.¹³

The statements of China in various forums, and primarily its assertive behavior on the basis of the declaration of Chinese indisputable sovereignty over most of the territory in the South China Sea, are illustrated by the words of the Chinese Foreign Minister already in 2010 at an ASEAN meeting: "China is a large nation and all the rest are small nations and that is a fact." In view of this statement and Chinese behavior, it appears that China is adopting the position of the "neighborhood bully". But its foreign policy is essentially based on, among other things, a strategy that was adopted hundreds of years before the start of the South China Sea conflict and has been updated and honed over the years. At the core of the Chinese strategy is the definition of National Core Interests which include issues on which China will not make any concessions or compromises. The first and foremost issue is the stability of the Chinese Communist Party and the socialist system. The second is the protection of its sovereignty, its territorial integrity and the unity of the Chinese people. The third is social and economic development. As necessary, China will use force, as a last resort, in order to protect these interests.

The strategy of "hardening the hard, softening the soft"

The strategic approach is built on two policy elements simultaneously: the first is the uncompromising and rigid approach to issues that are a Chinese National Core Interest and the second is a flexible and more tolerant approach that includes cooperation and a negotiating process on issues that are of secondary importance.

12 The century of humiliation, also known as the hundred years of national humiliation, is the term used in China to describe the period of intervention and subjugation of the Chinese Empire and the Republic of China by Western powers, Russia and Japan in between 1839 and 1949

13 For further discussion of the Chinese interests in the region, see Benny Ben Ari (2018) "Asian culture and developments in the South China Sea," Maritime Strategic Evaluation for Israel 2017/18, Shaul Chorev and Ehud Gonen (eds.), pp. 56–72, Haifa University.
https://hms.haifa.ac.il/images/reports/EN_Report_2017_18.pdf

This double strategy is known as "hardening the hard, softening the soft" (HHSS). China has been using this strategy for many years in the conflict with Taiwan: on the one hand, it has adopted a longstanding and rigid policy against Taiwan's independence, primarily in the political sphere and based on a military threat, and on the other hand it has encouraged economic and cultural activity between Taiwan and China. China is behaving in a similar manner in the conflict with the Philippines, Malaysia and primarily Vietnam over sovereignty. China's policy is to invite these countries, which are also claiming sovereignty, to cooperate and to be part of an effort to resolve the conflict through negotiations; however, in practice, it blocks any attempt at resolution that is not aligned with its interests. At the same time, China hints that it will not hesitate to use force in order to maintain its sovereignty, and it is sending clear messages that any attempt at opposition will lead to a dead end while cooperation will lead to benefit for the involved countries. Here again, the Chinese policy is following examples from ancient doctrines of warfare and adopts these policies for offensive activities.

Chinese President Xi Jinping has strengthened China's position in the international arena and has achieved greater "self-confidence" in its foreign policy, which has become less passive and more aggressive. Thus, the element of "forging ahead actively", which is in line with Xi's vision, has been added to China's foreign policy. This is a new kind of foreign policy, an Asian doctrine of security and a diplomatic policy of a superpower with Chinese characteristics. The South China Sea conflict (like that in the East China Sea) is defined as a National Core Interest and as a consequence the activities of island-building were intensified, and of course the ruling of the International Court in the Hague was rejected out of hand. At the same time, China has intensified its activities to promote economic cooperation and first and foremost the BRI and the creation of the Asian Infrastructure Investment Bank. Similarly, emphasis has been put on China's relations with the ASEAN countries, primarily with the intention of reaching understandings and agreements on issues on which there are differences of opinion with regard to sovereignty and the operation of ships in the South China Sea. On these issues, China is insistent that foreign players are not involved. An example related to China's naval buildup of power on the basis of the HHSS strategy is the secret agreement signed between China and Cambodia, which is a member of ASEAN, and the establishment of a port and a naval base at Ream next to the port of Sihanoukville in Siam Bay, not far from the large new airport being built by a Chinese company.¹⁴

14 (2 October 2020) CHANGES UNDERWAY AT CAMBODIA'S REAM NAVAL BASE, CSIS.
<https://amti.csis.org/changes-underway-at-cambodias-ream-naval-base>

"Wolf warrior" diplomacy

In March 2020, the economic, political and social elite of China met in Beijing for the main annual political conferences – the National People's Congress (NPC) and The Chinese People's Political Consultative Conference (CPPCC). One of the outcomes of the discussions was the adoption of a new foreign policy in response to criticism from other countries, and primarily the US, against Chinese policy on various issues, primarily international ones, but not only (the South China Sea, the East China Sea, the Hong Kong crisis, the Corona crisis and the Muslim minority crisis in Xinjiang). The strategy was given the name "Wolf Warrior", a diplomatic and political attack that was intended as a response to "evil" accusations and slander and to protect China's national prestige. The expression of this concept by Chinese ambassadors and the Chinese Foreign Ministry in the US, Australia, Germany, Canada, France, Britain and elsewhere, where it was received with surprise, was a complete turnaround from the "calm" diplomatic language that had been used in Chinese diplomacy for many years. The content and style of the statements by some of the Chinese diplomats led essentially to a rise in tension, primarily with the US. It appears that this policy has caused more harm than good for China's international status and therefore it can be assumed that its main goal was to support the nationalist approach for domestic policy purposes, as part of the effort to preserve the image of the Chinese Communist Party.



Figure 7: The "Wolf Warrior" policy¹⁵

15 Cartoon by Rebel Pepper (1 June 2020), China's Wolf Warrior Diplomats: Is Life Imitating Art?, Radio Free Asia. <https://www.rfa.org/english/cartoons/china-wolf-warrior-cartoon-06012020163820.html>

The Defensive Realist Theory

The behavior of China in the South China Sea (claims of sovereignty, construction of the artificial islands and the activities against the countries in the region) and the buildup of the Chinese navy in terms of both size and capabilities appear to indicate that China is adopting a policy of "offensive realism".¹⁶ This theory states that a country develops political and military power and then seeks regional hegemony. But it may in fact be that the opposite theory better explains China's behavior and the strategy it is adopting. According to "defensive realism", a country that is building up its military power will make threats farther and farther away from its borders, with the main goal of its political and military activity being security rather than power or hegemony. The history of the Chinese navy since its founding in 1949 points to a focus on activity at greater and greater distances from China's coasts. This began with a focus on defending against Taiwan and later against Russia. In 1995 (the year of a crisis in the Taiwan straits and other global crises), there arose a need for protection against the US. At that point, the navy was given the necessary budgets and it developed itself into a large and modern force; at the same time, the "maritime militia" grew in size and improved its capabilities. Since 2005, the navy has expanded westward and it has participated in operations against piracy in the Gulf of Aden and in the evacuation of Chinese citizens from Libya in 2012 and Yemen 2015. The navy's main activity is in support of its claims of sovereignty in the South China Sea, to impede the maritime activity of other countries in the region and to disrupt and provoke fishing activity and oil exploration and drilling. The threats and the provocations and of course the construction of the artificial islands constitute a strategy by which China is trying to create sovereign facts and to set the terms of any future negotiations in its favor.

The Grey Zone strategy

The Grey Zone strategy involves the activities of one country trying to harm another, but which fall short of acts of war. The US Special Operations Command published a white paper in which it defined a grey zone as one in which there can be: "competitive interactions among and within state and non-state actors that fall between the traditional war and peace duality."¹⁷

16 In the field of international relations, the term denotes a doctrine according to which the nature of countries is selfish and self-interested and every country emphasizes the development of military power. According to the realistic school, a country's actions are motivated by a desire to achieve political or military power rather than by ethical principles or idealism.

17 Philip Kapusta (9 September 2015), White Paper -The Gray Zone, UNITED STATES SPECIAL OPERATIONS COMMAND. <https://info.publicintelligence.net/USSOCOM-GrayZones.pdf>

The aggressive actions to demonstrate presence and primarily the construction of the artificial islands are part of China's efforts since 2015 not to involve military forces in these activities but rather to use "little blue men."¹⁸ Since the activities are "against" civilian targets, namely fishermen and oil exploration and drilling ships, and also include the construction of the artificial islands, this was originally a maritime civil engineering endeavor.

There were five Chinese civilian maritime authorities operating in the South China Sea up until 2013, for the purpose of both showing presence and dealing with events in the conflict: The Maritime Police; Maritime Surveillance; the Fisheries Law Enforcement Command; the Maritime Anti-Smuggling Bureau; and the Maritime Safety Administration. As the situation developed and activity increased in the area of the Spratly Islands and as a result of the complex relationships between the various organizations and the fact that they report to five different government ministries, the five bodies were united into the Chinese coast guard. Although it is primarily a civilian body, but many of its vessels are armed and it essentially "reports" to the navy. It has a larger number of vessels than any parallel body in the South China Sea and it is as large as the Japanese coast guard. If the plans for enlarging the coast guard are implemented, then in the next decade its total tonnage will be larger than that of the US and Japanese coast guards combined.

The Chinese coast guard is an almost regular participant in any event that involves the vessels, research ships, oil drilling ships and fishing boats of countries that are party to the conflict. Essentially, China has three navies in the South China Sea as part of the Grey Zone Strategy and they are put into play as needed according to the "Cabbage Strategy"¹⁹: The People's Liberation Army Navy (PLAN), the consolidated coast guard and the "maritime militia" which is a fleet of hundreds of thousands of fishing boats, some of which are armed and which are operated by fishermen who have been drafted into the navy. By means of these three navies, China is able to cover the entire range of required maritime activities.

18 Franz-Stefan Gady (5 November 2015), 'Little Blue Men:' Doing China's Dirty Work in the South China Sea, The Diplomat. <https://thediplomat.com/2015/11/little-blue-men-doing-chinas-dirty-work-in-the-south-china-sea/>

19 It is a tactic to overwhelm and seize control of an island by surrounding and wrapping the island in successive layers of Chinese naval ships, China Coast Guard ships and fishing boats and cut-off the island from outside support

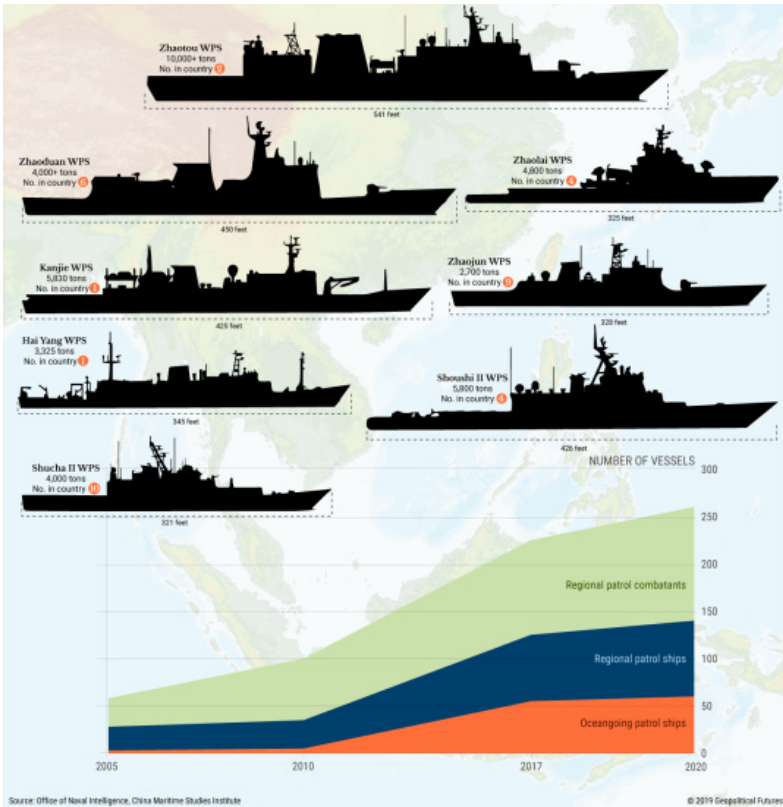


Figure 8: The growth in the number of ships in the Chinese coast guard²⁰

The "maritime militia" has existed in China since 1949 when the country did not have any significant naval forces. The militia is meant to protect the shores of China and was part of the Community Party's doctrine of the "People's Army", according to which all of the people's resources are utilized for the benefit of the State. This unique organization was trained by the navy and came to be called the People's Armed Forces Maritime Militia (PAFMM). Its actual size is unknown, but it is estimated to be approximately more than 600,000 ships and boats²¹. The militia is under the direct command and control of the navy and has become a significant player in the South China Sea and the East China Sea.

20 Phillip Orchard (), Will the US Coast Guard Enter the South China Sea 'Grey Zone?'. <http://gonzaloraffoinfonews.blogspot.com/2019/04/will-us-coast-guard-enter-south-china.html>

21 Kraska, J., 2020, There is no universal definition for naval auxiliaries, but such ships are subject to the same treatment as warships during armed conflict, The Diplomat. <https://thediplomat.com/2020/07/chinas-maritime-militia-vessels-may-be-military-objectives-during-armed-conflict>



Figure 9: The navy, the coast guard and the maritime militia in the South China Sea²²

It is important to mention that the "maritime militia" constitutes a significant operational challenge to the American and other navies operating in the region, since this is ostensibly a civilian body that includes only fishing vessels.

The Grey Zone strategy is implemented by China in the contested areas by "little blue men", a nickname taken from the Russian activity in the Crimean Peninsula and which refers to military forces camouflaged as civilians (The Little Green Men). In contrast to a conventional military confrontation, the confrontational strategy in the Grey Zone does not seek to achieve all of the objectives in one battle, but rather in asymmetric warfare, by acts that appear ambiguous and unclear and in stages that dictate the progress towards achieving an advantage. In the US view as of September 2018, China essentially controlled the South China Sea in all of the possible scenarios, apart from all-out war with the US.²³

22 (18 April 2016), PLA navy stages combat drills in South China Sea, ejinsight. <https://www.ejinsight.com/eji/article/id/1285724/20160418-pla-navy-stages-combat-drills-in-south-china-sea>; Asian Military Review. <https://asianmilitaryreview.com/wp-content/uploads/1-Haijing-3901.jpg>; Tyler Durden, (29 April 2019), "Warning Shot Across The Bow:" US Warns China On Aggressive Acts By Maritime Militia, Zero Hedge. <https://www.zerohedge.com/news/2019-04-29/warning-shot-across-bow-us-warns-china-aggressive-acts-maritime-militia>

23 Beech, H. (20 September 2020), China's Sea Control Is a Done Deal, 'Short of War With the U.S., The New York Times. <https://www.nytimes.com/2018/09/20/world/asia/south-china-sea-navy.html>

On the basis of the recognition of China’s military capabilities, the US has adopted a strategy for the Grey Zone that is comprised of tactics in which it has an advantage and which provide a solution in potential conflicts as China’s military power grows, while avoiding any direct confrontation with China’s Grey Zone strategy.

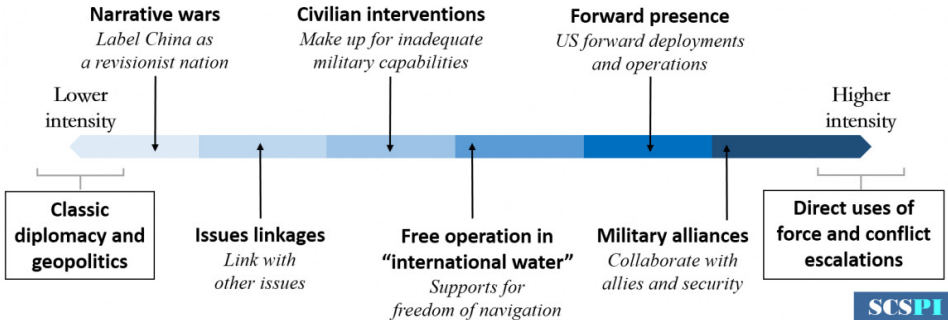


Figure 10: A spectrum of US Maritime Gray Zone Strategies against China²⁴

Conclusion

In Asia and in particular Southeast Asia, there have long been maritime territorial disagreements without any visible resolution. This situation will apparently continue, due to reasons that include, among others, past events in which countries were humiliated by foreign superpowers during the colonial period, in addition to subsequent confrontations between the countries of Asia, which have usually ended in stalemate rather than a decisive victory for one side or the other. This is also expected to be the case in the South China Sea. This conflict, in which China has been claiming sovereignty on the basis of a 1947 map, has lasted for more than 70 years and only in 2020 did the US adopt a clear and aggressive stand based on the claim that China’s demands are not legal.

It appears that the balance of power is tilting in favor of China whose aggressive efforts to realize its demand for sovereignty in the South China Sea show no sign of flagging. This is in spite of the fact that it has recently adopted more moderate and positive responses; nonetheless, it still defines this issue as a National Core Interest that is not open to negotiation or compromise. Even the global Corona pandemic, which began in China, and its deleterious effect on China’s economic situation, has not changed its geopolitical policy. The timing of the latest announcement—of the names for the shoals and reefs in the South China Sea—simultaneous with other aggressive

24 Yong, C. 2019, US Maritime Gray Zone Operations against China <http://www.scspi.org/en/dtfx/1571134316>

moves, is apparently not a coincidence, but rather is related to the behavior of the regime in China, i.e. the Communist Party, at the beginning of the Corona pandemic, namely the initial concealing of information and the serious harm to the economy. Although these are not sufficient reasons for a threat to the Party from the public, the announcement appears to be an attempt to use the "weapon of nationalism and honor" in order to improve the image of the regime among China's citizens. In addition, the US has accused China of exploiting the global Corona pandemic in order to continue its illegal activities in support of its claim for sovereignty. Indeed, while the world is preoccupied with the Corona pandemic, China is taking aggressive action primarily in locations where it is claiming sovereignty – not just in the South China Sea but also with respect to Taiwan, India (on the Himalayan border) and in Hong Kong. There is no doubt that China's growing naval power in recent years constitutes an important factor in the management and realization of its aggressive policy in the South China Sea.

The struggle in the South China Sea is also part of the American opposition to China as a rising superpower in the international arena. The American strategy is to contain²⁵ China and for its part is continuing to maintain a military presence in the region, both in the air and the sea. It has maintained a presence there basically since 1940 and there are those who doubt that its activity was intensified in order to enhance American messages regarding its status in the area. It is worth mentioning that the presence patrols are an essential activity of the US navy in order to maintain the law of the sea, but they are not meant to eliminate the operational potential of the islands nor do they have the power to do so. The goal of the patrols (which are carried out also in other areas of the world) is to maintain global freedom of maritime navigation. However, Freedom of Navigation in the South China Sea is being maintained and is not being challenged by the Chinese navy or by anyone else. China will only be harming itself and its maritime presence if it interferes with freedom of navigation, and even the militarization of the artificial islands is not really meant to achieve that. Therefore, the frequent patrols and grandiose exercises by the US at a time when tension with China is growing will indeed emphasize that freedom of navigation must be maintained, although these activities are liable to bring about an unnecessary military confrontation by accident.

25 Containment is a geopolitical strategic foreign policy pursued by the United States. It is loosely related to the term *cordon sanitaire* which was later used to describe the geopolitical containment of the Soviet Union in the 1940s. The strategy of "containment" is best known as a Cold War foreign policy of the United States and its allies to prevent the spread of communism after the end of World War II.

From a geostrategic perspective, and primarily a military one, it appears that the US has "fallen asleep at its post" and did not correctly assess China's intentions, including both the development of its navy and its sophisticated weaponry and the construction of the artificial islands, which are today a *'fait accompli'*. This is perhaps a general intelligence failure with regard to China. And although in theory the islands and the infrastructure built on them appear to be "stationary targets" that can easily be destroyed, in the case of a rise in tension and even prior to a descent into military confrontation, the islands constitute a genuine problem of A2/AD and they allow China to control the region under various scenarios.

China is implementing the HHSS strategy in the South China Sea primarily in view of the lesson it learned from the Taiwan crisis. But it is also learning from the management of international crises in the distant past of the imperial dynasties – to win the support of rivals in a time of crisis. The increase in US activity in the region, which is viewed in China as a direct threat, also forces China to adopt a clearer regional policy, which supports the restoration of China's senior regional status and at the same time protects its claims of sovereignty in the South China Sea. All this is to be viewed against the background of the changing strategic balance in the region. There is no doubt that the result of this strategy also contributes to maintaining and improving the image of the government, i.e. the Communist Party, in the eyes of the public in China.

Although China is presenting a story that there is harmony and regional understanding as reflected in the slow and prolonged process to reach agreement on a mutual Code of Conduct, it appears that the chances of developments that will lead to a military encounter are growing, depending on Chinese actions and the response of the countries directly involved in the conflict. Although the Code of Conduct is meant to produce clear rules for maritime security and freedom of navigation in the South China Sea and will enable the South China Sea countries and China to build mutual trust, to manage crises and unexpected incidents, to enhance cooperation and to maintain regional stability, the matter is still under discussion. There is plenty of doubt as to whether the discussions will be finished in 2021, as planned.

The rivalry between China and the US in the South China Sea has undoubtedly reached a higher level, particularly after the recent and dramatic change in policy regarding the conflict. Only four years after the ruling in The Hague, it was declared on June 13th 2020 by US Secretary of State Pompeo and then confirmed by US Secretary of Defense Esper that China is openly violating the law with respect to the nations of the region. The creation of a coalition of the states in the region that is liable to generate a confrontation and even a state of war is not a reasonable

option, and in response to the demonstration of strength by the US, China is holding military and naval exercises and is showcasing its ballistic aircraft-carrier killer missiles.²⁶ Nonetheless, it can be assumed that a violent clash between the Chinese maritime militia, with the backing of the coast guard or the navy, and Vietnam or the Philippines for one reason or another will probably include American involvement and this is not a question of if but rather when.

Neither does the call to create a broad coalition of the countries in the region that are involved in the conflict with China get much support, except from Australia and Japan who are willing to participate in presence patrols, but without entering the territorial waters of the islands. The rest of the states in the region, and primarily the South China Sea countries, are "uncertain" about the move since it may damage essential relations with China. In recent years, there has been a significant increase in diplomatic protests, including by countries that are not a party to the conflict, such as Australia, Indonesia and the US. China itself has also registered protests. Most of the protests from the various states are based on definitions in maritime law according to the Convention of the Sea (UNCLOS 1982). More aggressive involvement by the US is not certain to be a permanent strategy over time.

China views the current situation (in October 2020) as stable and its control over the islands as a fact and it will continue its activities in the region according to the method of "divide and conquer" and other traditional diplomatic policies. Similarly, it will continue to blame the US for undermining stability for its own geopolitical purposes. Although there have already been calls from the academia in China to abandon the "nine-dash line"²⁷ and to reinforce China's "soft power", it can be assumed that this will be opposed by the security establishment and primarily the Chinese army.

From Israel's perspective, the conflict in the South China Sea is not a factor that immediately affects its policymaking since it can be assumed that the freedom of navigation in the South China Sea will not be harmed and neither will be shipping in the Indian Ocean, on its way to the Red Sea. If the situation between China and the US deteriorates on a global geopolitical level and Israel is forced to take a stand and

26 H in Sutton, (3 September 2020), Chinese Navy May Be First to Get Ballistic Missiles, Forbs. <https://www.forbes.com/sites/hisutton/2020/09/03/chinese-navy-cruisers-may-be-first-to-get-ballistic-missiles/#45a9ed4c372a>

27 For further discussion of maritime boundaries in the South China Sea, see Benny Ben Ari (2018) "Asian culture and developments in the South China Sea," Maritime Strategic Evaluation for Israel 2017/18, Shaul Chorev and Ehud Gonen (eds.), pp. 56-72, Haifa University. https://hms.haifa.ac.il/images/reports/EN_Report_2017_18.pdf

perhaps reduce its economic and other ties with China, even then it is not expected that maritime traffic to and from Israel in the Indo-Pacific region will be adversely affected. The situation could change if the US enters into a conflict with China that leads to the use of force, with or without their allies. In that case, it is possible that the traffic of commercial ships in the South China Sea will be interrupted for a short or perhaps long period. However, such an eventuality is highly unlikely.

Section Two: Focus on Turkey

In view of the importance of Turkey and the role it is filling in the eastern basin of the Mediterranean Sea, we chose to dedicate a separate chapter to Turkish maritime policy. Turkey today is, in a sense, the main challenge in the eastern Mediterranean Sea. President Recep Tayyip Erdoğan whose worldview supports the Muslim Brotherhood and the Hamas, is changing Turkey's orientation from a Western one, moving it eastward, making it difficult for the European Union to accept it as a member, and threatening its relations with NATO, of which it is a member. A prominent sign of all this is Turkey's purchase of the S400 air defense system from Russia, despite the warnings of the American president. To the protracted dispute Turkey has with Cyprus and Greece has now been added a significant naval component – Cyprus' exclusive economic zone, which is rich in gas deposits. Turkey has opposed Cyprus' efforts to search for oil and gas in the disputed waters (see the references to NATO in the chapter on global developments).

Erdoğan heads the Justice and Development Party (AKP), which is basically undermining Atatürk's 1923 revolution. That revolution sought to transform Turkey from an eastern empire headed by a sultan who was an Islamic caliph into a modern democratic secular state. In addition to aligning itself with Russia at the cost of its relations with Europe and the US, Turkey opposed, at the beginning, the US request to its allies to stop importing Iranian crude oil. Later, however, Turkey acceded to the American request.

As part of its new policy toward the East, Turkey is developing, among others, a base in Doha, Qatar, a step that will allow Turkey to enter a small group of countries that are prepared and able to radiate power in the Persian Gulf. Erdoğan supports the Hamas' attacks on Israel. He regularly condemns Israel using antisemitic terms. Nevertheless, Israeli–Turkish trade and tourism are strong. Trade between the two countries grew by 130 million dollars in the first quarter of 2019. Travel by Israelis to Turkey in 2018 was 16% higher than the previous year. Turkey's military strength and power and its economic importance in the region, its process of reorientating itself toward the East, its distancing itself from NATO, its adoption of standards and norms that are not Western, and its regional activities, which are disruptive activities – are reasons for concern by the European states, and mandate continual monitoring and close coordination between the US and Israel.

The Turkish Navy – Its strengthening process and operational doctrine

Shlomo Guetta

Over the past year, against the background of the adoption of the "Blue Homeland" doctrine and the nostalgia about the Ottoman Empire,¹ we have been witnessing relatively large-scale operations by the Turkish navy in different areas of the eastern Mediterranean Sea, the Aegean Sea and the Black Sea. Beyond the extensive operations in these seas, we can also see a Turkish trend to set up bases and establish maritime outposts in northern and eastern Africa and the Persian Gulf such as a naval base in the port of Misrata in Libya, a naval base in Qatar, a naval base in Somalia, and an unsuccessful attempt to establish a naval base in Sudan. Moreover, we note the obvious military presence including a naval presence in TRNC (Turkish Republic of Northern Cyprus), in the northeastern part of the island of Cyprus, which is a Turkish protectorate.

Accordingly, it is worthwhile highlighting the present strength of the Turkish navy and its ongoing enlargement process, which today is at an advanced realization stage and that is expected to continue in the near term. The Turkish maritime component is becoming an significant factor that may eventually constitute a challenge for neighboring states in the eastern Mediterranean, including the state of Israel and its Navy.

Historical background

The Turkish navy draws its heritage from the Ottoman navy that reached its pinnacle of power and achievements between the beginning of the 14th century and the middle of the 17th century. The Turkish people were originally 'men of the plains' but they recognized the importance of the maritime domain to their expansion and, therefore, the Turkish sultans very quickly drafted pirates who agreed to raise the Ottoman flag into their service to fight their maritime battles. During the height of

1 Regarding the "Blue Homeland" doctrine and the President of Turkey's nostalgia about the country's Ottoman past, see the chapter herein by Omri Eilat and Ayal Hayut-Man, The Turkish maritime doctrine (Mavi Vatan). For more information about the main concept in the "Blue Homeland Doctrine", see footnote 4, below.

the navy's success, except for one rout at the Battle of Lepanto (October 1571),² the Turkish navy cast its shadow in different areas throughout the world, including being active in the Atlantic and Indian Oceans.

Between the 17th and 18th centuries, the Ottoman navy focused on the Mediterranean Sea, the Black Sea, the Red Sea, the Persian Gulf and the Arabian Sea. In the 18th century, the navy entered a period of stagnation while at the beginning of the 19th century and beyond, a further deep-felt drop in the power of the Ottoman navy occurred and it even beseeched the help of the Ottoman Empire governor in Egypt—Muhammed Ali, both in the Red Sea region and in the Greek archipelago region.

Due to lack of space, we will not review all the milestones in the history of the Ottoman navy. We just note that during the 19th century the navy suffered losses such as the Battle of Navarino, on the western shore of the Peloponnesian peninsula, in Greece, in 1827, when a joint Egyptian-Ottoman navy engaged the British, French and Russian navies. Later on, during the Egyptian battle to conquer the land of Israel, the Levant and Asia Minor, the Ottoman navy was captured when its commander surrendered at the Battle of Alexandria. Another loss to the joint Egyptian-Ottoman navy occurred during the Battle of Sinop in 1853, when it engaged the Russian navy in the Black Sea during the Crimean War.

Toward the end of the 19th century, Germany consented to rehabilitate the Ottoman army including its maritime component. During World War I, the Ottoman Empire joined the Central Powers, led by the German Empire, which extended maritime aid and advisors to the Ottoman army during the war. At the end of the war, despite the Turkish success in averting the allies landing during the Gallipoli campaign, the Ottoman Empire broke apart, and its imperial navy ceased to exist. In August 1920, the Treaty of Sèvres was signed with Turkey. Between 1919–1922, the Turkish "war of independence" was waged, led by Mustafa Kemal, a Turkish hero from the Gallipoli campaign.

We will not expand on the maritime aspects of the Turkish civil war, but only note that at the height of the war, on July 10, 1920, the foundations for the establishment of the modern Turkish navy were laid. About three years after this, in October 1923,

2 The Battle of Lepanto was a large sea battle that took place on October 7, 1571 between the Christian "Holy League", comprising the united forces of Venice, Spain, and the Papal State, and the Turkish navy (the Ottoman Empire), near the Greek coastal city of Lepanto. This was the last major maritime battle in the history of naval warfare using rowing vessels. The engagement took place near the northern coast of the sea strait connecting the Gulf of Petras and the Gulf of Lepanto (today the Gulf of Corinth).

Mustafa Kemal (who then became known as Mustafa Kemal Atatürk—*The father of the Turkish nation*) proclaimed the establishment of the Republic of Turkey.

During World War II, the Republic of Turkey remained neutral and postponed joining the Allies until February 1945. In 1950, Turkey sent armed forces to join the US in the Korean War, and as a result of this and also because of Turkey's strategic importance in controlling the Bosphorus and Dardanelle straits, it joined NATO in February 1952. Since then and up until today, it has been and continues to be part of the NATO fleet, alongside the Greek navy, its longstanding traditional enemy.

An additional important milestone relating to the Turkish navy in the modern era, worth mentioning in this brief historical recap, is its involvement in Turkey's invasion of the island of Cyprus and conquest of one third of the island during July–August 1974. One year after this, the Turks announced the establishment of the federal Turkish state of Cyprus, which became the Turkish Republic of Northern Cyprus eight years later. This state, recognized only by Turkey and operating as its vassal state, later on influences, as reviewed below, the present-day processes in the context of economic waters that Turkey perceives as belonging to it.

The strengthening and building up of the Turkish navy since World War II³

A special position, in the eyes of the US and NATO member states, was accorded to Turkey and its maritime strength when it joined NATO in 1952, as well as to its strategic location, both as a state adjacent to the USSR and as the one controlling the Bosphorus and Dardanelle straits, which comprise the main Russian passageway between the Black Sea and the Mediterranean Sea, which had special significance during the years of the Cold War.

This special position gave Turkey preference on the part of the western bloc and its navy was allowed to join the NATO fleet during joint exercises and was helped to build its strength, under relaxed conditions extended by the western countries and the US. The build-up of the Turkish maritime power during most of the second half of the 20th century was characterized by the clear majority of the vessels acquired by the Turkish navy (both vessels and submarines) being used vessels, previously owned by Western fleets, especially the US navy, as well as western European countries such as Britain, France, and the then-West Germany.

3 This section is based, among others, on selected Jane's Fighting Ships annuals, segmented by year, e.g., 73/74, 74/75, 86/87, 79/80, as well as a digital edition from 2019.

As will be discussed below, during the process of building up its navy in the closing years of the 20th century and in the past two decades, Turkey stressed independent building capabilities. Turkey's ability to build advanced submarines and surface vessels on its own is essentially the result of close and special contacts between it and Germany in the maritime field. This ability boosts Turkey's reputation, allows it to purchase knowledge and enables it to develop employment and training options for local human resources. Germany, on its part, sees Turkey as an equal member of NATO and, therefore, has no issues with sharing the best of its technology and knowledge to give Turkey independent ability.

During the last two decades, more exactly from 2007,⁴ the quantum leap in terms of the boost to Turkish maritime strength is particularly prominent. The Turkish government began investing resources, increasing expenses significantly in an effort to develop independent construction capabilities regarding various platforms for its navy. Ankara not only increased the number of its vessels and war ships, but also achieved the ability to build maritime platforms independently, such as some of its weapon systems and the weapons for them, basing their development on local R&D. The purpose here was to reduce their dependence on external purchasing sources.⁵

According to a survey conducted by one of the leading nongovernmental associations in the country's security industry, since 2007, R&D expenditures tripled and totaled more than 1.2 billion dollars in the 2019 financial year. This dramatic increase in capital investment created a number of projects intended mainly to increase the Turkish navy.⁶ In the following survey of the maritime build-up, we will focus on three components of strength: submarines, surface vessels and landing force systems, and to a certain extent, on the independent development of the range of armaments and aircraft for maritime missions.

4 It is interesting to note that the seeds of the "Blue Homeland" doctrine began developing in the philosophy of General Gerondiz, the father of the doctrine, in 2006, a year before resources were allocated for the new maritime strengthening program. It would appear that the close proximity time-wise is no coincidence, given that realization of the doctrine alongside aspirations to be a regional maritime power, means large investments in the navy's strengthening process are needed.

5 See the paper in the Turkish journal TRT. <https://www.trtworld.com/magazine/how-turkey-became-a-strong-naval-power-in-recent-years-32670>

6 See the paper by Prof. Ryan Gingeras, of the National Security Department of the Turkish Naval College, from 2019. <https://warontherocks.com/2019/04/the-turkish-navy-in-an-era-of-great-power-competition>; and the December 2019 paper by Asa Ophir, a Turkish analyst. <https://www.israeldefense.co.il/he/node/41305>

The submarine component

The first kernel of submarine strength in Turkey began to take shape with the help of the German Empire toward the end of the 19th century. Following World War I and the establishment of the new navy of the Republic of Turkey, old submarines, surplus from the German navy after the war, were acquired. Later, during the first half of the 1930s, submarines made in Italy, and in the second half of the same decade, submarines made in Nazi Germany, were acquired.

In the 1940s, at the end of World War II and afterwards, Turkey purchased 12 S⁷ class submarines from Britain, which were called Oruc Reis in Turkey. S type submarines were phased out a long ago—some in the 1950s and most by the beginning of the 1970s. In parallel with the purchase from Britain (but not simultaneously), about 20 used and surplus Balao class submarines were purchased from the US navy after World War II. The last ones of this class were purchased in the 1970s and taken out of service at the end of the 1990s. Other surplus US navy submarines were acquired at the beginning of the 1970s, and at the beginning of the 1980s, Tang and Tech class submarines were acquired. These submarines were phased out of the Turkish navy by the beginning of the 21st century.

After acquiring the US navy's used submarines, the used submarine era of the Turkish navy was over and it began purchasing and integrating new German made submarines (then West Germany). Its first six submarines were 209/1200 class (called Atilay class in the Turkish navy) boats, whose construction began in the mid-1970s and continued through the 1980s. Three of them were constructed in the HDW shipyards in Kiel, Germany, and the other three were constructed under German license in the Turkish navy shipyards at Golcuk.

Four more advanced T1 209/1400 class (called Prevez class in the Turkish navy) submarines were all constructed in the Turkish navy shipyards at Golcuk during the latter half of the 1990s.

To summarize, the process of strengthening the Turkish navy through submarines during the second half of the 20th century can be said to be characterized by a number of significant advances. In the beginning, used British and US surplus submarines from were acquired; following this, new submarines were built in Germany; and afterwards, in the last two decades of the 20th century, the navy advanced to constructing submarines on its own, under license from Germany.

7 The Israeli navy also purchased two submarines of this type from Britain at the end of the 1950s (the Rahav and Tanin submarines).

Until the end of the 20th century and the beginning of the 21st century, all the used submarines sold to the Turkish navy by the British and US navies were phased out. Accordingly, at the beginning of the new century, the Turkish navy was using newly constructed submarines that were manufactured either in Germany or in Turkey itself.

In the 21st century, we can point to another advance. In the first decade of the present century, four additional submarines were built in Turkey. These were more advanced than the earlier ones and were constructed on behalf of the ThyssenKrupp AG company of Germany. These were T2 209/1400 class boats (called Gur class in the Turkish navy).

The jewel in the crown in this area is happening and coming to fruition in the present decade, and this is the independent construction of six advanced type 214 submarines, which have an AIP type⁸ propulsion system. This new and advanced class is called the Reis class in Turkey. The first submarine in this series was launched in December 2019, with the rest of the group planned to be completed by 2027.

Up to the time this paper was being written, it seemed that the Turkish navy was slated to have a fleet of 10–12 209 class submarines (with all their assorted variations), and to this must be added the future addition of six 214 class (Reis class in Turkey) submarines. Thus, after the new submarines join the navy and in parallel with the phasing out of the outdated Atılay class submarines, it is expected that the Turkish navy will continue to have 12–14 advanced submarines at its disposal. This quantity gives the Turkish navy an advantage in the balance of power vis-à-vis submarines in the eastern Mediterranean compared to Greece, Egypt and Israel.

As noted above, the design of most of the existing and planned submarines is Turkish, but based on German knowledge and design, which necessitates an ability to develop and train professional human resources (engineers, marine architects and the like), both for the actual construction and for the ongoing basic maintenance. This ability to construct submarines independently is not something trivial, despite the German knowledge and design. For comparison purposes, we note that Israel and Egypt, which all have an important submarine component in their defense program, do not have this independent ability.

8 AIP – air-independent propulsion

Strengthening of front-line surface vessels⁹ since World War I

In this field also, the strengthening of the Turkish navy's surface vessels was, from the middle of the 20th century, based on acquiring surplus destroyers and frigates from the British and US navies, with a few surplus ships from the then-West German navy. These secondhand vessels were phased out of the Turkish navy by the end of the last century or the beginning of the present one. Some, as, for example, the Gearing destroyer manufactured in the US, were upgraded and armed with sea-to-sea Harpoon missiles.

Alongside purchase of the used vessels, it must be noted that at the beginning of the 1970s, the Turks began building Berk class frigates, based on an American model, at the navy shipyards at Golcuk. Likewise, in this same decade they began building 57 class missile boats at the Taskizak shipyards in Istanbul, based on knowledge from the Lurssen shipyards in West Germany. These ships were armed with, among others, Harpoon sea-to-sea missiles.

Independent construction of surface vessels in Turkey opened the way for more advanced models, this time also with close and special cooperation of the West Germans. During the last two decades of the 20th century, six German-licensed Meko 200 class missile frigates were built for Turkey (Yavuz and Barbaros classes in Turkey)—three in Germany and three at the Golcuk shipyards in Turkey, and all armed with, among others, Harpoon sea-to-sea missiles.

In the 1990s, the practice of purchasing surplus frigates and missile destroyers manufactured in the US reappeared. This time the Turkish navy acquired about 10 Knox class and eight OHP class ships, both armed with Harpoon sea-to-sea missiles. The latter class can also carry sea helicopters.¹⁰

To summarize the Turkish navy's various trends in strengthening its surface vessel fleet in the 20th century, we should also note that here too significant advances characterized the process. In the beginning, there was complete dependence on surplus from western navies, after which processes of independent manufacturing and construction in Turkish shipyards began, including the building of missile boats and missile frigates.

9 Armed surface vessels and the ability to engage in attack missions in the open water beyond the territorial waters, in contrast to surface vessels intended to protect the shore and ports within the territorial waters of a respective country.

10 It should be noted that the KNOX and OHP classes were also supplied in the 1990s, after the First Gulf War, to the Egyptian navy.

Different from the submarine component, where the Turkish navy stopped acquiring used boats, here at the end of the 20th century, the Turkish navy went back to acquiring surplus US surface vessels. Nevertheless, this time these were improved models that included being armed with advanced sea-to-sea and air-to-sea missiles.

Further, at the beginning of the 21st century, during 2001–2002, the Turkish navy acquired six A-69 class missile corvettes (also anti-submarine), which had been built back in the 1970s for the French navy. The corvettes were armed with Exocet sea-to-sea missiles, and still serve in the Turkish navy.

In 2008 in the Istanbul shipyards, construction of a set of 16 patrol boats began. These boats were about 57 meters long and armed with cannons and anti-submarine weaponry. In Turkey, they are called Tuzla class. These boats went into service in the Turkish navy between 2011–2015.

The jewel in the crown of independent Turkish surface vessel construction in the last decade was a set of missile frigates, built as part of the MILGEM project. Their construction began in 2007, which as will be recalled is the turning-point year in the process of strengthening the Turkish navy in the modern era. At this point, it is known that four of these frigates have been integrated into the Turkish navy (hull numbers F511–514), armed with Harpoon class sea-to-sea missiles.

It is noted that as part of a collaboration with the Pakistani navy, four MILGEM class frigates will be built for it—half will be built in Istanbul and half in Karachi, Pakistan, itself. The first frigate of this set will be handed over to Pakistan during 2023.¹¹

Landing forces and amphibious vessels

Turkey has always placed great importance on having the ability to land forces from the sea. The need for this capability, in Turkey's view, is rooted in the potential requirement to get involved in disputed areas. This capability was indeed tested in the middle of the 1970s when the Turkey invaded Northern Cyprus.

During the second half of the 20th century, a large number of assorted ships and boats were integrated into the Turkish navy. Some of these were surplus from the US navy and some were built by Turkey itself. Of these, we can count four large American tank landing ships (LSTs) that were handed over at the beginning of the 1970s. Later on, after the invasion of Cyprus and up until the end of the 20th century, five large landing ships, similar in size, were built in the navy shipyards at Taskizak.

11 Firat Tasdemir 25.10.2020.

<https://www.aa.com.tr/en/asia-pacific/turkish-naval-ship-to-be-sledged-in-pakistan/2018166>

Besides the large landing ships used by the Turkish navy, it also used tens of smaller landing boats (LCU, LCT and LCM types). Almost all of these were constructed in Turkey, beginning in the mid-1960s. One class that was built in Turkey was based on the French EDIC model.

In the present strengthening program, besides from the existing two large projects for building advanced 214 class submarines (the MILDEN project) and missile frigates (the MILGEM project), a flagship project has been pending since the middle of the present decade—the building of a light aircraft carrier that will have amphibious capabilities.

The construction of the first vessel of this class, called in Turkey the TCG Anadolu L-408, began in the Istanbul shipyards in the second half of the present decade as part of a joint consortium that included the Navantia shipyards in Spain. This vessel is defined as an amphibious assault ship, about 230 meters long, with a maximum displacement of about 27 thousand tons and maximum range of about 9,000 miles. This project is based on the Spanish "Juan Carlos" (L-61) model. The ship has a range of carrying configurations—airplanes, helicopters, UAVs and even LCM/LCAC landing crafts.

At present, it is unclear which type of airplane it will carry. Originally, it was planned to carry 12 US manufactured vertical take-off and landing F-35B aircraft, but because Turkey purchases anti-aircraft missiles from Russia, difficulties have arisen in the past year regarding the deal between the US and Turkey.

Last year, Turkey's intention to build an additional aircraft carrier of the same type was disclosed. This would be an identical sister ship to the one described above and to be called the TCG Trakya. It is now being designed by the Turkish navy. This aircraft carrier model has a very important place in the strengthening of the Turkish navy program, and it allows the Turkish state to finally join the aircraft carrier club.

Richard Parle, an American researcher who writes about and studies the military, estimates that the aircraft carrier Anadolu will enable the Turkish navy "unprecedented amphibious assault ability in the Black Sea and the eastern Mediterranean." As far as Turkey's amphibious abilities, we note the establishment of a marine brigade subordinate to the navy. This is in addition to the existence of the navy's SAT marine commando unit. It is estimated that the special units are highly trained and we point out that in the past they had a not small part in the 1974 summer invasion of Cyprus.

The marine invasion of Cyprus (Operation Atilla)

At the time of Turkey's invasion of Cyprus in the summer of 1974, its navy had not insignificant capabilities including a marine force, in order for it to integrate into the other army branches, in the planning and executing of the invasion. In the early hours of July 20, 1974, the Turkish marine landing on the Pentemili coast began, using about 22 ships and landing boats, and accompanied by seven aircraft carriers and gunboats.



Figure 1: Map of the landing and movement of the Turkish forces up to Nicosia, the capital



Figure 2: The landing strip on the Pentemili coast

The marine part of the invasion of Cyprus was, from the Turkish navy's perspective, the jewel in the crown of its actions, and a significant milestone in the operations of the Turkish navy as an important component of Turkey's security strategy, a component whose importance continues to grow in the 21st century, as will be explained below.

Independent development of naval weapon systems

As part of the new strengthening program, from 2007 emphasis has also been put on domestic development and production of naval systems, which area is led by the ROKETSAN company¹² in Turkey. The company developed a line of armaments, and in the naval field, the jewel in the crown is the ATMACA anti-ship cruise missile with a planned effective firing range of between 280 and 360 km.

In the middle of 2020, a successful trial of the missile launched from a ground silo was held and, according to developers, it hit its target, more than 200 km away, exactly. The missile is supposed to become operational this year; mass production of the missile is expected to begin and it will gradually replace the US manufactured Harpoon missile in the range of new surface vessels under construction such as the MILGEM model frigate, and the possibility that the new submarines will also be outfitted with this missile should not be dismissed.

Naval air force

According to up-to-date information for 2020, the Turkish navy has at its disposal about 40 aircraft designed for naval missions, of which about 15 are fixed-wing airplanes and the remainder are helicopters. The various aircraft, including UAVs, are used for patrolling and identifying naval targets. From the assault side, it seems that at this stage, the helicopters are armed with anti-submarine torpedoes, as well as anti-tank missiles manufactured locally that have been modified to hit maritime targets.

We can estimate that the over-the-sea assault threat from airborne platforms will increase the more light aircraft carriers are brought into operational service and the appropriate aircraft, able to launch cruise missiles against maritime targets (e.g., the locally manufactured ATMACA) are purchased for them.

Summary of the characteristics of the strengthening of the Turkish navy

As we saw, all the navy's power components were, at the beginning, based on the surplus platforms of western navies. Following this, a clear and consistent trend of developing the ability for independent construction and manufacturing of both sailing vessels including submarines and naval weapon systems developed. A small part of the independent abilities was acquired in the US and Spain; however, the central capabilities and the construction licenses were based on German knowledge,

12 A company equivalent to Rafael in Israel.

the result of close and special collaboration in the maritime area between the two countries.

The Turkish aspiration to be self-sufficient stems from a number of motives. First and foremost, there is the desire to attain the image and reputation befitting a state that sees itself as a regional maritime power. Moreover, there are considerations about reducing dependence on external supply sources, and of course, there is the economic consideration for creating jobs for local industry.

In a special way, and different than other navies that challenge the Turkish navy (e.g., the Greek, Egyptian and Israeli navies), we note the impressive ability, albeit based on foreign knowledge, to build advanced submarines, multipurpose frigates and light aircraft carriers. This is certainly a quantum leap characterizing the process of building up the strength of the Turkish navy in the last decade.

The operational doctrine of the Turkish navy

"The existence of a strong and capable navy is essential for the protection of Turkey. Our navy will strongly support our policies."

The above quote comes from a speech made by the founder of the modern Turkish republic, Mustafa Kemal Atatürk to officers on a patrol boat making its maiden voyage in the Black Sea in September 1924.¹³

During the time when Admiral Bülent Bostanoğlu served as the commander of the Turkish navy (2013–2017), he prepared and published, in 2016, the strategy of the Turkish navy. The opening words of the publication were: "The one who rules the seas, rules the world."¹⁴

In the introduction to the first edition of this paper, Admiral Bostanoğlu spoke of Turkey's significant geopolitical position and location as an Afro-Eurasian state, having many areas of interest in the maritime domain, and especially in the Mediterranean Sea, the Black Sea and the Aegean Sea. He emphasized the disputes still existing about the territorial water borders in the eastern Mediterranean, including the dispute related to Cyprus, and the imbalance in the Aegean Sea as decided upon in the Treaty of Lausanne. In the same introduction, he said that the maritime domain has become very important, especially in terms of energy exploitation as well as

13 From the official publication of the Turkish navy: Turkish Naval Forces Strategy, 2016, page 26, footnote 61. See the following link:

<https://www.dzkk.tsk.tr/data/icerik/392/Turkish%20Naval%20Forces%20Strategy.pdf>

14 Ibid., page 4.

natural resources, and he noted that this subject has been a cause for increasing competition between states seeking to generate benefits from these resources. The competition has exacerbated even more the arguments about territorial water borders.¹⁵

The Turkish navy strategy document indeed continues to espouse the Turkish commitment to international institutions such as the UN and NATO, for example, in everything related to securing international commercial shipping lanes, as well as the battle against sea pirates. Nevertheless, the strategy document emphasizes that: "it is imperative to maintain a strong navy to protect Turkey," in the spirit of Atatürk, while preserving the ability to act in the open sea and use deterrent force in the face of threats and dangers".¹⁶

And indeed, since the formulation of this strategic document, there has been a change in Turkey's maritime strategy. No longer is the Turkish navy only a part of the NATO navy; it is, rather, the navy of a regional power characterized by features that can be categorized as a "green-water" navy or at least as one that is advancing and aspiring to be a "green-water" navy. This would be a navy that, obviously, would have a clear presence in the Black Sea, the eastern Mediterranean Sea, and the Aegean Sea, and will have the potential to operate in additional areas such as in the Adriatic Sea, the Gulf of Sirte in Libya, the Persian Gulf and the southern Red Sea and the Horn of Africa.

The strategic document was made public in 2016, during the tenure of the present president, Erdogan, but it is not completely clear, however, that today he would have supported this document because in the spirit of Atatürk's philosophy, the document expresses and emphasizes the goals related to balance of power in the maritime domain and does not express motifs of return to the 'Ottoman Empire's former glory', and pan-Islamic motifs such as Erdogan champions today.

In contrast, the father of the "Blue Homeland" doctrine, Admiral Cem Gurdeniz, would certainly support the document and it may be that the document was inspired by him. Recently, he said that the "Blue Homeland" doctrine focuses on a "geopolitical struggle surrounding maritime interests with military, economic, technological, sociocultural and environmental aspects." According to his philosophy, the maritime domain is an inexhaustible source of wealth and power. The 21st century, in his opinion, will be the century of the sea for the entire globe. Humanity will be totally

15 Ibid., page 3.

16 Ibid., page 41.

dependent on the sea, in terms of transportation, energy and food, as it has never ever been.¹⁷

And from theory to practice

In March 2019, Turkey held one of its largest navel exercises ever, with the participation of over 100 sailing vessels. The exercise was held in the Black Sea, the Aegean Sea, and the eastern Mediterranean Sea, and was called, obviously, "Blue Homeland". Approximately two months after, in the second half of March 2019, another naval exercise, even bigger than before, was held under the command of the Turkish navy and in which over 130 warships and about 90 aircraft participated. This exercise was called "Sea-Wolf" and it also was held in the Black Sea, the Aegean Sea, and the eastern Mediterranean Sea.¹⁸



Figure 3: The Turkish navy on maneuvers (September 2014)¹⁹

- 17 The main points made by Gurdeniz were said in an interview on the Turkish television network, Ulusal Kanal, on December 22, 2019.
- 18 Based on a paper posted on TRT World. <https://www.trtworld.com/turkey/turkish-naval-strength-in-eastern-mediterranean-shifts-balance-of-power-37730/amp>
- 19 The photograph was taken from the website of the Nordic Monitor. <https://www.nordicmonitor.com/2020/02/erdogans-secret-keeper-says-lausanne-treaty-invalid-turkey-free-to-grab-resources>

A further real-life demonstration of the Turkish sea operations doctrine can be seen in the bilateral memorandum of understanding that was signed in November 2019 between Turkey and the government of Libya, which rules the western part of the divided country (the General National Congress – GNA), in the center of which sits Tripoli. According to the memorandum, a joint Turkish–Libyan exclusive economic zone (EEZ) was arbitrarily fixed. Understandably, this heightened tensions in the eastern basin of the Mediterranean Sea. Moreover, Turkey began getting involved in the Libyan civil war by giving support to the Libyan government in Tripoli, in opposition to the regime of Khalifa Haftar in eastern Libya, whose center is in the city of Benghazi. This involvement raised the tension between Turkey and Egypt because the latter country, together with the Emirates, supports Haftar’s regime.

In parallel with its involvement in Libya, in 2020 Turkey took steps to demonstrate its presence and conduct geological surveys and search for gas reserves in Greece’s and Cyprus’ recognized EEZs.

In Libya, especially in the western part of the Gulf of Sidra, in the traditional hotspots of the islands in the Aegean Sea and in the territorial water of Greece and Cyprus—in all of these places, the Turkish navy made sure its presence was noted, sometimes aggressively, among others by escorting and guarding using frigates, ships that undertook surveys and drilling in the sea domains of Cyprus and Crete. Likewise, the Turkish navy operated in the coastal region of Libya, in the western part of the Gulf of Sidra, using frigates and apparently also submarines.



Figure 4: Frigates belonging to the Turkish navy guarding the activities of the survey ship Oruç Reis²⁰

20 See the following link. <https://ahval.me/east-med/turkey-plans-new-drilling-coast-cyprus-report>

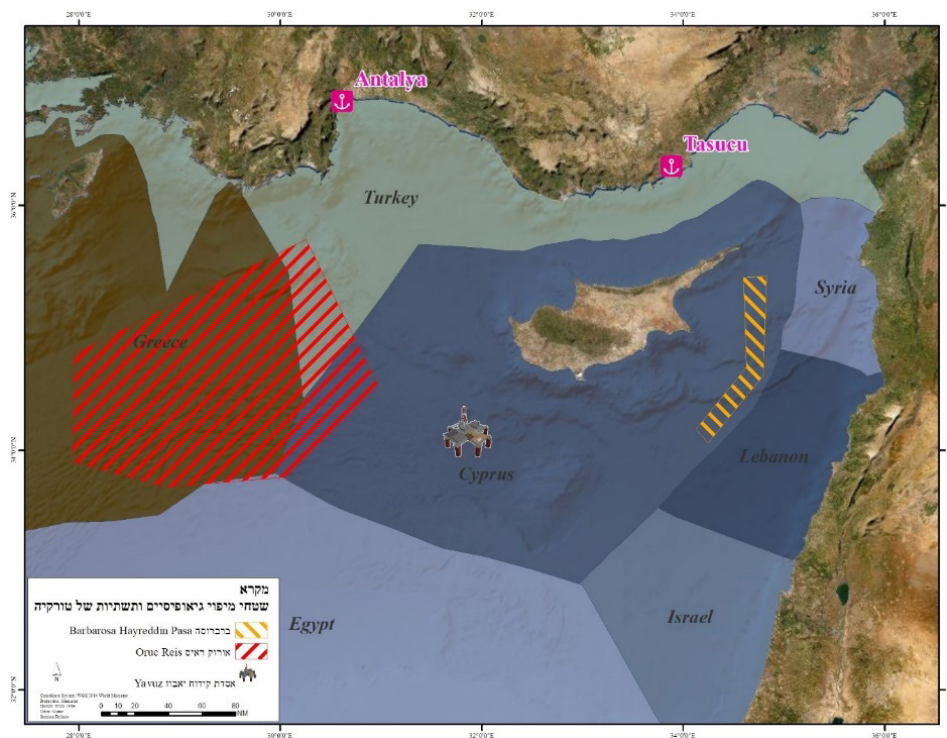


Figure 5: Seismic surveys conducted by Turkey in 2020 in the economic zones of Cyprus and Greece²¹

Summary

Over the past two decades, the Turkish navy changed how it looks and its strength. This change derives from the formulation of a maritime strategy intended to transform it from a navy that is part of the NATO fleet into a navy that exemplifies a regional maritime power. Turkey's maritime strategy in the present is influenced by both the vision of a return to the glory days of the Ottoman Empire and the adoption of the "Blue Homeland" doctrine, which sees in the maritime domain an economic resource, and in concrete terms, an inexhaustible source of natural gas reservoirs, which Turkey, similar to its neighbors, some of whom are also its competitors, desires for its economic security.

To these narratives, we must add geographic implications. Turkey controls two important sea straits, the Bosphorus and the Dardanelles, the only points of entry

21 See the paper by Semion Polinov and Shlomo Gueta.

<https://ch-strategy.hevra.haifa.ac.il/index.php/turkey-marine-geophysical-surveys>

and exit from the Black Sea into the Mediterranean and vice versa. From the end of World War II through the years of the Cold War, the two superpowers, the US and the USSR (which eventually became Russia), were keenly aware of this basic geographic fact.

The strength components as reviewed, during the last part of the 20th century and the early part of the 21st century, especially since the middle of the first decade of the 21st century, expressly convey Turkey's aspirations to transform its navy into a "green-water navy", i.e., a navy with the ability to operate far from its home ports while being supported by and based in friendly ports. In the opinion of the author of this paper, the Turkish navy, in its present form, and certainly as the program for strengthening it over the coming years is deployed, will be a navy that should be related to as a "green-water navy", and as belonging to a regional power.

In terms of becoming a maritime force to be reckoned with, we note the Turkish diligence and aspiration, since the middle of the past century and more intensely in the past two decades, to outfit itself with maritime platforms, and its domestic construction and assembly facilities in Turkish shipyards, including submarines, frigates and corvettes, and recently, light aircraft carriers. It is worth noting the fact that Turkey is today a source of new sailing vessels for the Pakistan navy. The Turkish ability to independently develop and manufacture can be seen in its equipping itself with naval weapons, the crowning jewel of which is the development and manufacturing of a new long-range anti-ship cruise missile, the ATMACA, which in the future will replace the Harpoon missile series made by the US.

The Turkish navy today is the strongest navy among all the navies in the eastern Mediterranean Sea. Obviously, this statement does not take into account the Russian navy and the US Sixth Fleet, which has in any event lately been reducing its presence in our region.

On the operational side, it seems that the Turkish navy still does not have proven operational experience. Nevertheless, it has accumulated thousands of hours of exercises with some of the NATO navies, and especially with the US navy. One can assume that the series of broad naval exercises conducted by the Turkish navy since 2019, as well as the many actions carried out by the navy in 2020 in the eastern Mediterranean (as part of protecting drilling ships and seismic survey ships), as well as the naval operations focusing on Libya—have certainly contributed to its operational capability.

We can say that Turkey's naval strength constitutes a challenge and a threat to its traditional adversaries in the area, and especially to Greece and Egypt following the rise of A-Sisi to the latter country's government. Alongside this, the assumption now is that also Israel must take into consideration the potential maritime threat that may arise from the Turkish navy. In this context, it is worth remembering the significant event that occurred at the end of May 2010—the thwarting of the flotilla to Gaza, which flotilla included, among others, the Mavi Marmara, as well as the more recent event, in December 2019, when Turkish navy ships forced the 'Bat Galim', an Israeli research ship, out of Cypriot waters. The ship, which belongs to the Israel Oceanographic and Limnological Research Institute, subordinate to the Ministry of Energy, was conducting research in the economic waters of Cyprus, with the permission of the government of Cyprus.



Figure 6: Turkish frigate on a joint exercise with the USS Harry Truman, an aircraft carrier²²

22 The photograph was taken from the following paper. <https://www.mako.co.il/pzm-magazine/Article-f4a618e41983231006.htm?Partner=interlink>

Turkey's economic interests in the eastern Mediterranean Sea, the 'megalomania' of the present government seeking to return to the glory of the Ottoman Empire, as well as its basic enmity toward Israel, and the unconditional preference and support of the Palestinian nation—all position Turkey and its naval component as potential threats to and future challenges for Israel.

The State of Israel, being a country that is unequivocally and crucially dependent on its maritime trade, cannot watch unconcernedly the potential threat of the Turkish navy, which may give a show of strength and bring to bear high quality multipurpose surface sailing ships, as well as the impressive power of advanced assault submarines.

The Turkish Maritime Doctrine – The ‘Blue Homeland’ (Mavi Vatan)

Omri Eilat, Ayal Hayut-Man

Since mid-2019, the Turkish navy has significantly expanded its activity in the Mediterranean. Among other things, ships of the Turkish navy have disrupted drilling and research activities in Cyprus’ EEZ and have engaged in such activities themselves; they have harassed Greece’s ships and since July 2020 have also demonstrated a presence off the Greek islands; and significant presence off the shores of Libya and have even provoked a confrontation with a French ship in that region. In March and May 2019, Turkey held two large-scale naval exercises, among the largest in its history. The first, which was called the ‘Blue Homeland’ (Mavi Vatan), took place in the Black Sea, the Aegean Sea, and the Eastern Mediterranean and involved more than 100 vessels. The second, which was called ‘Sea Wolf’ (Denizkurdu), took place in those same regions and included more than 130 ships and about 90 aircraft. These exercises included, among other things, a simulation of capturing islands—apparently Greek islands—and a confrontation with F16 planes, which are possessed in the East Mediterranean region only by Greece, Israel, and Egypt. These moves reflect Turkey’s new strategy, one put in place by Recep Tayyip Erdoğan. This is part of the strategic change in course that began more than a decade ago when Turkey decided to become a hegemonic power in the Middle East. The Turkish strategy includes activist principles of geopolitical and economic expansion, alongside defensive principles that were intended to rectify a historical injustice (in Turkey’s eyes) committed against the Turkish homeland by the international community. The strategic plan that dictates Turkey’s actions is called the ‘Blue Homeland.’ This is a doctrine that was first presented in 2006 by Turkish Admiral Cem Gürdeniz at a symposium held at the Turkish naval headquarters. According to the ‘Blue Homeland’, Turkey has the right to an enlarged maritime territory, measuring about 460 thousand square km, in the Mediterranean, the Aegean Sea and the Black Sea. This territory includes areas that are recognized as belonging to Greece and Cyprus EEZ’s according to international conventions.

The disagreement centers around the Exclusive Economic Zone (EEZ), in which a coastal nation has the right to exploit natural resources such as oil, natural gas and fisheries. According to the UN Convention for the Law of the Sea (UNCLOS), each country has the right to an EEZ of up to 200 nautical miles from its coast. This convention also defines the means and methods for delimiting the EEZ in cases where two countries have a claim on the same area. The main dispute between Turkey

and Greece concerning their EEZs is based on the fact that Greece has numerous islands, some of which border on Turkey, and according to the convention, every inhabitable island provides the right to the EEZ surrounding it. According to Turkey, islands should not be counted in determining the boundaries of an EEZ.

The historical position of Turkey, which is not exclusively due to the policy of the Erdoğan regime, is that the Convention for the Law of the Sea, which includes inhabitable islands in the delimitation of an EEZ, discriminates against Turkey by its very nature. The logic behind Turkish demands not to recognize the islands is related to Greece's control of the Cyclades, which extend all the way to the Turkish coast and is the result of the distortion that this situation creates given the dictates of the Convention for the Law of the Sea. The size of the disputed territory is about 145 thousand square km of economic waters, some of which may be rich in natural gas and oil deposits. Another source of conflict between Turkey and Cyprus is the dispute over the status of the Turkish Republic of Northern Cyprus (TRNC) the TRNC is not recognized by most countries in the world, while Turkey does not recognize Cyprus nor its EEZ. From the viewpoint of Erdoğan, he tried to the best of his ability to promote the plan of UN Secretary-General Kofi Anan to establish peace and mutual recognition between Cyprus and Turkish Northern Cyprus, while the Greek Cypriots decided against the move in a 2004 plebiscite (65% of the Turkish Cypriots voted for while 76% of Greek Cypriots voted against). From Turkey's point of view, the worst of all was the acceptance of Cyprus to the EU, while Turkey was forced to hold long and exhausting negotiations, which finally reached an impasse after a few years. Therefore, the emergence of the 'Blue Homeland' doctrine was preceded by Turkish frustration in the Mediterranean Basin against the background of relations with Europe that were unconnected to the Turkish expansionist policy.

Added to these ambitions to achieve justice in the distribution of resources in the international domain are Turkey's expansionist aspirations, which have become increasingly aggressive. The 'Blue Homeland' doctrine is one more link in the chain of attempts by the Erdoğan regime over the years to position Turkey as the hegemon in the Eastern Basin of the Mediterranean and in the Persian Gulf. Turkey under Erdoğan's leadership is anxiously waiting for two approaching events: the 100th anniversary of the establishment of the Republic in 2023 and the "Day After Erdoğan", given the advanced age and poor health of Turkey's politically strongest leader since the death of the father of the Republic, Mustafa Kemal Atatürk. Therefore, Erdoğan, who views himself in an Epic-historical prism, feels the need for a foreign policy achievement that will glorify his heritage.

During the period 2016–19, the 'Blue Homeland' doctrine began to gain popularity in the upper echelons of the Turkish regime. This change was due to a number of factors: from an external perspective, the Erdoğan regime felt that the foreign policy it had adopted in the past, namely of regional cooperation and "zero problems with the neighbors" had not borne fruit. This was particularly the case following the removal of Egyptian President Mohamed Morsi, who represented the Moslem Brotherhood movement, which is closely connected to the vision of religion-state relations adopted by the Erdoğan government. As a result, the Erdoğan regime has gradually shifted to a more aggressive foreign policy that is based on self-reliance and rules out cooperation with "immoral" countries, a category that includes Egypt under el Sisi, Syria under Assad, Greece, and Israel. Domestically, Erdoğan is finding it difficult to drum up broad public support. Therefore the protection of what is perceived to be Turkey's national interests in a confrontation with the Western nations may lead to a "circling of the wagons" and increase his popularity. Also, the inclusion of the MHP, Admiral Gürdeniz's party, in Erdoğan's internal coalition, has affected the adoption of the doctrine. In August 2019, President Erdoğan made a speech to graduates of the Naval Academy. Behind him was a map showing the borders of the 'Blue Homeland,' a clear message that indicated the adoption of the doctrine by his government.



Figure 1: A map of the Blue Homeland behind President Erdoğan¹

1 Ekathimerini, (2 September 2019) Erdogan takes photograph in front of 'Blue Homeland' map. <https://www.ekathimerini.com/244125/article/ekathimerini/news/erdogan-takes-photograph-in-front-of-blue-homeland-map>

At first, the attempts by Turkey under Erdoğan to become a regional hegemon were only reflected in the presumption of playing the role of an honest broker in regional conflicts, such as in the Israeli-Syrian negotiations in late 2008 and the attempts to persuade Israeli Prime Minister Ehud Olmert to use Turkey as a mediator in negotiations with the Palestinians. Israel's Operation 'Cast Lead' in the Gaza Strip in 2008 led to a blunt reaction by Erdoğan and in 2010 to an international maritime confrontation between activists from the İHH organization, a Turkish semi-governmental body, and the Israeli navy. Already then it was claimed that Israel's natural gas exploration and its agreements with Cyprus regarding their EEZs were an important factor in a policy that led to Turkey's confrontation with Israel regarding the Gaza Strip. The policy of "zero problems with the neighbors", which was introduced by Erdoğan's National Security Advisor, and later the Prime Minister and Foreign Minister - Ahmet Davutoğlu, temporarily created a diplomatic halo around Turkey, although it was already encountering problems.

The Arab Spring in 2011 led to even greater presumptuousness on the part of Turkey. Erdoğan viewed his role as one of moral leadership in the Middle East, in the hope of serving as a role model for democratization and religion-state relations in the Arab countries. The victory of Mohamed Morsi in the 2012 Egyptian elections represented significant progress for Erdoğan, whose global prestige skyrocketed when he was chosen by 'Time' magazine as the man of the year in 2011. However, these hopes were dashed when Morsi was deposed in the summer of 2013 by Abdel Fattah Al-Sisi, who has since then served as Egyptian President. At the same time, the riots that broke out in 'Taksim Gezi Park' led the Erdoğan regime to concentrate on political problems at home. Erdoğan's government dealt with the protests firmly openly expressing a sense of persecution on the international level. This turning point significantly reduced support for Erdoğan, both in the international community and in the Middle East specifically. The fainthearted coup against Erdoğan in 2016, the increasing confrontations with the Kurdish separatist factions in the eastern part of the country, and Turkey's severe economic crisis further complicated matters and increased Erdoğan's need to show external achievements (and enemies).

The main strategic and diplomatic layers of the tension caused by the "Blue Homeland" doctrine have deep historical roots in the history of the Republic, and this is hardly the first time in which they caused the emergence of conflict. Current tensions are inseparably connected to the civil war in Libya, which goes far beyond just short-term economic or geopolitical interests. The efforts by Erdoğan to position Turkey as a regional hegemon, in contrast to almost all of his predecessors, constitutes a major component in the revolution he has been promoting for more than two decades

in Turkey's identity. For example, a conflict arose over the territorial or economic waters between Turkey and Greece in the 1990s concerning delimitation of the maritime territory of the Cyclades, during which there were naval encounters similar to those in 2019. The conflict centered on the country's borders and was in line with the republican ethos of Atatürk, according to which, "*Turkey does not desire one inch of any other country's territory and will not give up one inch of its own.*" The Korean War, during which Turkey joined NATO, and the invasion of Cyprus in 1974, which was also meant to protect national interests, were outlying events in the Republic's history. The 'Blue Homeland' doctrine, therefore, constitutes a milestone in the shift of Turkish policy from to expansionism. However, the gap between Erdoğan's intentions and his political-strategic defense achievements is large. Turkey has not managed to achieve its maximalist aspirations in the Mediterranean, which have been met by opposition by essentially all of the major players in the Mediterranean Basin.

Turkey's attempt under the leadership of Erdoğan to become a dominant power and the aggressive methods used to realize the 'Blue Homeland' doctrine should not cloud our understanding of the legitimate basis for Turkey's demands. Moreover, since Erdoğan's actions are related to Turkey's identity, it is important to understand the role of the doctrine's geostrategic and energy components. The word "Vatan", which means homeland in Turkish, got its interpretation in Turkey simultaneously with the birth of the Republic from within the ruins of the Ottoman Empire. Mustafa Kamal Atatürk, the founder of the Republic and its first president, created an pro-western, yet neutral ethos, which shunned expansionism and intentionally alienated Turkey from the Arab countries. The secondary and perhaps even negligible interest of the Turkish governments in the Arab countries has often been evident, including at the Madrid Conference in 1991, where Turkey demanded not to be identified as a Middle Eastern country. Turkey's efforts to become a full member of the EU began in 1987 and, until they came to a dead-end toward the end of the 2000s, were part of Turkey's main diplomatic efforts.

The rise of political Islam in Turkey, which was preceded by the rise of the liberal right-wing parties who had a softer approach to Atatürk's heritage, led to growing interest in Turkey's Ottoman past, which was reflected in certain sectors of society, such as the education system and the tourism industry. However, by the last decade, these were beginning to have an influence on Turkey's internal issues of identity. The desire for regional power, which has already been mentioned, and which failed in the attempt to make Turkey into a significant power that also has substantial soft power in the Middle East, has changed in the last decade. This change was reflected

in Turkey's military intervention in the civil wars in Syria and Libya, by means of which Turkey has aligned itself with radical Islamic forces. Turkey has also tightened its relations with Qatar, which has adopted the most subversive diplomatic line against the legitimacy of regimes in the Sunni nations. Turkey's attempt to reposition itself in the region is accomplished by means of consistent support for Hamas in Gaza, Islamic organizations on the Temple Mount, and finally in the adoption of the 'Blue Homeland' doctrine as a plan of action for the Erdoğan regime.

Energy also plays a role in the struggle for maritime control of the Mediterranean and it involves interests that are deeply rooted in Turkey's political culture. The loss of the Mosul (currently part of Iraq) district to the British Empire after the World War I and Turkey's War of Independence represent a loss of parts of the homeland in Turkey's collective memory, due to the loss of oil fields and royalties and the loss of control over a Turkmenian and Kurdish population. Another prime example is the oil crisis of 1973–83, which led to a severe economic crisis in Turkey that ended with a military coup and a military government from 1980–83. It is not coincidental that all of Turkey's governments have invested efforts in creating an infrastructure that will transform the country into an energy corridor to Europe and the Port of Ceyhan into a "Rotterdam of the Mediterranean". These efforts were from the beginning of a geopolitical rather than economic nature, due to Turkey's urge to redefine its role in the post-Cold War world.

The combination of the aforementioned processes produced a strategy that includes protectionist-activist principles. On the one hand, Turkey rightly claims that it was not treated fairly in the division of the EEZs in the Mediterranean. On the other hand, it has adopted measures that serve the interests of expansion far beyond its legitimate claims.

Turkey views the current division of EEZs as unfair and discriminatory. It has a much longer coastline than neighboring Greece (in the calculation of the coastline of the mainland without the cumulative coastline of the islands), and its energy needs are also several-fold more extensive (Turkey has a population of 82 million that consumes ten times more natural gas than Greece, which has a population of only 10.7 million, and five times more than Israel which has a population of 9.2 million). Turkey's energy sector is based primarily on natural gas imported from Russia, but it is interested in diversifying its energy sources. From a strategic viewpoint, Turkey is a prime route for conveying natural gas and oil from Caucasus, Russia, and Central Asia to Europe, but for it to exploit this situation for strategic purposes it needs a reliable alternative to Russian natural gas. The production of large amounts of offshore natural gas would be particularly beneficial to Turkey. The fact that the

EU countries have sided with Greece and Cyprus in the conflict strengthens Turkish sense of alienation. Moreover, Turkey claims that in agreements signed by Greece with Italy and Egypt for the delimitation of EEZs, the borders that were arrived at were based on a calculation that was quite similar to the Turkish position.

Even if the early justification given to the 'Blue Homeland' doctrine was energy, the current situation shows that it is actually pure geostrategic interests that are involved. The price of natural gas is at rock bottom due to the Covid-19 crisis, but there are also longer-term factors, such as the growing use of oil shale, which make the development of natural gas projects unworthwhile. The multinationals are abandoning existing exploration projects and are not initiating new ones. Therefore, it does not seem likely that the current tension can be resolved by way of a reallocation of natural gas only. From Turkey's perspective, this conflict is first and foremost about sovereignty. According to public opinion polls, about 58 percent of Turkey's citizens view the EEZs as an issue of importance for national security, as opposed to only 3.8 percent that held this position at the beginning of 2020. The high level of support among the Turkish public on this issue provides the Erdoğan regime with greater room for maneuver, and it may be that an escalation of the conflict will even serve domestic goals of generating support and public legitimacy.

The final removal from consideration of Turkey joining the EU provides it with new room for maneuver in unrecognized Turkish Northern Cyprus since it now feels far less need to commit to the international consensus. The decline in American involvement in the Mediterranean Basin only reinforces this trend. In terms of its maritime activities, Turkey is seeking to build a new maritime base to the east of Northern Cyprus, which will provide it with a more rapid response capability with respect to other forces in the area. However, the most blatant manifestation so far of the "Blue Homeland" doctrine was the signing in November 2019 of a memorandum of understanding between Turkey and the Government of National Accord (GNA) in Libya. Libya is currently undergoing a civil war between the GNA, which controls the western part of the country, and the Libyan National Army (LNA), led by Marshal Khalifa Haftar, which controls the central and eastern parts. Turkey and Qatar, with some backing from the EU, support the GNA, which has Islamist tendencies and is backed by Islamic militias, including members of Jabhat al-Nusra, as opposed to Egypt, the UAE, and Russia, which support the forces of Haftar.

The agreement between Turkey and the GNA defines the delimitation of EEZs between Turkey and Libya, among other things, in a way that significantly enlarges Turkey's EEZ and interrupts the territorial continuity between Cyprus and Crete. Furthermore, the EEZ blocks the planned construction of the gas pipeline from Israel

by way of Cyprus and Greece, which will enable the export of Israeli and Cypriot gas to Europe.

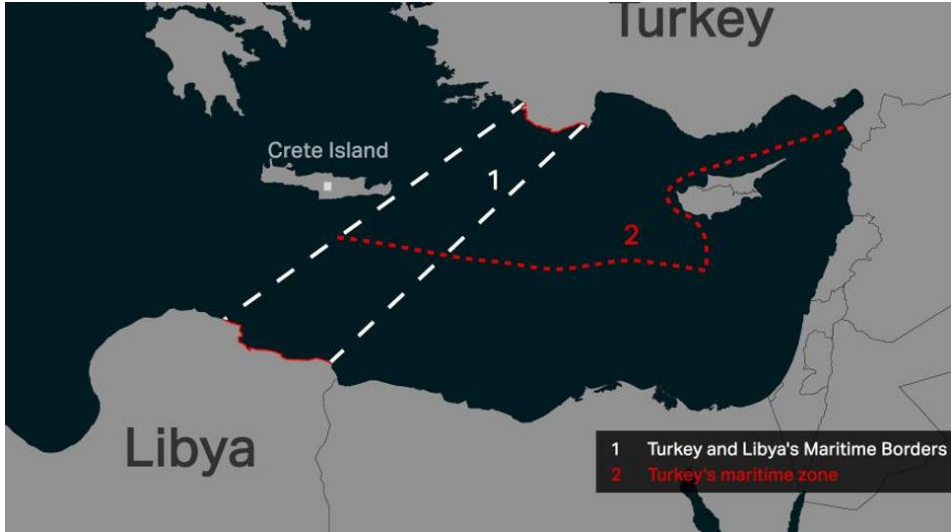


Figure 2: Delimitation of the maritime territories according to the Libyan-Turkish memorandum of understanding of November 2019

In response to the memorandum of understanding, Greece has, since June 2020, maintained contact with the LNA under the leadership of Haftar, with the goal of creating its own delimitation of the EEZ between the two countries. Moreover, there has recently been a tightening of relations between Greece, Cyprus, Israel, and Egypt, which have a shared interest in halting the Turkish expansion in the maritime domain. For Egypt, this interest is accompanied by the need to protect its western boundary against the GNA, which is supported by Turkey and Islamic militias.

It should be emphasized that for the good of the parties involved and in view of Turkey's energy needs, a solution of the dispute over Turkey's EEZ should be reached by negotiations possibly with the mediation of other countries (such as Germany) or additional organizations. Jens Stoltenberg, the Secretary-General of NATO, also expressed this idea on his visit to Ankara in October 2020.²

2 "...The de-confliction mechanism can help to create the space for diplomatic efforts. It is my firm hope that the underlying disputes can now be addressed purely through negotiations, in the spirit of Allied solidarity and international law." NATO (5 October 2020), "Secretary General in Ankara: Turkey is a valued NATO Ally". https://www.nato.int/cps/en/natohq/news_178545.htm

Although the Convention for the Law of the Sea determines the areas of the EEZs, it of course, allows for negotiations between the parties, international arbitration, and other mechanisms for conflict resolution. The EEZ around an islands is a common issue in such conflicts, such as the Philippines vs. China; Romania vs. Ukraine; and Bangladesh vs. Myanmar, all of which involve islands and the maritime territories they provide at the expense of the mainland country. Turkey mentions in particular the conflict over EEZs between Nicaragua and Colombia, which has similar characteristics (control over islands that provide a large EEZ at the expense of the mainland country) and which was resolved by a ruling that divided the maritime territory between Nicaragua and Colombia not according to the Convention for the Law of the Sea.³

On the other hand, other countries of the region, as well as global players, are reacting negatively to the Turkish moves. Apart from Greece and Cyprus, whose sovereignty is being threatened by Turkey, Egypt has viewed Turkey as a rival at least since the end of Mohamed Morsi's rule, if not before. EU states, led by France as a Mediterranean nation, are opposed to the Turkish position, as is the US. Nonetheless, so far, the US and the EU have not assertively opposed the Turkish moves or actively supported Greece and Cyprus, and it remains to be seen if they will do so in the future. Without their intervention, the countries of the region will have to rely on themselves and on cooperation between them in order to deal with the threat from Turkey. Furthermore, Erdoğan's lack of success in resolving the current round of confrontation between Armenia and Azerbaijan in the Nagorno-Karabakh region reduces the chances that Turkey will adopt a more conciliatory position in the Mediterranean anytime soon.

3 It is beyond the scope of this article to describe the legal complexity of delimitation of maritime boundaries in international law; however, it can be stated in this context that the precedent of the conflict between Nicaragua and Columbia is not completely analogous to that between Turkey and Greece, since in the former case there were previous agreements on the matter between the countries.

Turkey-Russia Maritime Relations

Ido Gilad and Tim Jenkins

Introduction

In recent years, Turkey has engaged in a range of ambitious programs in the military, energy and economic fields with the aim of reviving its historical power and expanding its geo-strategic position in the MENA region and beyond. In support of this "*Neo-Ottoman*" agenda, Turkey is acting at times aggressively in the maritime arena, through the "*Mavi Vatan*" or "*Blue Homeland*" doctrine; increasing its Naval assets and power projection capabilities in the near seas, as well as laying claim to energy resources in conflicted areas of the Mediterranean.

This activity has increasingly brought Turkey into contact with Russia, a traditional rival, who have competed in the maritime realm since the time of Tsar Peter the Great. The relationship between the two states have historically oscillated between one of cooperation and competition. Not including prior or subsequent skirmishes, 14 major wars have taken place between 1568 and 1918; beginning with the Russo-Turkish Wars which predominantly related to control of the Black Sea, and ending with World War I. In the current era the Russo-Turkish dynamic is complex, with overlapping areas of interest and conflict. Both Russia and Turkey can be observed enacting multifaceted strategies. The two have substantial and lasting areas of cooperation in energy, as well as in the maritime arena.

Background

Throughout history, competition between Turkey and Russia has taken place in the maritime arena. This rivalry stretches back 325 years to creation of the Russian Navy by Peter the Great who stated "*Any ruler that has but ground troops has one hand, but one that has a Navy has both hands*".¹ The primary role of the Navy was securing access to the open seas.

The Ottoman Navy dates back further, with its first shipbuilding facilities beginning in the 14th century under Bayezid the First, with the aim of controlling the straits, and grew into a significant naval power in the 15th and 16th centuries with their extension into the Mediterranean Sea.

1 ONI, (2015). *The Russian Navy A Historic Trastion*. Washington: The Office Of Naval Intelligence.

Peter the Great recognized the decline of the Ottoman Empire and its defeat by Vienna in 1683 as an opportunity for Russia to expand its power and gain access to the warm water ports of the Black Sea. He personally headed the construction of naval vessels, known as the Azov Fleet, and directed their use for a combined land and sea Russian attack on the Ottoman Azov fortress on the Don river estuary. Finding the surrounding waters too shallow for their needs, in 1696 first port for the Russian fleet in the Black Sea was established in the deeper waters of the Azov Sea at Taganrog, some 25 nautical miles west. Russian naval influence was expanded in 1774 to include the Bosphorus and Dardanelles, with the signing of the Küçük Kaynara agreement with the defeated Ottomans. Russian naval dominance over the straits was completed when the two nations cooperated to defeat the insurrection of Muhammad Ali whose armies extended from Egypt as far North as Syria. The Russian provision of Naval assistance to the Ottomans led to the signing of the Hünkâr İskelesi agreement in 1831, which lasted until the intervention of the West in 1841.

As demonstrated, the hegemonic aspirations over the maritime routes have long been a fundamental contact point between Russia and Turkey. During the creation of the modern Turkish Navy by Atatürk in the early 1920s, the Turkish Directorate of Naval Affairs purchased ships from the Soviet Union, in an early show of cooperation between the USSR and the New Turkish Republic.

The 1936 drafting of the "*Montreux Convention*", returned to Turkey control over the maritime transit routes from the Black Sea to the Mediterranean, through the Bosphorus and Dardanelles straits. The convention relates to all shipping, though is perhaps most strategically significant to the transit of military vessels, as well as dangerous goods shipments, both in peace time and certainly in times of tension. Importantly however, this control does not extend to the levy of fees or taxes for use of the narrow straits, which are subject to regular norms of freedom of navigation.

In recent years the Eastern Mediterranean nations have focused on the potential for exploration and production of subsea fossil fuels and its transportation, by vessels as well as through pipelines. The strategic competition for energy resources among the regional actors raises the economic and geo-political significance of the zone, also known by the term of "*Energy Diplomacy*".

This geographical area of importance is significant for Turkey, positioned in a geo-strategic junction in the heart of the Eurasian continent, between the Caucasus, the Balkans and the Middle East. From a historical perspective, Turkey's influence over the region stems from the time of the Ottoman Empire with its geographical

conquests, as well as its role as leader of the Sunni Muslim World which ended with the declaration of the modern Turkish Republic in 1923.²

For the Russian Federation (RF), as the successor of the Soviet Union, much importance is given to its peripheral territories, which act as a buffer zone against foreign aggression. This is especially relevant in its South West which provides strategic access to the Black Sea, and from there and exit through the Bosphorus and Dardanelle Straits to the Mediterranean and beyond. This importance can be seen in various Russian activities in the area, of note Russia is planning to hold its annual command and control (C2) exercise in the Black Sea, this year named "*Caucus 2020*" in September.

Nonetheless, in recent years Turkey has reminded the Russians of its own regional aspirations through control on this significant maritime junction, which is perceived as Turkish inland waters. A reminder of its maritime dominance over the straits was observed in Turkey's posturing towards Russia immediately after the downing of a Russian Sukhoi-24 fighter plane over the Turkish-Syrian border in November 2015. In the subsequent diplomatic exchanges, Turkey was quick to signal to Russia their ability to close, or deny access to the strategic choke point in the event of further escalations. Surprisingly, the mutual connection between the two leaders were tightened after the crisis, with Erdogan and Putin renewing the spirit of coordination which prevailed between them throughout Putin's first decade of rule, prior to the outbreak of the "*Arab Spring*".

Some of the expressions for mutual partnership is also evidenced by the Turkish procurement of Russian weapons, such as the advanced S-400 air defense systems, which were declared operational by Turkish Army forces in 2019.³ An offer for additional units was raised by Russia as late as June 2020. The Turkish acquisition has severely strained the US-Turkish relationship with the US withholding the delivery of F-35 aircraft to Turkey. This rift further strengthens the Russian position who have offered Turkey the possibility of acquiring Russian-made Sukhoi-35s in replacement of the F-35s.

Another initiative by President Erdogan which emphasizes the importance placed on maritime issues by Turkey, can be found in an enormous transport and infrastructure project, aiming to duplicate the strait's current passage by a parallel artificial canal. The project, known as the "*Istanbul Canal*", is still in the planning stages, though

2 Dewdney, J. (2020). *Turkey*. Retrieved 2020, from ENCYCLOPÆDIA BRITANNICA.

3 Kasapoglu, C. (2020). Turkey's Critical "S-400 Moment" Has Arrived. *Eurasia Daily Monitor: The Jamestown Foundation*, 17(61).

is slated for completion in 2023 in order to symbolically honor the centenary celebrations of the foundation of modern Turkey by Atatürk. The centenary also coincides with the completion of two decades of Erdoğan's own rule. The artificial sea water canal is proposed to be cut west of the city of Istanbul and is planned to be approximately 40 kilometers in length, with a width of some 150 meters. This project is expected to reduce the current volume of vessels transiting the straits (about 40,000 a year). In addition, it would establish mooring areas, infrastructure projects including warehouses and storage facilities, also residential complexes on canal banks. The project is expected to contribute to the Turkish treasury through its maritime revenue, by fees and taxes to be collected upon vessel's passage, as being done in the existing Suez and Panama Canals, and projected in the future Russian "Arctic Suez Canal" project. Such fees currently cannot be collected from the transit of the Bosphorus straits. This futuristic flagship project of Erdoğan is expected to demonstrate Turkey's national maritime power, its status as a modern state, though perhaps most importantly, it places the Blue Homeland Doctrine (*Mavi Vatan*), at its top priority.⁴

Turkey's maritime orientation has therefore evolved fundamentally in view of the uniqueness of the country's geography. Most of its territory, the Anatolian Peninsula is bounded by the Azov and Black Seas to the north, the Sea of Marmara, the Aegean Seas to the west, and the Mediterranean Sea to the south. The length of the country's coasts (7,200 km) is 2.5 times greater than its land borders (2,816 km). About eighty percent of Turkey's population is concentrated along its coasts, while the city of Istanbul itself contains around twenty percent of the country's total population, and has held the status of Europe's biggest city since 2005.

Another indicator of Turkey's naval orientation in recent years is the development of and retaining bases and ports in distant territories, far from its own borders. Among them are the Island of Sawakin near the port of Sudan, Qatar and Somalia. This course expanded the naval influence of the Blue Homeland doctrine - as previously focused on the maritime space in its littoral waters (*Mavi Vatan*) towards the open seas (*Açık Denizlere*).⁵

Initially, the seizure of Northern Cyprus in 1974, led to the Turkish claim that the northern part of the island was in fact an independent Turkish territory. This argument

4 Kasapoglu, C. (2020). Turkey's Growing Military Expeditionary Posture. *Terrorism Monitor: The Jamestown Foundation*, 18(10).

5 Kasapoglu, C. (2020). Turkey's Growing Military Expeditionary Posture. *Terrorism Monitor: The Jamestown Foundation*, 18(10).

was followed by Turkey's claim to vast economic waters in the Mediterranean, mainly to the West and South of the island of Cyprus. Turkey's latest plans for new energy exploration off Cyprus' shores,⁶ could fuel Mediterranean tensions, as Cyprus together with Greece reject what they consider as illegal Turkish incursions into the Cypriot exclusive economic zone (EEZ).

Since the creation of the 200nm EEZ with the 1982 Law of the Sea Convention (UNCLOS), competition has arisen among states across the world, and in the Eastern Mediterranean in particular due to interests in the rights, production and exploitation of natural resources as were found in the region's deep sea. Sovereign entities, or non-state actors such as multinational corporations acting on their behalf, compete for rights and royalties for the exploitation of fossil fuel resources, most notably natural gas. In addition to resources, a number of other key maritime industries play an important role; seaborne trade, maritime transport, commercial fishing, sporting, tourism and other matters likewise are subjected to competition among the regional players.

The majority of Turkey's energy requirements are currently centered on fossil fuel energy sources. Historically, the majority of this energy was delivered in the form of natural gas, over 70% of which was provided by the Russian energy giant Gazprom. The gas is delivered through the "Turkstream" subsurface pipelines crossing the Black Sea from Russia before reaching Turkish shores. It not only served Turkey's own needs, but also provided revenue through taxation on the transit of energy exported to other consumers, mostly in Western Europe, with some in Eastern states, such as Bulgaria.

Turkey actively attempts to diversify its energy suppliers, with Azerbaijan overtaking Russia in natural gas supply in 2020. Figures show a decrease of up to 72% from Russia,⁷ placing them close to US LNG in terms of gas supply⁸ (see Figure 1). However, due to a "take or pay" clause in the Gazprom contract, Turkish companies are thought to be in significant debt to the company,⁹ which constitutes a point of leverage for Russia moving forward.

6 Kokkinidis, T. (2020). *Turkey Plans New Drilling Off Cyprus, Fueling Mediterranean Tensions*. Retrieved 2020, from Greek Reporter.

7 Mammadov, R. (2020). Turkey Makes Strides in Diversifying its Natural Gas Imports. *The Jamestown Foundation Eurasia Daily Monitor*, 17(97).

8 Daily Sabah. (2020). *Turkey's Purchase of Russian Gas Drops by 62% Year-on-Year*. Retrieved 2020, from Daily Sabah.

9 Mammadov, R. (2020). Turkey Makes Strides in Diversifying its Natural Gas Imports. *The Jamestown Foundation Eurasia Daily Monitor*, 17(97).

A further example for a departure from the fossil fuel dependency can be observed within the construction since 2018 of Turkey's first civilian nuclear reactor in Akkuyu, located in Mersin Bay on the Mediterranean Sea, by the Russian state-owned company Rosatom. According to plan, the project should be completed in the centennial year 2023. In addition, Turkey plans a string of other new reactors to be implemented across the country.¹⁰

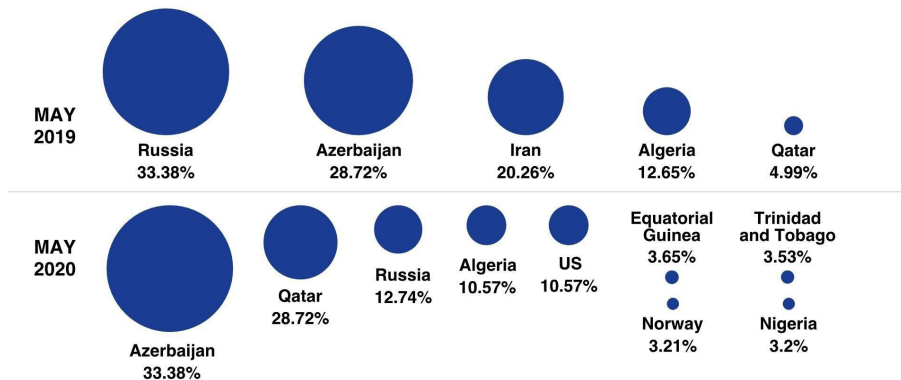


Figure 1: Turkey diversifies gas imports (Daily Sabah, 2020)

A number of potential alternative avenues of supply have been considered, the most prestigious of which for Turkey is based on its own independent maritime resource exploration for energy sources in the Eastern Mediterranean Sea. From Ankara's point of view, such actions are within its rights, however such aggressive moves are viewed as illegal by neighboring states. Turkey has deepened its relations with Qatar, Somalia and Sudan to strengthen its energy supply routes, as well as for political and military considerations. Turkey seeks to secure alternative sources of energy from Libya too. The Turkish involvement there was encouraged by its successes and experience in the Syrian arena, partly in coordination with Russia.

Turkey's demonstration of its regional power projection capabilities has a number of key factors. First, Erdogan's evident Neo-Ottoman agenda, with his ideological view of Turkey as the leader of the Muslim world. Secondly, Ankara recognizes its aspirations towards membership in the EU are unlikely to come to fruition and recognizes a weakening in the traditional NATO alliance. Third, Turkey's view of the US and Western withdrawal from the Syrian arena and the Middle East more broadly, which has resulted in higher tolerance for Turkish military actions and has further motivated Ankara's adventurism and expansionism. Finally, all of the above factors

10 WNA, (2020). Nuclear Power in Turkey. Retrieved 2020, from World Nuclear Association.

aid in Turkey's quest for energy diversification through securing transit routes both to and through Turkey.

The use of such techniques, especially the use of Islamist proxies, has affected Turkey's fragile position on the continuum between Russia on the one hand, and the West on the other, specifically considering Turkey's status as a full member of the NATO alliance. Further inflaming tensions are Ankara's threats to allow large streams of refugees to cross over from Turkey to European countries, as well as tacitly allowing the transit of many through the Aegean Sea to Greece, negatively affecting relations with its Western allies. Russia benefits from this tension within NATO as will be further demonstrated below.

Competition in the Russo-Turkish Relationship

The multi-faceted relationship between Russia and Turkey has been the cause of competition, punctuated by periods of cooperation. This dynamic has continued bilaterally since Tsarist époque, throughout the 20th century during the Cold War and the collapse of the Soviet Union, until the present time following the foundation of the RF.

In the Black Sea, Turkey retains a comparative advantage in overall naval platforms with 69 surface vessels and 14 submarines,¹¹ and seeks to strengthen their anti-ship missile arsenal through production of its own advanced surface to surface missile "Atmaca". Erdogan is also acting to further build Turkey's naval capabilities, in line with the Mavi Vatan, Blue Homeland doctrine and beyond. In addition to the Atmaca missile program, Turkey is reinforcing its naval power projection capabilities with new systems designed to carry a range of weapons, including both manned and unmanned platforms.

By comparison in the Black Sea, Russia currently retains the comparative advantage in aerial assets. In addition, in terms of coastal based systems, Russia has greater strike capacity through its missile systems, such as the Kaliber series. Russia's excellent non-kinetic sharp power capabilities, including information operations, act as a force multiplier to the aforementioned systems. These combine to form a formidable exclusion doctrine, known "*anti-access area denial*" (A2/AD). Like the Turks, Russia is also expanding its naval force structure in the Black Sea including 20 new combat vessels, including 6 Frigates, 3 submarines as well as new missile

11 Gogwadze, G., Tskhakaia, G. (2019). Black Sea Security: Vision and Ideas. *Black Sea Security*, 4(36).

boats.¹² Putin himself attended a ceremony in Crimea for the building of two new amphibious landing ships,¹³ demonstrating the importance Russia places on this force expansion. This general trend is reflected also in the Mediterranean arena, through its bases in Tartus and Latakia.

Russia's expansionist tendencies became apparent in the period beginning with the 2007 Estonian "First Cyber War", followed by the 2008 invasion of Georgia, which supplied Russia with additional seaport in Abkhazia on the Black Sea. The annexation of the Crimean Peninsula in 2014 increased and strengthened Russia's position and control over the Black Sea region. Demonstrating its power, Russia conducted in this maritime arena a large-scale maneuver in early 2020, which included missile launches, and was notably attended by President Putin and high-ranking Russian officials. Russia is strengthening its global maritime position, and developing its fleet as a top priority. This trend can also be observed in the Mediterranean arena. Russia's participation in the fighting in Syria since 2015 supporting the Assad regime has rewarded it with further forward operating bases for its land, sea and air forces, specifically in the ports Tartus and Latakia, as well as air power based at the airport of Khmeimim in Latakia province. This strategy in Syria has successfully facilitated an expanded Russian footprint in the region, with a 49 year lease granted to Russia over the strategic port of Tartus, doing much to consolidate its aspirations for power projection capabilities into the future over the entire Eastern Mediterranean, beyond their Black and Caspian Seas bases.

These various outposts could serve Russia as a potential multi-directional maritime deterrent over Turkey in the vectors; of the Black, Caspian, North and Eastern Mediterranean Seas. The consolidated forward operating bases and asset concentration on the eastern Mediterranean allows Russia to advance its A2/AD Doctrine over not only the Syrian coast and Eastern Mediterranean, but also significantly expands Russian influence in the Central Mediterranean, specifically the North African Coast, Algeria, Egypt and perhaps most importantly Libya.

In the Chaos of the Libyan Civil War following the UN mission which led to the overthrow of Qadhafi, multiple actors have vied for dominance in the war-torn country. Turkey chose in 2019 to support the UN recognized Government of National Accord (GNA), based in the capital of Tripoli, also supported by Qatar and Italy. The move gave the Turks access to Libyan energy sources, both on land and sea

12 CGS. (2020). *Policy Paper: Trends of the Security Situation in the Black Sea Region*. Kyiv: Center for Global Studies. p. 2.

13 Ibid. p. 4.

facilitated in part through the creation of a new EEZ, demarcating the Libyan and Turkish maritime borders.

The parties who support the opposing Libyan Eastern National Army (LNA) include Russia, Egypt, France, Saudi Arabia, Jordan and the UAE. This has led to tensions recently between France and Turkey, both NATO members, who allegedly support opposite sides in the conflict. Most recently, in a significant escalation in the maritime domain, a French Naval Frigate tried to board a Tanzanian flagged vessel suspected of carrying weapons to Libya, banned under the UN embargo. The French complained that, in contravention of NATO rules and international norms, they were prevented from boarding the suspect vessel when three Turkish warships targeted the French frigate with weapons system radars, forcing the abortion of the mission, as well as French Naval participation in a NATO drill in the Aegean Sea,¹⁴ and culminating in the French suspending their related NATO activities.

Trilateral relations between Turkey, Russia and third parties are also worthy of examination; an important example can be found in the current dynamics between Russia, Turkey and Egypt. Russia is cultivating deep ties with both regional powers in regards to energy and infrastructure, including civilian nuclear reactors, as well as the supply of military equipment. At the same time, there is considerable tension between Turkey and Egypt. While the Egyptian-Turkish rivalry is but one of many in which Russia plays a role on both sides, it is a particularly poignant example as it takes into consideration many of the core values of Turkey as outlined above. This can be observed most recently as the two have taken opposite sides in the Libyan conflict, with Egyptian troops formally entering into Libya in 2020. In addition, Egypt fundamentally rejects Turkey's association with the Muslim Brotherhood, Hamas and Qatar, as well as Erdogan's desire for leadership of the Sunni Muslim world. Furthermore, the signing of the Turkish-Libyan EEZ deal had caused considerable concern over fossil resources, most notably gas field exploration in the Eastern Mediterranean. These tensions, as well as others, have led to a regional treaty called the EastMed Gas Forum (EMGF), settled in Cairo, between Egypt, Greece, Cyprus, Jordan, Italy, Israel and the Palestinian Authority. What is clear is that the Russians seek to expand their interests with all parties, in the furtherance of its own pragmatic interests.

14 Corbet, S., Cook, L. (2020). *France Freezes Role in NATO Naval Force Amid Turkey Tensions*. "The suspension is from NATO operation "Sea Guardian" (held since 2016), with the purpose to prevent terrorism, weapons proliferation, and other maritime threats in the Mediterranean arena".

Turkey is well aware of the Russian relative advantage in the military fields, as well as in the energy market. However, Turkey does not ignore some possible scenarios in relation to the future of the Russian Federation which may increase its own strategic position. Factors such as the declining Russian population over the next decade and its anticipated effects on the Russian economy and national resilience. The population decrease has not yet taken into account recent potential effects caused by the Covid-19 crisis. In contrast, the Turkish population shows no sign of decrease. In addition, there is a relevant question about "*the day after*" President Putin. Even though formal legislation was introduced in June 2020 extending Putin's presidential term until 2036, Putin is currently 67 years old, thus a sudden change in leadership could be expected to have negative effects on the Russian economy and cause uncertainty in their strategic direction.

Cooperation in the Russo-Turkish Relationship

Russia seeks to retain its position in energy supply, as well as expanding its political influence in the region, strengthening its role as "mediator" among the players various conflicts. This status could for example increase dialogue with Turkey as well as the GNA in Libya which Turkey, still mindful of Russian energy cooperation, may support.

The Russian company Novatek, with its probable affiliation with Putin administration, is linked to some of the regional exploration initiatives for fossil energy, together with other foreign companies such as the French TOTAL and Italian ENI. Their activity commenced in March 2020, West of the Lebanese coast. Turkey also put efforts into conducting research in this maritime space, as it does in other locations in the Eastern Mediterranean Sea. To this end, Turkey currently owns and operates three research vessels. As demonstrated, Turkey shares with Russia various areas of mutual interest and activity, both in the military and energy realms. This could potentially lead to a deepening of cooperation between the two in related areas, from maritime assets to intelligence sharing and military procurement. Both states share the mutual interest of reducing the impact of the emerging EMGF. Turkey is the forum's key opponent and Russia's relative power in the energy field is expected to be weakened by the EMGF, which as a consequence could possibly bring both into closer cooperation as noted above. A recent "*Tweet*" in June 2020, obeisantly on behalf of the Turkish Foreign Minister may represent a probing of Israeli interest to a return to bilateral negotiations

on maritime and energy issues and coordination.¹⁵ Strengthening this assumption, in July 2020, Turkish Admiral (Ret.) Yayci presented a map on national television, outlining the potential borders of a new EEZ with Israel (see figure 2). It could also be assumed that a condition of such talks would be the withdrawal from the EMGF by the Israeli side. Russia, due to its ties with Turkey, may tacitly support these initiatives even if it does not openly acknowledge Ankara's approach.

Erdogan has not forgotten Putin's support during and in the wake of the failed coup attempt of 2016 while other Western nations protested Erdogan's trampling of human rights in response to the coup. The Russian Deputy foreign minister has recently pointed out that the relations between the two countries reflect the strategic partnership between Russian President Vladimir Putin and his Turkish counterpart Recep Tayyip Erdogan.¹⁶



Figure 2: Admiral Chiat Yayci, 25 July 2020¹⁷

- 15 Mehmet kara@emehmetkara twitter from 18th June 23:03: "Turkey foreign minister Cavosuglu says: Turkey can work with Israel in East Mediterranean if Israel cancels the agreement they made with Greek administrated Cyprus. earlier we said we can work with everyone except Greek administration Cyprus". ehmet kara@emehmetkara twitter from 18th June 23:17 in addition Israel earlier had some attempts to bring their natural sources to world market via Turkey because they know very well that Turkey is the most feasible way
- 16 MEMO. (2020). *Official: Russia-Turkey Relations Based on Solid Foundations*. Retrieved 2020, from Middle East Monitor
- 17 Twitter@Haberturk tv / @ersoyakif1.

Conclusion

As demonstrated above, the oscillating nature between numerous wars and confrontations, with periods of cooperation in Russo-Turkish relations are an historical and lasting feature between the two states, comprising multiple factors, central among them geography and the strategic maritime access routes from the Black Sea. Nonetheless, the current dynamic can be viewed through a prism of strategic pragmatism, with both sides acting to capitalize on regional instabilities and uncertainty while remaining cognizant of the factors which are likely to unite or divide the nations, in order to keep the balance while managing domestic expectations.

An example of this can be seen in the recent and controversial decision by Erdogan to reverse the decision of Ataturk regarding the status of the UNESCO listed Hagia Sophia Museum, by converting it into a mosque, in line with the Islamic and Neo-Ottoman tendencies of his domestic base. The building dates to the 6th century and was built as the central Cathedral of Byzantium until its conquest in 1453 by the Ottomans, and has traditionally been the source of tensions with the Eastern Orthodox Church. Hence, the relatively subdued response to this affront by President Putin, who uses the Russian Orthodox Church as a tool of state, can arguably be viewed in light of this strategic pragmatism. Russian energy projects such as the new nuclear power plants, as well as gas, could be assumed to figure prominently in the Russian cost benefit analysis. In addition, Turkey's consistent drift away from its EU aspirations and the West, highlighted in the current tensions with its NATO partners, is a boon for Russia in fragmenting the alliance, and causes Turkey to seek alliances elsewhere, with Russia acting to encourage Turkey into expanding their strategic partnership.

Turkey under Erdogan is viewed by many observers as a Neo-Ottoman revisionist power. As with numerous countries, Turkey sees a trend towards a multi-polar world in which control of, or at least a strong presence in the world's sea lines of communication (SLOCs) and strategic choke points are imperative. In the perception of Ankara, the rulings of UNCLOS regarding EEZs has deprived it of the share in the natural resources the Eastern Mediterranean, which has led it to draw bilateral EEZ boundaries with Libya, much to the consternation of its neighbors. Furthermore, its lack of financial benefit from the shipping passing through the Bosphorus straits has been a prime motivator in Erdogan's Istanbul Canal initiative. These factors have driven the Blue Homeland, *Mavi Vatan* doctrine and the Turkish push to increase its naval power both in its littoral waters, as well as further afield; as evidenced by its established bases in Sudan, Somalia and Qatar, as well as the use of Misrata and Tripoli Ports in Libya, with construction of a permanent base said to be taking place in Misrata. In addition, in late July 2020 unconfirmed reports surfaced of a Turkish

port deal in Muscat Oman.¹⁸ Whilst the reliability of the reports regarding Oman are in question, there is no doubt that Turkey wishes to expand its influence over the Persian Gulf, strategic straits of Hormuz and Gulf of Oman beyond its current operating base in Qatar.

The current Corona-19 pandemic and its long-term effects on demographics, energy prices and geo-politics are yet to be fully understood, though the flux created in the world order and supply chains can be expected to cause all parties to seek strategic advantage wherever possible. How this will affect the Russo-Turkish relationship remains to be seen. What can be sure, is that Erdogan will continue to use the "*Turkish Bazaar*" strategy to negotiate with regional states in the economic, military and maritime realms.

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Section Three: Naval power buildup, challenges and lessons from the past

The arrival of the Sa'ar 6-class corvette boats to Israel in 2020 is a significant milestone in the strengthening of Israel's naval forces. The enhancement of the navy is intended to counter the main present-day challenges and bolster the navy's strength, based on past events. Beyond their arrival, these boats symbolize the broadening of the IDF naval missions to areas outside of Israel's exclusive economic waters.

As surveyed in the previous strategic maritime evaluation, the chapters on power building in the present strategic assessment revolve around three central axes: surface vessels appropriate for the Israeli navy,¹ advanced technological topics (including unmanned vessels and their combat operations theory),² and building special operational abilities such as amphibious landing capabilities³ or dealing with naval minefields.

In the area of building naval strength, Ido Ben Moshe describes the central threat references in relation to **defending Israel's gas production rigs** as well as the building of a naval power to respond to these threats and its operational theory. One of the four Sa'ar 6 boats has already arrived in Israel, and is in the process of being integrated and having its weapon systems installed. The process must be completed by building a professional and organized guidance mechanism to protect various maritime facilities in the economic waters of the State of Israel.

Shlomo Gueta writes about the unexpected Egyptian naval minefield in the Strait of Jubal during the Yom Kippur War. The damage to the tanker "Sirius", in service to Israel bringing gas from the oil fields in the Gulf of Suez to Eilat, inflicted by a mine and causing it to sink as well as another mine that damaged the tanker "Serenya", exemplifies the effectiveness of naval mines in imposing a blockade and closing sailing lanes. Much can be learned from past events regarding how to deal with present maritime threats in the area, whether these come from Hizballah in Lebanon, or from terrorist entities in the Gaza Strip, or even further, from the Houthis in the southern Red Sea, supported by Iran, and using naval mines in the area of the Bab al-Mandab Strait.

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- 1 See Eli Rahav, The Sa'ar Boats – The surface combat force of the naval service, Greater Maritime Strategic Evaluation for Israel 2019.20. <https://drive.google.com/file/d/1iu3iMnBMZdXyqHuAQ-4lwGT1UupX5Ej6/view>
 - 2 See Roi Nagler, The challenges in operating autonomous sailing vessels in the globalization era – The case of autonomous merchant ships, Greater Maritime Strategic Evaluation for Israel 2019.20. https://drive.google.com/file/d/1kC-YMl03_E3o5qtXYdv_oDzxiuR3nSfj/view
 - 3 See Benny Shpiner, Fifty years after the War of Attrition – Amphibious landing – Lessons from the past and future challenges. https://drive.google.com/file/d/1x55zTN6JtJSlIIXPKngxZrHJrFkj_cQ-Y/view

An additional survey having a historical dimension yet with significant importance to the present is brought by Yossi Ashkenazi in his chapter on the alternative possibilities that have been discussed over the years regarding establishing **a port in Gaza**, or a pier dedicated for use by Gaza in a port in the area. A port in Gaza involves complex aspects of Israeli security supervision to prevent the Hamas acquiring arms while balancing the economic needs of the two million people living in the Gaza Strip, alongside it being a port where ships from around the globe anchor – a symbol of Palestinian national sovereignty. It would appear that as long as the Hamas regime in Gaza is stable, it is impossible to expect a change in the present situation in which goods and merchandise for Gaza comes in through Ashdod port.

Itsik Bilia writes about a 'MITNOSES' project, the development of an unmanned helicopter for the missile boats of the Israeli navy. The project perhaps was ahead of its time (the end of the 1980s) but today the unmanned and autonomous aerial, and even maritime, vehicle industry is booming. Alongside the complexity of the area of the eastern Mediterranean Sea, and the added missions assigned to the navy along with the need to protect the gas production rigs, the question arises regarding the use of unmanned aerial vehicles by the navy. This is also in light of the fact that the Sa'ar-6 boats that have recently come to Israel are equipped with manned helicopters.

Implementing of Maritime Defense concepts for Protection of Israel's Economic Waters

*Ido Ben Moshe*¹

Introduction

For the past two decades, the State of Israel has been involved in the development of energy resources in its economic waters. This activity has generated a number of important processes that have a strategic impact on the country and may shape the future and status of its sea within the State of Israel's national strategy.

The importance of Israel's maritime domain has grown in recent years. This calls for multi-dimensional planning and organizational integration that will ensure the achievement of Israel's national goals on the political, security, energy and economic levels.

An energy project on a national scale is a particularly complex endeavor and includes the planning and construction of maritime facilities, production infrastructures and transmission systems (particularly long ones in Israel's case). It requires the evaluation of numerous factors, including, among others, the geographic location of the facility, its effect on the environment and the safety risks that accompany its operation. In addition, it requires an evaluation of all threats, based on an assessment of Israel's security and geostrategic situation. As part of this evaluation process, the central question facing decisions makers is the threshold required to defend and secure the day-to-day operation of the facility from the viewpoint of safety and security. Among the many considerations—and based on the strategic importance of a maritime energy facility for Israel and in consideration of Israel's geostrategic situation—security will carry major weight.

Damage to a maritime facility which serves as an important component in the supply of natural gas to the State of Israel will have implications beyond simply the damage caused since it has the potential to disrupt electricity generation in Israel, which in turn will have adverse effects on economic activity. On top we should note other important elements, such as the economic damage (the cost of repairing the facility) and environmental, perceptual, and commercial damage. In addition, this will lead to a reduction in the deterrence of the IDF and the State of Israel. Maritime facilities in general and those in Israel in particular are already today subject to threats from

1 This chapter is an updated and shortened version of a paper written by the author in 2010 for the National Security College.

a wide variety of players: nation states, national armies, terrorist organizations, extreme environmental and social activists, hackers and possible even players with economic interests. This list will likely continue to grow in various directions. The character of the threats and their intensity are liable to be highly diverse, and they will have a changing profile over the years.

As a result, the State of Israel, the IDF and the navy have in recent years taken actions to update and modify the strategy for the navy and IDF operations according to the changing geostrategic reality that was created when the Eastern Mediterranean Basin became an essential and valuable strategic zone for the State of Israel. In this context, it should be emphasized that this view is also applicable to other countries in the region who look at the sea as a promising economic resource, some of whom have also implemented that approach in practice (militarily and politically) with the goal of strengthening their position in the Eastern Mediterranean Basin. Their importance, as well as the implications of any damage to the natural gas infrastructures in the Mediterranean, necessitates an evaluation of the risk that the State of Israel may have to deal with in the protection of its economic waters.

In this chapter, we will present an assessment of the progress made so far in the development and revision of the operational concepts that will lead the actions of the Israeli navy and that is required to protect Israel's economic waters, in view of the changes that are developing already at this point in time. These changes will have a decisive impact on the existing security doctrine, which is meant to ensure Israel's sovereignty also in its waters in the Mediterranean. In what follows, we will describe the directions we recommend for policy making in order to provide an appropriate conceptual approach to ensure control over Israel's economic waters and the energy infrastructures located within them. Maritime awareness can provide a future platform for achieving naval superiority in a conflict and a solid basis for the development of a grand maritime strategy for the State of Israel.

Maritime elements of the national security doctrine

To the extent that it is possible to predict, the nature of future wars and conflicts will continue to change; nonetheless and despite the lack of certainty with regard to the nature of a future conflict, it is possible to identify certain trends based on the arms acquisition and buildup of power among Israel's enemies. It can be assumed that also in future wars, the resilience of the Israeli home front will be tested to a great extent and the economy's infrastructure and population (the civilian home front) will serve as a target for missiles and rockets. As part of the process of evaluating the intensity and quality of the overall threat (land/air/other) to the energy infrastructures in the

Mediterranean, it is worth considering a number of unique characteristics that affect the regional balance of power and deterrence to a great extent. The main claim that we wish to present to the reader is that the development of the offshore natural gas sector constitutes a "change in reality" that requires major policy revisions on a national level.

The geographic dimension – Until a few years ago and since the establishment of the State, Israel has assigned importance to its maritime sovereignty and has used the navy to ensure control over its territorial waters, without any special emphasis on the issue of its economic waters. Although over the years the navy has operated far out at sea, the character of this activity was focused on a specific operational mission, rather than routine security activity, and without any permanent presence far out in Israel's economic waters.

The economic waters are a large maritime expanse that will be added to Israel's waters after the approval of the Maritime Zones Law.² The importance of this area is a direct result of the natural resources and energy infrastructures located within it. This calls for Israel to ensure its control over this area and its defense.³ The physical size of the economic waters is somewhat larger than Israel's total land territory. This is a large expanse of sea, which is distant from the coast and as a result the ability for civilian governance is limited there. Similarly, the possibilities for military activity (maritime awareness: deterrence, response, a control network and "constructing a picture"⁴) are limited due to the reliance on coastal infrastructures and ocean-going vessels.

The dimension of surprise – The strategic change that has occurred in the enemy's strategy to defeat Israel has led to discarding of the idea of Israel's conquest and destruction while at the same time the Israeli home front has become the primary target for aggression. This is part of the intention that major damage in the home front will lead to attrition that will "break" the State of Israel. This approach continues

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- 2 Proposed Maritime Zones Law, 2017. <https://main.knesset.gov.il/Activity/Legislation/Laws/pages/LawBill.aspx?t=lawsuggestionssearch&lawitemid=2022714>
 - 3 There is a gradient of a coastal country's sovereignty and responsibility, beginning from its territorial sea, to its contiguous zone and finally its Exclusive Economic Zone (EEZ). The sovereignty in the EEZ is limited primarily to the exploitation of natural resources (and other elements) as described in the United Nations Convention for the Law of the Sea (UNCLOS, 1982). Israel is not a party to this covenant (which it has not signed), but has declared on a number of occasions that it will fulfill the policy of the Convention and its instructions.
 - 4 The operational process that characterizes the detection and classification of maritime targets, up to the ability of tactical presentation, exploitation and information generation.

to motivate the intensive buildup of power based on missiles and rockets in the intermediate and long run (an effort that is seeking greater and greater precision and destructive power). This threat and the strategic importance of the offshore infrastructures to the State of Israel, in our opinion, make the scenario of a first strike as particularly feasible and attractive in the eyes of Israel's rivals. The continuing improvement in the range of missiles and rockets and the large-scale efforts by Syria and the Hezbollah, with the support of Iran, to achieve precision in a missile strike means that a maritime facility becomes an optimal target for a surgical strike. This will be achieved with only a small loss of civilian lives,⁵ but will provide Hezbollah (or Iran) with a victory picture and will cause decisive damage to the home front, to the Israeli economy, to the national morale and to the ability of the population and the economy to endure crisis situations.

Greater asymmetry between Israel and its neighbors – The maritime facilities exacerbate the lack of balance between Israel and some of its neighbors. Already at this point in time, the disparity in GDP per capita between Israel and its neighbors is almost unbridgeable. The maritime facilities make Israel more vulnerable to its enemies in terms of energy security. It creates a lack of equilibrium on the basis of maritime borders⁶ and Israel's existing energy reserves. The development of advanced infrastructures for oil and gas exploration by Israel's neighbors—and primarily Lebanon—is in the future liable to improve the balance of threats from both sides of the maritime boundary.

The strategic home front, deterrence and sources of friction – In recent years, the maritime domain has become a direct source of friction and confrontation. Over the years, the uniqueness of the maritime domain has been manifested in the absence of any major threat. The sea was a domain in which activity was not subject to threats arising from the friction and close proximity that characterize Israel conflicts on land. This reality is very different today. Currently, a large part of the maritime arena is threatened by coast-to-sea missiles which can be deployed on command, or alternatively with the start of fighting, at launch position in Lebanon and Syria.⁷ In the existing reality, the maritime domain and its boundaries are liable to become

5 The number of workers on a maritime facility of intermediate size (such as the Tamar rig) is limited (about 30 to 40 crew members).

6 Yedidia Yaari, "The Naval Arm 2000 – Challenge and Response," *Maarachot*, Volume 368. [Hebrew]

7 For example, the attack on the Israeli naval vessel Hanit by an Iranian-made coast-to-sea missile at the beginning of the Second Lebanon War in July 2006.

a focus of confrontation between countries in the region, including Israel, Lebanon and Turkey.

Deterrence – In view of the lack of regional stability, deterrence is a primary factor in creating restraint in the Middle East. An attack on a maritime facility will constitute a serious attack on Israel's deterrent ability and will be classified as a legitimate attack on civilian infrastructure. Such an attack is probably liable to be considered legitimate also by the opinion of the international community.

The regional dimension – In recent years, we have been witnessed to an intensifying and uncompromising confrontation between Turkey and Greece on the question of the boundary between their economic waters. This followed a unilateral and blunt declaration by Turkey and Libya that is not within the lines of international law.⁸

The demarcation of a boundary for economic waters in the Mediterranean has regional, political and diplomatic significance and disagreement in this context can drag the region into a conflict. The phenomenon of cross-alliances between the region's states and the limited involvement of the international community and the US are liable to undermine the already frail situation of regional stability and in the end could bring about a regional war.

Israel needs to declare an economic zone that rests on the legitimacy of international law and is supported by regional economic interests. This will be accomplished by the legislating of the 'Law of Maritime Zones' and the demarcation of its maritime boundaries with its neighbors.

In this context, and in the spirit of the normalization agreements that have emerged in recent months with some of the Persian Gulf states, (Abraham Accords), it will be necessary to more energetically promote cooperation with the "dialogue" states in the Eastern Mediterranean: Israel, Egypt, Greece and Cyprus. What is needed is cooperation based on dialogue and an overlapping of civilian-diplomatic interests in areas such as energy. This is a discourse with the most profound potential and significance. In our view, academic bodies can play a role in promoting initial contact, based on research activity and identical or intersecting interests.

The growing Chinese influence in the region, alongside Iranian, Russian and Turkish attempts to establish a stronghold in the Eastern Mediterranean, require constant assessment of the situation with respect to the effect of these efforts on the maritime domain – Israel's western border. In addition, the assessment is necessary

⁸ An agreement with the Government of National Accord (GNA) signed in November 2019.

in order to monitor the military forces of these countries and their operational policy and routine, alongside unexpected acts that undermine regional stability or that endanger one or more of Israel's interests.

In concluding this section, the sea as Israel's strategic depth is to a large extent an asset in flux. The eastern basin of the Mediterranean has been transformed from an unthreatened zone of strategic depth to part of the threatened and sensitive strategic home front, which is liable to become a direct source of confrontation. This is a domain subject to continual threat which requires that Israel significantly strengthen its control over it.

The security doctrine with respect to the economic waters and the maritime facilities

The military response to the threat in the maritime domain is based on four main principles:

1. The definition of threats and reference scenarios.
2. The buildup of power.
3. The use of power.
4. Command and control.

In addition, it is possible to divide up the security doctrine according to two levels: the tactical level which relates to a limited area in the vicinity of a single facility and the strategic discussion on the level of the maritime domain as a whole.

Defining the threats and the reference scenarios⁹

In order to define the reference scenarios, it is necessary to first analyze the existing security threat. Clearly, a detailed intelligence evaluation is needed, as well as a continuous analysis of the capabilities of rivals and regional players and the trends in their buildup of power. Even so, it is possible to analyze the spectrum of threats (kinetic and otherwise) to the offshore facilities, which include the following, among others:

A surface threat from the sea: Fire from a ship, an intentional ramming by a ship, a suicide attack, a hostile takeover.

9 This section deals primarily with military threats; however, there are also scenarios that include accidents and safety events. For further details, see the section below on rescue and repair capabilities.

An underwater threat: Sabotage by divers, torpedoes fired from a submarine.

Aerial threat: Suicide attack, drones, aerial attack by a conventional air force.

Missile and rocket threat: Including fire from precision or statistical weapons (which can be executed from the land, the sea or even the air).

Cybernetic threat: An attack or disruption of the rig and infrastructure by means of a cyber attack.

Guiding principles in the protection of the overall maritime domain

Intelligence, deterrence and interdiction: Intelligence-gathering capabilities will be based on ships and aerial vehicles out at sea, as well as on coastal facilities. The use of forces in the economic waters will support a response and interdiction capability even without an intelligence warning.

Deterrence is based on the use of land forces, naval forces (both above surface and below surface) and aerial forces in the Exclusive Economic Zone (EEZ) and beyond it by means of routine patrols for the purpose of demonstrating a presence and projecting power, gathering of intelligence, constructing a maritime picture and protecting the maritime domain and the assets located in it.

Search, detection and identification: The navy will employ special advanced systems for the purpose of detecting, identifying and following targets on the surface (ships), submarines (anti-submarine capability) and also the various aerial targets (planes, drones, armaments). This activity will be managed by a maritime command center at the naval headquarters and will be based on the navy's command and control infrastructures (satellite communication networks, full connectedness, sharing of information and work on a network).

Attack and interception: Naval forces will carry advanced detection and identification systems. The forces will have attack and interception capabilities to be used against targets in the air, on the surface and below surface. Command and control abilities are based on broadband communication and connectedness with detection and warning systems on land that will enable the identification of a threat and a rapid response to intercept it or alternatively to severely disrupt it. Already today, the "naval dome" system makes it possible to intercept aerial threats from the deck of the Sa'ar 5 class ships. This capability is likely to be strengthened by the ability to intercept missiles and/or rockets possessed by the 'Hamagen' ships (Sa'ar 6 class) which are currently under construction in Germany. This capability will be based

on various defense envelopes that include means for aerial interception, electronic warfare systems, etc.

Rescue and repair: The forces operating in the area need to have rescue and repair abilities in order to provide a response during an emergency, in the case of accidents and in safety events, such as a fire at the offshore facility or an environmental disaster.

Availability: The forces operating in the area need to maintain a high level of operational readiness and an ability to provide a rapid response to developing crisis situations. Their vessels need to have the ability to remain at sea for a long period and under constraints of weather, supplies, etc.

The rules of engagement

A policy will be decided upon for the use of force in normal times and in an emergency, according to the development of a military doctrine that will determine procedures, inter-corps coordination, means of control etc.

Buildup of capabilities

Already at this point in time, the navy is in the process of a broad buildup of capabilities that includes the construction of surface vessels and the addition of a submarines from Germany. The design of the Sa'ar 6 class surface ship was adapted to provide the ability to monitor and comb a broad expanse of sea. The naval forces, the types of platforms and other components have been adapted in order to deal with the reference scenarios described above, with the goal of protecting the national assets that are dispersed geographically throughout Israel's economic waters.

The achievement of maritime control in normal times and naval superiority in times of conflict is a necessary condition for the navy being able to defend Israel's economic waters. Therefore, the preference in the buildup of the navy's strength should be given to the forces that are essential for the achievement and maintenance of naval superiority.¹⁰ This is in addition to the surface forces, including the buildup of the navy, the production and acquisition of advanced aerial patrol platforms and the expansion of the coastal detection network, with the goal of controlling the "surface" and also selected underwater zones.

10 Shlomo Ariel, "The Sea as Strategic Depth" *Maarachot*: Ministry of Defense, volume 388. [Hebrew]

Surface vessels will be the main force operating to protect the economic waters. They will manage the control of the maritime space and will constitute the main firepower in meeting the aforementioned threats. Until a few years ago, the navy only operated outside of its territorial waters as part of its operational activity or to secure essential shipping lines during a war. Already at this point in time, the navy is required to maintain continual control of Israel's economic waters, including the shipping routes leading to and from the ports of Israel. To this end, it operates an integrated configuration of surface vessels, aerial patrol forces and submarines, alongside technological means of detection, identification and classification of the various threats. Following are the main systems required to carry out these missions:

Surface platforms: Ships comprise the basic strength of the navy. This platform enjoys various capabilities that are derived from its main characteristics, such as size, the types of weaponry on its deck, its ability to carry a helicopter, its sailing range, its maneuvering ability, its ability to remain at sea for long periods, etc.

The ships that will be required to provide an effective defensive response must have a number of capabilities: detection capabilities that include a multi-purpose radar coverage of the sea and the air for a radius of about 200 nautical miles; a system on the ship for submarine detection; and an ability to identify targets by means of aerial vehicles (helicopter / unmanned helicopter / a patrol plane).

The ships will be armed with defensive systems for the protection of the ship itself and also offensive weaponry that include sea-to-sea missiles, a sea-to-air missile system and a torpedo weapon system against submarines.

The ships will have the ability to remain at sea for a long period and will have high maneuvering ability. In order to ensure all of the aforementioned capabilities, the ships will need to be large, it will need to have a large displacement and a high degree of stability and it should have a weight of between 2500 and 3000 tons.¹¹ This is indeed the size of the ship that the navy has chosen. Four ships of this type are currently being built at the Arge¹² shipyards in Kiel, Germany. This ship will serve as the forward point in the defense of Israel's EEZ and will have capabilities to monitor a vast sea and air expanse, alongside fire capabilities. The ship's capabilities will facilitate full maritime and aerial control and monitoring, including the operation of various aerial systems, such as a sea helicopter that will take off from the ship's deck.

11 Yedidia Yaari, "Large ships for a large problem", *Maarhot*: Ministry of Defense, Volume 419, 2019. [Hebrew]

12 An organizational framework established for cooperation between the German TKMS and GNYK shipyards.

It will be able to stay in the air for an extended period and will provide improved tactical capabilities for constructing a the "combat picture", as well as having warfare capabilities. The activity of the ships will be reinforced and accompanied by drones with autonomous capability, which will be controlled from the coast or from the sea and will be equipped with advanced systems for constructing the "combat picture" – detection, identification and tracking. The aircraft will allow for extended missions, full presence under almost any weather conditions and a large operating range. This buildup of power will boost the navy's current strength and will reinforce its existing capabilities, while facilitating a decisive role for the navy also in supporting the army and the land combat in the future.



Figure 1: Israeli Navy Ship INS MAGEN docks at the shipyard in Germany, November 2020, (IDF spokesman)

Submarines and underwater vessels: The submarine is already an important part of the maritime arena. Its operational abilities, which are directed toward its offensive capability, can be exploited for the protection of the economic waters. The ability to operate clandestinely and its acoustic detection capability constitute a major advantage in maritime warfare. These characteristics can serve as deadly weapons against an underwater threat and in particular against enemy submarines. A submarine can be used as part of an ambush in areas where the enemy is expected to operate.

The employment of a submarine in the defensive operations of the Israeli navy will be translated into deterrent ability. Also, in this case, the inventory of submarines should be a dominant component in the ability to manage optimal maritime control in the economic waters, which will strengthen Israel's deterrence.

Fast-moving boats for interception and attack; surface vessels: The abilities of the task force will be complemented by small and speed craft whose mission will be interception and attack of threatening targets. These vessels, as in the case of patrol vessels currently in use along the coast, will be characterized by speed of response, firepower, high speed and a small and streamlined crew.

Vessels to provide techno-logistical service and response, rescue and firefighting ability: There is a need for ships that will technologically and logistically support the various systems that operate in the maritime space, such as providing fuel, water, food and technical support (repair and spare parts). In addition, these ships will provide a first response to an emergency such as a fire on the production facility, a serious accident or an environmental event (see below for details on the management of a safety event).

Use of Force

The change that has occurred in the geographic domain and the strategic threat (from the sea or the air) to the EEZ and the facilities located in it creates the need for a response that will ensure the security of the economic waters and thereby control of the maritime space and will deny freedom of action to an enemy navy or a terrorist group.

In an emergency, the navy will need to ensure maritime superiority, similar to the air superiority enjoyed by the air force. To this end, the navy is seeking to achieve early detection of an enemy in wartime and the ability to destroy his forces as quickly as possible. However, in order to protect Israel's economic waters in peacetime, when there are enemy forces or civilians located in the theater, and when there is also commercial traffic through the economic waters, the navy must maintain patrols and a deployment that will itself enable the interception and destruction of any enemy force that is detected.

The use of the naval forces will, as mentioned, achieve control over the economic waters and provide the ability to track all maritime activity in the arena. The use of naval forces in the domain will be on a continuous and routine basis and will provide an immediate response to the various threats. In an emergency, the deployment will be reinforced and there will be continual patrols near essential facilities, according to the reference scenario. Naval forces will have support from the coastal units and the aerial patrol operations. These will create an intelligence picture in the maritime space – layer by layer.

Deployed on the facilities themselves will be a security force with defensive capabilities and the ability to fight independently against an attack of small craft, takeover attempts and divers who threaten the facility. The tactical response will provide protection in the immediate vicinity of the facility. This will be a military/civil force that will be responsible for protecting the facility against direct focused attack, whether by terrorists, pirates or some other groups. The force will be located on the rig and will be equipped with electronic and optical detection systems that will monitor the approach of various vessels that might represent a danger to the facility. The force will be independent and will operate under the command and professional direction of the navy.

The intelligence picture and the maritime picture

Maritime control is a military-professional concept which expresses the ability to monitor a defined maritime space on a permanent and continuous basis. This is based on "constructing an intelligence picture" whose output makes it possible to identify, supervise and control all of the activity in the maritime arena on a continuous basis.

There are numerous vessels operating in the sea simultaneously: commercial ships, passenger ships, fishing boats, research vessels, yachts and also warships of the various navies. In the aerial space, there are civilian and military aircraft and under the surface there are submarines. The ability to create Maritime Domain Awareness that includes an intelligence picture is the ability to recognize and identify the vessels operating in the maritime domain and to categorize them accordingly, with the goal of identifying unusual / enemy / offensive activity. Activity of this type requires continual monitoring the defined arena of activity, intelligence coverage capabilities and the ability to monitor and analyze the maritime arena in real time. The control of the maritime domain will prevent a tactical threat to the offshore energy facilities, will deny freedom of action to terrorist groups, and will track the navies of Israel's enemies in the EEZ. This activity requires advanced abilities for constructing a "status report" based on the abilities of the naval forces combined with aerial patrols. Such control can be accomplished by a deployment of forces in the maritime domain that will facilitate the interception and destruction of a detected threat.

In the context of constructing an intelligence picture, it is also worth mentioning the satellite segment. In recent decades, there has been significant progress in the use of satellites to monitor large areas. Advanced technologies that have matured during the past decade include satellite systems with various capabilities that make it possible to upgrade the process for constructing an intelligence picture, as described above.

Examples include Synthetic Aperture Radar (SAR) and the Automatic Identification System (AIS).

Command and Control

Command and control of the maritime domain, which includes economic waters, needs to be technology-based and should include capabilities to monitor the sea surface, the air (radar and satellite) and the sea depths (systems for detecting submarines and/or divers). In the past, the navy has used radar and coastal facilities to monitor the sea surface. The new geographical areas that the navy needs to monitor have been expanded to include Israel's economic waters.

A new zone has been created which will be monitored by the navy, supported by its use of aerial patrols. In this zone, which will be known as the maritime warning zone of the economic waters, intelligence will be monitored and assessed, including a continual tracking of military and civilian activity, whether in the sea or in the air.

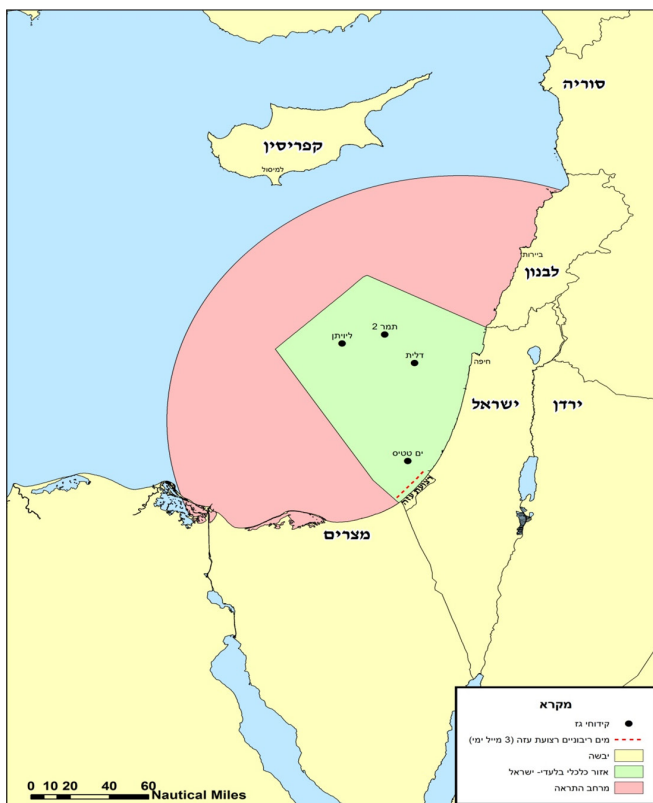


Figure 2: Map of the economic waters and the maritime warning zone

The new zone is broader than the economic waters and will also cover areas that are not part of Israel's EEZ. Within the EEZ, the areas around the facilities that have been designated according to international law are clear of any target or movement (no-sail zones).

The navy has established command and control positions, as well as operational and other procedures, that enable the inclusion of government bodies with an important role in protecting and monitoring the economic waters. It is important to establish a hierarchy and to define responsibilities together with the government ministries that have an interest in this domain, such as the Ministry for the Protection of the Environment, the Ministry of Agriculture, the Ministry of Energy, the Ministry of Transportation, the Ministry of Justice and others. The division of responsibility and authority should be anchored in legislation which will formalize the framework of cooperation between the IDF and the rest of the government bodies. Such cooperation is important both in normal times and during an emergency, as well as in the case of an accident or safety event that occurs at the facilities (such as the responsibility for rescue forces).

Currently the 'Yam Thetis', 'Tamar' and 'Leviathan' natural gas rigs (and soon also 'Karish') are under a civilian security umbrella that operates in cooperation with the navy, as part of Government Decision 85/b. This decision, which was made in 2003, instructs the IDF to include the 'Yam Thetis' facility within its routine security activities. The decision also specifies that the Prime Minister will appoint the organization that is responsible for the physical security of the facilities. Currently, the IDF is responsible for maintaining its role as the controlling military force in the maritime domain. To this end, the navy will designate the essential facilities and infrastructures within the areas of its security responsibility. In this capacity, the navy will constitute the professional authority in the protection of the facilities and infrastructures against the threats presented in the reference scenarios. The professional instruction of the security of the facility itself is also the responsibility of the navy. Other responsibilities in the economic waters include: safety, quality of the environment, cyber, etc. which are necessary for the routine operation of the facility and its infrastructure according to its purpose and subject to the standards that apply to its operation. The role of the National Cyber Security Authority in providing professional guidance and in the analysis of the cyber threat is essential given the development of these threats to similar facilities and infrastructures around the world.

The activity of the naval forces, the various intelligence -gathering systems and the control and information systems will provide the various government bodies

with the means to enforce Israel's authority in the EEZ. This will be instrumental in strengthening the sovereignty and national resilience of the State of Israel and particularly in the maritime domain.

Conclusion

The navy and the IDF will in the next few years complete a broad strategic acquisition program that is intended to provide a response to the challenge of protecting Israel's strategic assets near the coast and out at sea.

This program will not be complete without a number of additional and important processes, including the achievement of agreement on maritime borders, the legislating of the Law of Maritime Zones, the strengthening of the alliances and relationships with the other Eastern Mediterranean states and the creation of an organized and professional mechanism that will manage the protection of the various maritime facilities in Israel's economic waters.

The Egyptian Sea Mining Surprise during the Yom Kippur War (October War 1973)

Shlomo Guetta

preface

in the context of the wars between Israel and the Arab armies, offensive sea mines were first used during the Yom Kippur War (1973). At that time, the Egyptian navy made use of this weapon by mining the important chokepoint in the Straits of Jubal at the southern opening of the Gulf of Suez.

The decision to use this weapon in that region, which is an international shipping route, was ideal from the Egyptian perspective who did not want to violate international law. In this context, it is worthwhile quoting Admiral Fouad Mohamed Abou Zikry in a lecture he gave in 1975 in Cairo on the second anniversary of the Yom Kippur War: "The regions near to the enemy defenses and which can be exploited to intercept sea routes such as the entrance of the Gulf of Suez are suitable for the use of sea mines which are a dangerous and effective weapon particularly if accurately used against an enemy that does not have the means of disposing of them."¹

The free traffic of ships to and from the Gulf of Suez was essential to Israel for both the passage of military vessels and the transport of crude oil. Due to the blockage of the Suez Canal at the time, the Gulf itself was a kind of internal sea that served only Israel and Egypt (namely, without a threat to a third party or a neutral party). This characterization was evident to the planners in the Egyptian navy and served as a convenient opportunity to make the first use of offensive sea mines, which were highly significant on the naval battlefield and which had a large number of advantages:

- The ability to conceal the existence of the mines and to cause damage to vessels unexpectedly.²

1 From a lecture by the commander of the Egyptian navy, page 113 in the symposium's collection of lectures.

<https://archive.kippur-center.org/arab-sources/lecture-admiral-abu-zikri-1975-new-eng.pdf>

2 Indeed, Israel did not know about the mining activity and was taken completely by surprise by its existence.

- Sea mines are placed where enemy ships are used to passing though or must pass through, such as the main shipping routes, rivers³ or straits, in a way that disrupts the enemy's shipping traffic.
- In addition to the damage caused, the mines also have an important psychological effect: one mine located on a civilian shipping route is liable to halt traffic until the area has been swept and the mines removed.⁴
- Sea mines are a very efficient weapon in terms of cost-benefit and thus are particularly attractive to the weaker side in a conflict. The cost of producing and laying a sea mine is negligible in comparison to the cost of removing it and disarming it.
- The time needed to neutralize and dispose of a field of sea mines can be 200-fold the time needed to lay it.⁵

It can be assumed that the Egyptian strategy to use offensive mines was primarily based on naval warfare doctrine developed during the Second World War, as well as the inspiration of Soviet doctrine and the massive supply of Soviet weapons provided to Egypt, which included a variety of sea mines produced in the Eastern Bloc.

The goal of this chapter is to shed light on the actions of the Egyptians, which achieved complete surprise, as part of their naval strategy. This pattern is liable to be repeated by other enemies in future warfare scenarios, since offensive sea mines are intended to achieve naval control of the enemy's ports and at essential chokepoints.

Introduction

On the morning of October 26, 1973, about two days after the ceasefire that ended the Yom Kippur War went into effect, two large explosions broke the quiet of the peaceful waters in the southern Gulf of Suez. These occurred under the hull of an oil tanker named 'Siris', which was sailing through the 'Straits of Jubal' on the eastern side of the strait, on its way from the port of Eilat, with the goal of filling up with oil from Israel's oil fields on the eastern side of the Gulf of Suez.

The Siris was a tanker of about 50 thousand tons in Israel's service and together with other tankers operated during the period that preceded the war on the route

- 3 In the years prior to the Yom Kippur War, the Gulf of Suez had the characteristics of an internal sea that served the two enemy nations – Israel and Egypt.
- 4 Israel was lucky that it was able to quickly prepare an alternative route near the Straits of Jubal.
- 5 To illustrate, the mining of the Straits of Jubal took only a few hours on each of 3 or 4 nights during the war. In contrast, the clearing of the mine field by the Soviet navy took a number of months during the second half of 1974.

between the Gulf of Suez and the Gulf of Eilat. It transported crude oil from the area of Abu Rodes/Abu Zanima to the oil terminal belonging to the Europe Asia Pipeline Company (AEPC) in Eilat.

The huge explosions below the tanker were caused by two powerful mines containing between 350 and 500 kg of explosive material (depending on the type of mine). The tanker sustained heavy damage and it was necessary to evacuate the crew by means of air force helicopters. As a result of the explosions, 27 crew members were injured, three of them seriously. Following the rescue, the tanker sank a short time later into the waters of the Straits of Jubal.



Figure 1: The sinking Siris tanker



Figure 2: The evacuation of the crew of the Siris by Israeli air force helicopters



Figure 3 and 4: Closure – After the war, Dan Nakdimon, the captain of the Siris, sailed through the Suez Canal, which was opened to ships in June 1975. In one of the voyages, he met an Egyptian pilot in the canal who was wearing a war decoration on his jacket. Nakdimon asked him what it is for and he answered that he had been with the forces that mined the canal, among other locations, and had caused the sinking of the Israeli tanker in the Straits of Jubal. For that, he was invited to receive the decoration from President Sadat. Of course this was a surprising and emotional encounter between the "victim" of the mines and one of their layers. The two shaking hands. (Photos generously provided by Captain Dan Nakdimon).

This event was the first indication for Israel, that the Egyptian navy had mined the Straits of Jubal at the entrance to the Gulf of Suez at the beginning of the war.

The laying of sea mines by the Egyptian navy was a complete surprise to the Israeli navy and its intelligence department.⁶ This type of operation was not foreseen, unlike most of the other tactics used by the Egyptian navy during the war and which naval intelligence had correctly predicted. The surprise was so complete that during the day following the explosion there were still doubts as to whether it had been caused by a sea mine.⁷

The Straits of Jubal are an international sea passage, which is about 7 miles (about 13 km) wide and which have a relatively shallow depth (between 30 and 80 meters). East of the Straits of Jubal and near the western shore of the Sinai Peninsula, is an internal passage called the 'Milan Passage', which is about 2 miles (about 3.7 km) wide and about 14 meters deep at its center.

Although the mine incident was a surprise, within a short time the Israel navy responded by issuing special procedures and an emergency format of operations, which were meant to facilitate and improve maritime traffic and navigation in the Milan internal passage, so that large ships like oil tankers would be able to sail through it. In this way, the mine field that had been laid in the Straits of Jubal was bypassed and the transport of crude oil from the oil fields in the Gulf of Suez to the Port of Eilat was renewed.⁸

The Egyptians knew that Israel had no capability to dispose of sea mines; however, they quickly realized that traffic was flowing through the Milan Passage and starting at the end of October, they tried unsuccessfully to extend the mine field to include the Milan Passage.

6 In an article written after the war by Colonel Luntz (later a brigadier general), the head of the Naval Intelligence Department, he admitted that the sea mining operation by the Egyptian navy was a surprise. Article in the book "War Today", *Maarachot*, p. 395. See also the book "A Furrow in the Sea" by General Benny Telem who was commander of the navy during the Yom Kippur War, page 221.

7 In the morning following the sinking of the tanker, Captain Nakdimon was brought for a debriefing to a forum of senior officer at naval headquarters. The forum was led by General Telem, the commander of the navy. According to Nakdimon's testimony, there were doubts among the forum that indeed this was a case of sea mines. However, he managed to persuade General Telem to halt the voyage of the *Petria*, the sister tanker, which was at that time about to cross the Straits of Jubal on its way to the Gulf of Suez. <https://bit.ly/396VJGe>

8 For further discussion of the emergency format put in place by the Israeli navy in the Red Sea theater, see "Voyages of my Life", by Zeev Almog, Volume II, pp. 900–901.

Two weeks after the sinking of the *Siris*, on November 10th, 1973, another tanker, named the '*Sirenia*' which was under Israeli service, was damaged southwest of 'el-Tor' while on its way with a load of oil from the Gulf of Suez to the Port of Eilat. The tanker was only slightly damaged and after an inspection of the damage and a short delay in the el Tor marina it continued on its way to the Port of Eilat.⁹

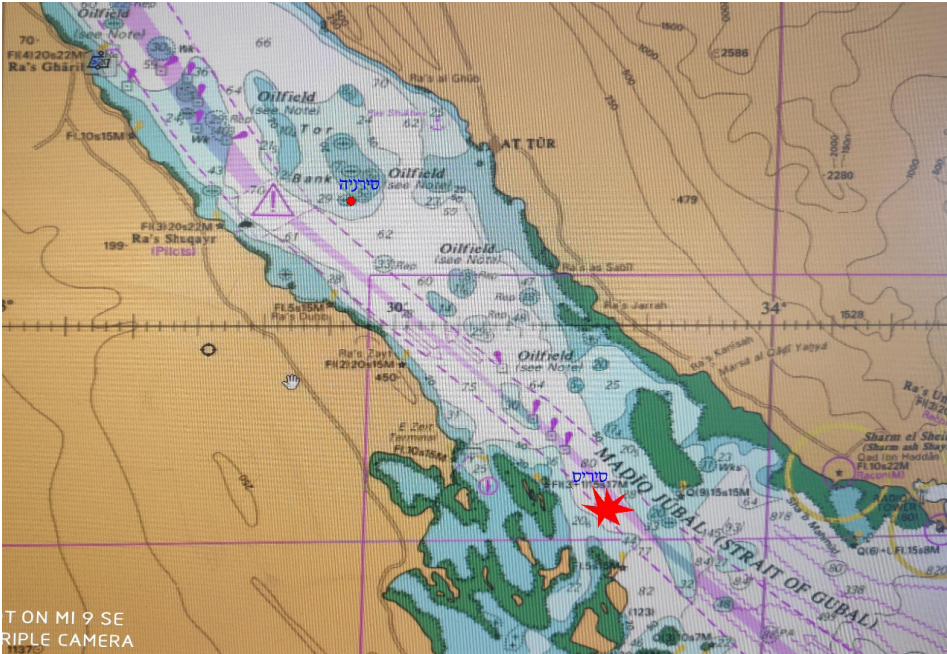


Figure 4: Schematic description of the location of the mine explosions in the two incidents (one in the Straits of Jubal and the other southwest of the el Tor marina)

The intention and the plan

Based on an analysis of the available information, some of it retrospective, it appears that the Egyptian navy in the Red Sea theater had been planning to lay sea mines in the southern Gulf of Suez for a long time. From the Egyptian navy's perspective, the mission was operationally and tactically well within their capabilities, considering the size of its force and the weapons it had possessed since the 1960s, including in the Red Sea theater.

From the perspective of the Chief of Staff and the senior political echelons in Egypt, the mission was strategically important and was assigned to the Egyptian navy. This

9 The testimony of Captain Yaakov Herzog. <https://bit.ly/2Klfakb>

mission complemented the naval blockade in the central and southern Red Sea and therefore was important in carrying out the strategy of the senior political and military echelons.¹⁰

Since the Six Day War (1967), Israel had been in control of the "oil corridor" on the east bank of the Gulf of Suez, in an area known as 'Ras Sedr' and 'Abu Rodes'. To the chagrin of the Egyptians, Israel was producing crude oil there and transporting it in tankers to the oil terminal in Eilat.

This mission, like others assigned to the Egyptian navy prior to the war, was planned in the naval headquarter. The planning was led by Fouad Mohamed Abou Zikry, the commander of the navy, and his head of operations, Ashraf Raafat. The latter was the commander of the Red Sea theater in the 1960s and he was familiar with the area. He formulated an operational plan that included both a naval blockade in the central and southern Red Sea and the mining of the Straits of Jubal.¹¹

As mentioned, the Egyptians knew that Israel had no capability of neutralizing or disposing of sea mines. The Egyptian navy on the other hand had been equipped since the 1960s with a variety of sea mines produced in the Eastern Bloc: seabed mines and anchored mines, induction mines (with acoustic/magnetic mechanisms) and contact mines. In addition, Egypt had a variety of minelayers and minesweepers, which they had used extensively in training for the laying and removal of mines. Therefore, it was only logical for the Egyptians to make use of offensive sea mines for the first time in a war against Israel.

With respect to choosing the location for the mines, in retrospect it can be said that the choice of the southern Gulf of Suez was indeed the result of sensible operational considerations from the perspective of the Egyptians. Although the Straits of Jubal are, as mentioned, an international waterway, in those days, when the Suez Canal was blocked to traffic of any kind, the Gulf of Suez was essentially an internal sea used only by Israel and Egypt, without any fear that mines in the Straits of Jubal would harm ships other than those in the service of Israel or of Egypt itself.¹² This is

10 In this context, see the book by el Gamasy, who was the head of operations in the Egyptian army prior to and during the war; page 188 (translated into Hebrew).

11 In an interview with Ashraf Raafat in October 2012, he explained the considerations that guided him in planning the naval blockade of the Red Sea. For readers of Arabic. <https://www.elbalad.news/287297>.

12 In reality, and despite the tracking and supervision by the Egyptians in the case of ships in their service, a Greek tanker named the Maripela was damaged by a sea mine in that same minefield. Zeev Almagor, *My Life's Voyages*, p. 900.

in contrast to the Straits of Tiran, which were also used by Jordan on the way to and from the Port of Aqaba, and the Bab el Mandeb Strait, which was an international waterway used by many countries and first and foremost the countries on both sides of the Red Sea and many third-party countries, including navies of the superpowers.

Another advantage of mining this area is that the waters of the Gulf of Suez, including the Straits of Jubal, are shallow (30 to 80 meters) relative to the deep waters of the Straits of Tiran and the Gulf of Aqaba. This had operational significance since it was possible to also make use of KMD-500 Soviet-made seabed mines which the Egyptians possessed, which had a maximal depth of 55 meters, and also the KB-KRAB anchored mines whose maximal depth is about 300 meters.

From an operational standpoint, it is clear that the Egyptian planner, Ashraf Raafat, the head of naval operations, and Commander Fouad Abou Zikry, viewed sea mines as a complementary component to the naval blockade in the central and southern Red Sea. From their perspective, the mines were meant to prevent the transport of crude oil from the "oil corridor" in the Gulf of Suez to Eilat, while the naval blockade in the southern and central Red Sea (using submarines and destroyers) was meant to block the shipping of crude oil to Eilat from the Persian Gulf.

In an article in 1998, the head of operations of the Egyptian navy wrote that although the goal of the sea mines was primarily to disrupt the transport of oil from the Gulf of Suez to the Gulf of Eilat, it appears that in retrospect it added another important argument, in his opinion, in support of the mission, namely that it would prevent the Israeli navy from carrying out tactical landings, as part of a limited operation, on the western side of the Gulf of Suez, as indeed occurred in Operation Raviv (September 1969 during the War of Attrition). Therefore, according to him, "It was decided mainly to depend on sea mines to block the entrance to the Gulf of Suez."¹³

Preparations for the mining laying operation

Once the decision had been made at naval headquarter to lay the mines and the planning had been completed, the operation was assigned to the Red Sea headquarters at 'Safaga' and the forward 'Hurghada' base. It is unclear when exactly the preparations for the mission began, but it can be assumed that it was during the first quarter of 1973.

It is worth mentioning that during the period prior to the war, the Egyptians had two types of vessels in the Red Sea theater that had the technical ability to lay sea

13 Article by Ashraf Raafat in 1998: p. 80, at the following site. <https://bit.ly/395EViT>

mines. One of them was the T-43 minelayer (named 'el Dakhilya') and a number of P-183 torpedo boats. The minelayer could carry 20 KB-class anchored mines and the torpedo boats could carry about 6 KMD-class mines.

During the preparation stage, preliminary patrols were carried out, apparently in order to get to know the area and to practice the operation in the vicinity of the Jubal Islands, an area that is not easy to navigate. It appears that during the period prior to the war, the Egyptian naval vessels carried out at least three exercises/patrols of an operational nature in the southern sector of the Straits of Jubal (in the 'Shadwan Passage' and the 'Tawila Passage'). It certainly appears, and perhaps only in retrospect, that the patrols and activity were dry runs for the minelaying mission (in order to become familiar with the area and as training for the ships' commanders and crew).

Participating in this preliminary activity was a T-43 minelayer and a pair of P-183 torpedo boats accompanied by one or two Komar-class missile boats. As mentioned, at least three exercises/patrols were carried out – the first in April 1973, the second in July 1973 and the last on the night of October 4–5 1973, namely a day and a half prior to the outbreak of fighting!¹⁴

Another step taken prior to the outbreak of fighting occurred on the evening of the 4th of October, when the Egyptians started to reduce the presence of commercial ships operating in their service in the Gulf of Suez. Their activity in the Gulf was permitted only with the approval of naval headquarters starting from sunrise on October 5th, 1973.¹⁵

Apart from the activity to become familiar with the area and the operational dry runs, there was intensive logistic activity in the summer months of 1973 in order to transport sea missiles and sea mines from the navy's warehouses in Alexandria by truck to Safanga (by way of Wadi Kina). Of course, in retrospect, it can be said that this massive transfer was intended to, among other things, ensure that the southern theater would have enough sea mines in order to carry out its minelaying mission.

14 Bar Yosef, *The Watchman that Fell Asleep*, p. 322.

15 Ibid. In reality, it appears that a number of days after the start of the war the Egyptians successfully evacuated ships in their service from the Gulf of Suez. See footnote 5 above regarding the damage to the Maripela tanker, apparently done by a sea mine while sailing southward through the Straits of Jubal.

Execution of the minelaying mission

On the first night of the war (between the 6th and 7th of October 1973), preparations were made in the port of Hurghada by a pair of Komar-class missile boats, a pair of P-183 torpedo boats and a T-43 minelayer, which as mentioned had participated in the action carried out on the night between the 4th and 5th of October.

It is believed that on that night the missile boats fired a round of sea-to-sea missiles toward 'Ras Mohamed', apparently as a distraction intended to prevent any interference with the activity of the minelayer and the pair of torpedo boats that were laying anchored KA-KRAB-class mines in the Straits of Jubal (laid by the minelayer) and KMD-500 bottom mines (laid by the torpedo boats).

It is worth mentioning that on that night, the Egyptian air force launched 'Kelet' air-to-ground missiles which destroyed a coastal aerial radar station on 'Mount Hatsafra' near the Port of 'Sharm el Sheikh'. It is possible that the bombing was also meant to disrupt and neutralize the radar ability to detect ship traffic from the Port of Hurghada to the Straits of Jubal sector.¹⁶

In a number of testimonies by senior officers of the Egyptian navy, it is claimed that the mining began a day or two before the war broke out.¹⁷ This seems unusual since laying sea mines with an induction mechanism is irreversible and is evidence of an act of war committed even before the war actually broke out. This issue is not completely clear. Although on the night of October 4–5th, there was unusual activity in the vicinity of the Strait of Jubal islands and it is possible that this activity, which occurred very close to the outbreak of the war, was perceived by the force as an operational activity to actually lay mines, rather than just as a practice run. It is also possible that the mining itself was carried out for the first time on the night between October 6–7, 1973.

Alleged minelaying activity in the Straits of Jubal

Apart from the first day of the war, there were additional actions to complete the sea minefield in the Straits of Jubal on other nights during the course of the war. The commander of the Egyptian navy in his lecture on the war at a symposium held in Cairo in October 1975 mentioned that he managed to carry out the minelaying

16 This possibility is only presented as a hypothesis and has no support at this stage.

17 Egyptian propaganda file, minute 12:10. <https://www.youtube.com/watch?v=P169--6AXAU> and also the testimony provided in October of 2018 by the commander of an Egyptian torpedo boat, which according to him was involved in the mining operation. For readers of Arabic, following is the link to his testimony. <https://bit.ly/2IOBr9V>

mission without any interference from the Israeli navy, except an incident of the night of the 19-20th of October when they were prevented from carrying out a re-mining mission,¹⁸ implying that this was because of the activity of the Israeli navy. It unclears which Israeli activity he is referring to; perhaps the ambush by a pair of Israeli 'Dabur' class boats that was discovered by them near Shadwan Island.



Figure 5: Stills from an Egyptian navy propaganda film on the Yom Kippur War

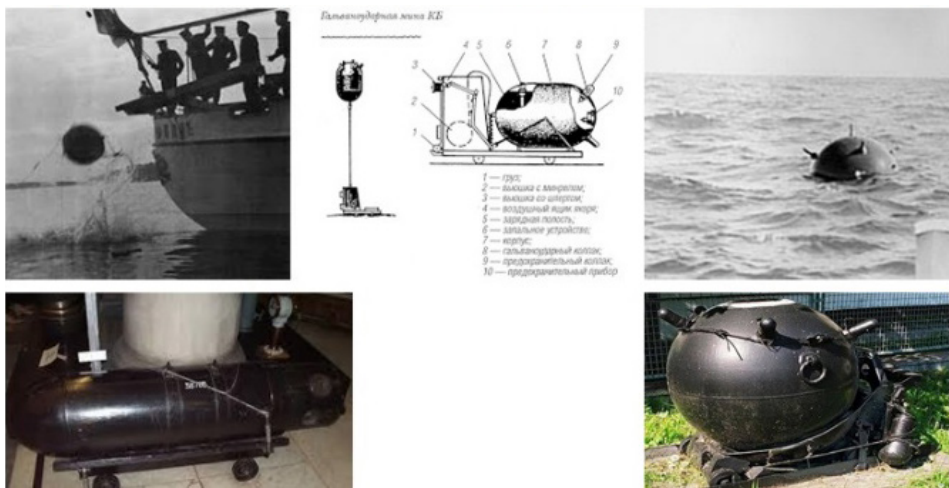


Figure 6: In the center and on the upper left is a KB-series anchored mine; on the lower left is a KMD bottom mine; on the right a M-YAM-type anchored contact mine

According to publications in Russian,¹⁹ whose source is the minesweeping activity carried out by the Soviet naval squadron after the war during the second half of 1974, it appears that in total the Egyptians laid of 72 mines in 5 rows, of which about

18 From a lecture by the Egyptian naval commander. <https://archive.kippur-center.org/arab-sources/lecture-admiral-abu-zikri-1975-new-eng.pdf>. p. 116.

19 Alex Rozin. <http://alerozin.narod.ru/Suez.htm>

40 were AMD-2-500-class seabed mines and about 30 were KRAB-KB-class anchored mines. These are induction mines with an acoustic/magnetic mechanism.



Figure 7: Soviet-made T-43-model minelayer in use by the Egyptian navy (one like "el Dakhiliya" was ready in Hurghada/Safaga)

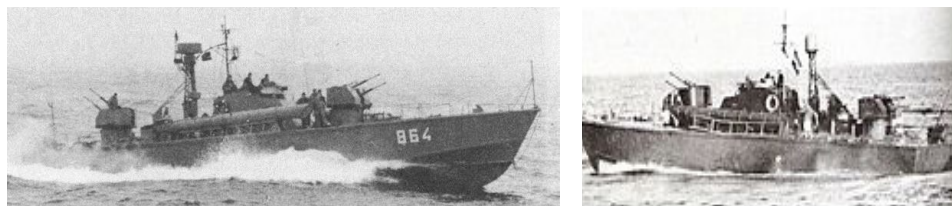


Figure 8: A P-183 torpedo boat that took part in the minelaying mission

That same Russian publication mentions the interesting fact that part of the minelaying activity was carried out by mobilized fishing boats. This possibility cannot be ruled out; however, it is likely that if there was assistance from mobilized fishing boats, then this was for the purpose of laying a sparser mine field southwest of the el Tor harbor, carried out by Egyptian naval commandos.²⁰ One way or another, the Russian document expresses blunt criticism of the quality of the Egyptian documentation and mapping of the rows of mines that were laid. According to the Russians, they did not receive any documents, drawings, plans or maps with the minefields marked on them.

Soviet minesweeping after the war

After the war and the separation-of-forces agreement—that was signed between Israel and Egypt and according to which the IDF was deployed along new lines in the Sinai in March 1974—there arose the urgent need for the Egyptian government to reopen the Suez Canal in order to restore traffic through it, which was so important to the Egyptian economy.

20 To the extent that there was minelaying activity by naval commandos in the el Tor sector, it is likely that these were lighter Soviet- or Polish-made M-YAM-class anchored contact mines

In order to enable the opening of the Canal for secure international shipping, it was necessary to clear the Canal itself of mines, ordinance and various obstacles, as well as clearing the sea mine fields in the southern Gulf of Suez, which were laid during the Yom Kippur War.

Egypt did not have the capability of carrying out this task and therefore it signed agreements with the US, France and Britain for clearing the northern part of the Suez Canal. With respect to the southern Gulf of Suez and particularly the Straits of Jubal, Egypt signed an agreement with the Soviet Union at the end of May 1974, according to which the Soviets would clear this region of the sea mines laid by the Egyptian navy.

In order to carry out this mission, a Soviet naval taskforce was put together that included the 'Leningrad' helicopter carrier, which carried helicopters that had been adapted for mine clearing (Kamov-25 helicopters and a pair of M-8-class helicopters), a destroyer and a tanker, which sailed from the Black sea to the Red Sea in June 1974 by the long way around Africa until arriving at in the area of Hurghada. On the way, they were joined by five minesweepers of the Soviet navy from the Pacific Ocean.

The Soviet taskforce began the mission of mine clearing in August 1974 and it lasted several weeks. Despite specific problems encountered by the Soviet crews with their Egyptian hosts and the Israelis who closely monitored their activity, the mine clearing was accomplished successfully. It included massive helicopter activity which combined mine clearing and exploding of the mines (188 flights which involved 339 flying hours).²¹

It is worth mentioning that during the mission, the Soviets tried to approach the Milan Passage in order to clear it as well, since they claimed that they had been informed by the Egyptians that it had also been mined. Urgent talks were held between Israel's naval command and senior UN officials, in addition to a dialogue on location between the theater's intelligence officer and the Russian commander of one of the minesweepers. The intelligence officer reported to the Russian commander that the Milan Passage is not mined and that the information he was given by the Egyptians is incorrect. Proof of this was the safe flow of traffic through the passage during the preceding months. As a result, the Soviets gave up on the idea of minesweeping in the passage.²²

21 Pesach Malovani, *Red Flag over the Middle East*, pp. 322–3. [Hebrew]

22 Personal testimony of T. who was at that time the naval intelligence officer of the theater.

On the conclusion of the mission, at the end of November 1974, the government of the Soviet Union and the government of Egypt thanked the crews for their efforts. The commander of the Soviet naval task force was invited by President Sadat as his personal guest to the opening ceremony of the Suez Canal in June 1975.²³

Summary and conclusions

The offensive sea mines laid by Egypt in the southern Gulf of Suez during the Yom Kippur War was a complementary component of the naval blockade of the central and southern Red Sea, with the goal of preventing the flow of oil tankers to the Port of Eilat, both from the Persian Gulf and from the "oil corridor" in the Gulf of Suez. In the planning stage, Egypt made sure that both the maritime blockade and the minelaying operation did not violate international law. In their view, these two components were only aimed against Israeli shipping or shipping headed for Israel.

The Egyptians believed—and on this point they were correct—that the Israeli navy at that time did not have a response to the two threats that were emerging in the Red Sea, namely the maritime blockade and the sea mines.

The laying of sea mines was a complete surprise for the Israeli navy, in contrast to the earlier predictions of Israeli Intelligence regarding the intention to deploy a blockade in the Red Sea. It may be that this option was not taken into account since there was a working assumption that the Gulf of Suez and the Straits of Jubal are also used by the Egyptians for military and civilian vessels traveling to and from the Gulf of Suez.

It is beyond the scope of this chapter to deal with another question that is important in its own right: Were the Israeli navy and naval intelligence capable of predicting this operational option? The answer to this question requires an analysis that goes beyond the current study.

In any case, the fact that the planning and the execution of the Egyptian navy was able to carry out the mission in secret, such that the Israeli navy became aware of the sea minefield in the southern Gulf of Suez **only about two days after the ceasefire went into effect** and only as a result of the sinking of the Siris tanker and two weeks later the damage to the Sirena tanker.

Even though the Egyptians succeeded in achieving surprise and they correctly assessed the inability of the Israeli navy to clear sea mines, in the opinion of the author the Egyptian planning was not without flaws. Thus, Israel came up with an

²³ Malovani, p. 323.

immediate response to the threat. Although this was not a technological response in the form of mine-clearing ability, Israel quickly found another solution by preparing an alternative internal passage (the Milan Passage) to accommodate relatively large ships such as tankers. The author believes that if the Egyptians had carried out a hydrographic analysis, they would have understood the feasibility of using the Milan Passage. Therefore, although the mining mission was successful, it was not perfect. After the war, when the Egyptians noticed that an internal passage was being used, they tried to mine it as well, but were unsuccessful.²⁴

With respect to the purpose of the sea mines, a weapon whose first use by the Egyptian navy was during the Yom Kippur War, its main goal from the standpoint of the senior political and military echelons was, on a strategic level, to disrupt the transport of oil from the Egyptian oil fields in the Gulf of Suez to the oil terminal in Eilat.

Nonetheless, it is possible, as claimed (in retrospect) by the head of naval operations of the Egyptian navy, that on the operational level another (and secondary) goal of the sea mines was to prevent an Israeli landing on the western side of the Gulf of Suez, based on a lesson learned from the success of the Israeli armored raid during the War of Attrition in September 1969. At least from the viewpoint of the then Egyptian commander, this was a logical plan since "once burned, twice shy."²⁵

After the war, in an article in English by the head of operations of the Egyptian navy in 1998, he praised the achievements of the Egyptian navy in the October War and mentioned, among other things, the inability of Israel to carry out an amphibious landing on the western side of the Gulf of Suez as a result of—according to him—the sea mines in the southern Gulf of Suez.²⁶

In the opinion of the author, the boast that the sea mines prevented Israel from carrying out a landing in the Gulf of Suez during the war is not justified. Although

24 The attempt to lay mines in the Milan Passage is described by the commander of the torpedo ship that was involved in the mission, which took place after the war and was unsuccessful. The readers of Arabic can find the testimony of Mahmud Ottoman Zyad at the following link in footnote 12. <https://bit.ly/3pQ3zdH>

25 The commander of the Egyptian navy, Fouad Abou Zikry, who in a previous round had also been the commander of the navy until September 1969, was dismissed by Nasser after the Israeli armored raid (Operation Raviv).

26 Ashraf Raafat in a 1998 article. The article was published in English in the Naval Forces magazine, volume 5/98 pp. 76-80. For a discussion of the effectiveness of the mines in preventing an Israeli landing, see page 80 in the following link. <https://archive.kippur-center.org/arab-sources/ar-egyptian-navy-1973-october-war-1998.pdf>

during the war, there was an Israeli plan for a large-scale amphibious landing on the western shore of the southern Gulf of Suez, it was cancelled long before it became clear to Israel that the southern Gulf of Suez had been mined. Thus, the fact that there was no landing was not due to the threat of mines at the southern opening of the Gulf of Suez. There were other reasons for the cancellation that have nothing to do with the threat of the sea mines.

One way or another, there may be room to ask the question of what would have happened if the landing operation had not been cancelled and would have taken place in areas where sea mines had been laid. As historians say, one shouldn't ask what would have happened if.

Ironically, after a little more than a decade, the Egyptians themselves fell victim to offensive mines in the Gulf of Suez. This took place in the summer of 1984 when Libya, apparently at the request of the Iranians, laid seabed mines in the Gulf of Suez by means of a Libyan roll-on/roll-off ship named the Ghat. The mines were a source of concern among the Egyptians due to the fear that traffic through the Suez Canal would be interrupted. At the end of the day, the Gulf of Suez was cleared with the assistance of foreign navies. Paradoxically, the first ship to be damaged by one of the (Soviet-made) mines was a Russian merchant vessel. The mines were laid, as mentioned, at the request of the Iranians because Egypt supported Iraq during the Iran-Iraq war and provided large quantities of arms to the Iraqi army sent from the Port of Suez to the ports of Aqaba and Yanbu.

Finally, the Israeli navy was surprised by the sea mines laid by the Egyptian army in the southern Gulf of Suez during the Yom Kippur War. It did not have the technological means to deal with the threat and an operational solution was found by locating an alternative route, thanks to the existence of an internal passage that the Egyptians had ignored during the planning and execution stage.

The current configuration of threats, whether from the Hezbollah in Lebanon, terrorists in the Gaza Strip, the Houthis in the southern Red Sea at the Bab el Mandeb Strait or from Iran and the Revolutionary Guard's naval force, also includes the threat of offensive sea mines that might be used against Israel in order to disrupt traffic to its ports. It can be hoped that since the Yom Kippur War there has been an improvement in the capabilities of the Israeli navy in clearing and neutralizing areas that are suspected of containing mines.

The Options for a Commercial International Port in the Gaza Strip: A Historical Perspective

*Yossi Ashkenazi*¹

The construction of a port for the Gaza Strip has been under discussion for close to 30 years. It includes complex issues and in particular Israeli security inspections in order to prevent the acquisition of weapons by Hamas as opposed to the economic needs of close to two million residents in Gaza, in addition to the fact the existence of a port that ships from all over the world will visit will be a sign of Palestinian national sovereignty.

The goal of this chapter is to provide a historic and geographic review of the various alternatives that have been put forward for the construction of a port in Gaza and other options that are specifically designed for the Gaza Strip. The chapter is politically neutral, and its goal is to factually describe the options, although it appears that the option eventually chosen will be part of a broader arrangement between Israel and the Palestinians and will not stand alone.

Introduction

From a historical perspective, the question of building a port in Gaza first arose in 1993 with the signing of the 'Oslo accords'. As part of the accords, the foundations were laid for agreements with the Palestinian Authority (PA) to evaluate the possibility of building a port in Gaza. The issue became even more relevant with the Disengagement from the Gaza Strip in 2005,² which was meant to end Israel's relationship with Gaza and its responsibility for Gaza's citizens. Nonetheless, and for understandable security reasons, Israel continued its supervision of trade (primarily imports) between Gaza, Israel, the West bank and other countries.

According to the Paris Accord, which was the economic appendix attached to the Oslo agreements that defines the bilateral economic and commercial relationship, Israel and the PA are considered to be a "single tariff envelope". In other words, processes to do with international trade, such as tariffs, regulation, etc., take place only on the entry of the goods into Israel while the conveyance of the goods between

1 This chapter is based on a paper written in 2015 as part of my studies at the National Security College.

2 The Israeli disengagement from Gaza was the unilateral dismantling in 2005 of the 21 Israeli settlements in the Gaza Strip and the evacuation of the settlers and Israeli army from inside the Gaza Strip.

Israel and the PA is not defined as international trade. This situation was maintained, at least officially, also after the Disengagement.

Following the Oslo accords, a Dutch- French consortium consisting of the Dutch company Ballast- Nedam and the French company Spie- Batignolles began the planning of a port in the Gaza Strip in the 1990s and later on even began building it. During this process, disagreements arose as to the way in which Israel would inspect the goods and equipment arriving in the port in order to prevent the smuggling of weapons. In September 2000, a short time after work was started, the Second 'Intifada' broke out. After the "lynch" in Ramallah,³ the IDF bombed the port infrastructure that had been constructed, as well as the airport, and during the ensuing 20 years until today construction has not been resumed.

It is also worth mentioning the work of three academics: Professor Zeev Hirsh, Shauli Katznelson and David Sasson, who wrote a policy paper that included several alternatives for the construction of a port in the Gaza Strip.⁴ They sought to demonstrate the advantages of a port in Gaza from the perspective of flexibility and the conveyance of goods to the South of the State of Israel, to the West Bank and even to Jordan, and that the port could serve as a catalyst for the building of roads, railways and other types of infrastructure. The policy paper outlined a 30-year plan that included, among other things, the building of a main road connecting Gaza to Amman. Naturally, and as in the case of any port, their concept would lead to employment solutions for the local population and the creation of job training programs for port-related occupations, such as logistics, freight-forwarding, crane operation, etc. Hirsh felt that the economics of the project would accelerate geopolitical processes and therefore he went beyond the construction of a port by also suggesting the establishment of a free trade zone that together with the port and the accompanying logistic facilities would be a positive factor in the achievement of peace.

After Israel withdrew from Gaza as part of the Disengagement in 2005, the Palestinian Port Authority submitted a proposal to build a port in the Gaza Strip based on the previous plan, namely a port located in the northern part of the Gaza strip. The proposal was submitted by the engineer Kaled Abu Gumiza.

3 During the "lynch" in Ramallah on October 12th, 2000, two IDF reserve soldiers were attacked and killed by a Palestinian mob.

4 Zeev Hirsch, Shauli Katznelson and David Sasson, A Free Economic Zone and Port for the Gaza Region. The Hammer Fund for Economic Cooperation in the Middle East, Tel Aviv University, 1991.

Following Operation 'Cast Lead' in late 2014, the issue of a port in Gaza again made the headlines as part of a possible agreement with the Palestinians. The agreement by Israel for the construction of a port in Gaza in the reality that followed Operation Cast Lead was interpreted as an unprecedented achievement for Hamas. Avigdor Lieberman, who was Foreign Minister at the time, attacked the Hamas by claiming that the organization is seeking political gain by means of terror.

As we are about to enter 2021, there is still no change in the Israeli position with regard to the construction of a commercial port on the coast of the Gaza Strip. There is a full sea blockade on the Gaza Strip, which means closure of Gaza's coast by the Israeli navy and preventing the arrival of ships to the Gaza Strip. Nonetheless, from 2015 until 2020 Israel gave serious consideration to a number of options that could open the door to international trade to and from the Gaza Strip, while at the same they do not force Israel to put aside any of its conditions for full security and for the prevention of use of any future port by Hamas for an arms buildup.

Accordingly, I will review the various ways to approach the idea of a commercial international port in the Gaza Strip, as they have been presented over the years.

First option: The status quo – the Port of Ashdod

This option is the current situation, as it has existed since the Disengagement from Gaza. The arrival of sea freight to the Gaza Strip currently passes through the Port of Ashdod. About 4 percent of the goods arriving in the Port of Ashdod are destined for Gaza. This involves traffic of equivalent of about 3,000 containers per year (according to data of the Israeli Shipping Bureau for 2014; the quantity of goods arriving by sea for the Gaza Strip has remained virtually unchanged for the past five years⁵).

Most of the goods are unloaded at the Port of Ashdod. They undergo several security and industrial inspections and then make their way overland to the Gaza Strip. It is prohibited by Israel for cargo containers to enter Gaza and therefore the goods arriving at the Port of Ashdod are unloaded and then transferred onto trucks of one configuration or another. The goods pass through two conveyance systems, one Israeli and one Palestinian (within the Gaza Strip) and the interface between them is the Kerem Shalom crossing.

It is worthwhile describing the current reality by way of the "story" of a container's journey from the moment that it is ordered by a Palestinian businessman until it arrives at its destination in Gaza.

5 Interview with a senior official of the Port of Ashdod in 2020.

The journey of a container:

In a meeting at the Gaza Coordination and Liaison center at the 'Erez Crossing', I heard about the "journey" of a Palestinian import container headed for the Gaza Strip from the Port of Ashdod that contained a shipment of fertile eggs.⁶

The Palestinian businessman travels to Spain and locates a chicken farm in order to import fertilized eggs. He does this after comparing the cost of importing them from Turkey, Italy, the US and Germany and decides to import the eggs (based on their cost) from Spain. The Palestinian businessman is dependent on an import permit from the Veterinary Service in Israel. On the assumption that he obtains the relevant permit, he arranges sea transport from Spain to Ashdod. When it arrives at the Port of Ashdod, it is unloaded into the bonded warehouse. An Israeli veterinarian inspects the shipment's documents, physically checks the eggs unloaded from the container and approves them. Now, the eggs have to be reloaded by means of a forklift onto trucks, which involves a fee paid to the Port of Ashdod for port services. The goods are loaded onto the Israeli truck at a cost of at least NIS 5,000 (this is a specialized truck – it is closed and refrigerated).

The truck makes the trip from Ashdod to the 'Kerem Shalom' crossing in about two hours. This is the only crossing for goods into Gaza. Now the goods will wait for between one and four hours. Sometimes the goods may not enter Gaza on the same day. When its turn comes, the goods are unloaded from the truck and eggs go through a security and veterinarian inspection.

At this stage, what is called a "sterile" truck arrives to take the goods from Israeli territory into Palestinian territory. The sterile zone is secured by the IDF. After the sterile truck gets to the other side—the Palestinian side—here again there is a wait of between an hour and a full day. On the Palestinian side, the sterile truck is unloaded, and the goods are loaded onto a "regular" Palestinian truck. Since goods can cross only by way of Kerem Shalom, transportation is usually required also in the Gaza Strip to the eggs' final destination. The cost of the crossing is NIS 1,000, the cost of using the sterile truck is NIS 500, and the cost of the Palestinian levy is NIS 50 per ton (in other words a truck carrying 20 tons of eggs will involve a levy of NIS 1,000). Palestinian taxes add about NIS 200 per truck. There is also indirect damage to the goods, including damage to the eggs during the crossing and the loading and unloading, and the theft by the Palestinian workers during the transportation due to their dire economic situation. All of these delays reduce the quality of the eggs and their percentage of hatching is reduced from 90 percent to 75 percent. That 25 percent drop in quality represents eggs that will be disposed of.

6 Interview with a senior official at the Gaza Coordination and Liaison center on December 21, 2014.

The service provided to the Palestinians by the Port of Ashdod has been improved significantly during the past year, thanks to a business policy of "supplier–customer" while maintaining the level of security.

Second option: A Palestinian pier in the Port of Ashdod

During the late 1990s, the Ports and Railway Authority in Israel (as it was then called) offered the Palestinians a "Palestinian pier" in the Port of Ashdod in order to avoid the cost of building a commercial port in the Gaza Strip. The pier would provide all of the symbols of sovereignty that are so important to the PA, such as a mechanism for use of the pier whereby imports and exports would not be considered as goods transported by way of Israel but rather would be considered to be only Palestinian goods. As part of the plan: workers and a pier would be allocated periodically to the PA in order to move cargo; Palestinian inspectors would be included in the activity; and an area of the port would be leased to the PA for the offices of customs brokers, inspectors, etc. including storage area, namely a full Palestinian logistical zone.

In the short run, the Ports and Railway Authority proposed to the PA that the Palestinian pier would be allocated to it on request and in the long run, when the port is expanded, it would be possible to consider the permanent allocation of a pier to the Palestinians. In a policy paper of the Ports and Railway Authority, called "Operation of a Palestinian Pier in the Port of Ashdod", consideration was given for separate incoming and outgoing traffic on the Palestinian pier in the future (Marom and Agamon, 1998). In the end, the plan was shelved due to a lack of interest on the Palestinian side.

The economic assumption of a Palestinian pier in Ashdod is that the goods that are unloaded still need to travel overland to the Gaza Strip. Given that this will be done without any special fees, the economic calculation changes radically. In this option, there is no difference between goods unloaded on the pier and transferred by land to Jordan, to the West Bank or any other land destination, just like goods unloaded in the Port of Haifa that are transported overland to various destinations in the State of Israel, Jordan and the West Bank.

The possibility of a Palestinian pier that handles only exports is not economically feasible since the ship that will leave the pier and will unload the goods in the destination port will not be able to return with freight being imported to the Gaza Strip.

As of 2020, this option is not relevant to any degree in view of the geopolitical situation between Israel and the Gaza Strip.

Third option: A deep-water or shallow-water port in Gaza

It would appear that most of the public discourse on the issue of a port in Gaza has in mind a deep-water port based on the aforementioned plan by the Dutch- French consortium Ballast Nedam put together in the 1990s.



Figure 1: A simulation of the planned port accessed from the site of the Ballast Nedam consortium

Based on the information in the "Strategic Masterplan for the Development of Israel's Mediterranean Ports" of the Israel Ports Company (IPC) from 2006, a clear plan was ready for the creation of a shallow-water port in Gaza that would be used for RORO ships,⁷ as a branch of the Egyptian ports of Port Said (the main transshipment port in the Eastern Mediterranean) and the port of Damietta.

The planned port was not meant to handle the loading and unloading of containers, but rather general cargo ships whose freight is intended to be transported from there overland. The IPC's forecast in 2006 related to the provision of services by the port in Gaza and that of 'el- Arish' to meet the needs of the PA, Jordan and Iraq (according to the situation in 2006). Moreover, and according to the forecast, although efficient and active ports in Gaza and el-Arish would not be able to compete with Israel's commercial ports, they would increase, at their expense, the share of Palestinian goods transported by sea. Clearly this forecast was dependent on the political and geopolitical situation, just like any other plan.

⁷ Rollon/rolloff. These ships allow for a loaded truck to get on to the ship itself.

Nonetheless, the large transshipment ports that exist today are deep-water ports that can serve giant ships (of 18,000 TEU and more, which have a draught that requires deep water in the port). In Israel the two new ports being built will provide a solution for these ships (the Ha'mifratz Port in Haifa and the Ha'darom Port in Ashdod), which will reduce the need to use feeder ships from other transshipment ports in the Eastern Mediterranean, will shorten the time of conveyance, will reduce the dependence of Israel on foreign ports and will save sea transportation costs.⁸

Therefore, from the perspective of 2020, and given the technological progress in shipping and ports, a port in Gaza can take one of two possible forms: a shallow-water port designed to handle cargo ships arriving from the main transshipment ports in the Eastern Mediterranean or an independent deep-water port (although this possibility involves a financial investment of a much greater magnitude).

The aforementioned port, whatever its configuration, will serve as a source of employment and will provide jobs for the local population.

This is the case as we enter 2021 and even more so once the two aforementioned ports being built in Haifa and Ashdod (Ha'mifratz and Ha'darom), which are planned to operate semi-automatically and will be operated by leading international terminal operating companies, are completed. Current technology is changing the world order and occupations that were previously common in the ports will no longer exist. A prime example is crane operators – an occupation that is disappearing from the world of the ports, as a result of the remote-control technology that facilitates a central control room and loading/unloading without the mediation of a human being.

Apart from the movement of goods by ship, a port has an important role to play also in the movement of people from one place to another, such as incoming and outgoing tourism. The cruise activity by way of Gaza to both Egypt and Jordan and the West Bank could in principle be a major engine of growth. The port in Gaza could serve as a port for passenger ships for the purpose of tourism or coastal cruises, just like the model that exists in Israel, which includes, for example, local ships operated by 'Mano Cruise Lines' and other local ships liners and international cruise companies. For purposes of illustration, about half a million cruise passengers pass through Israel's ports every year (ignoring of course the period of the Corona crisis).

The measure of tourism in this context is the number of passengers that enter the port for a one-day visit. Here again, the port in Gaza in a different reality could serve

8 Statistical Yearbook of Shipping and Ports for 2019, Ministry of Transportation, the Shipping and Ports Authority (SPA), p. 8. http://asp.mot.gov.il/SPA_HE/StatisticalYearBook19.pdf [Hebrew]

as a catalyst in the local economy by means of coastal tourism, whether planned or spontaneous.

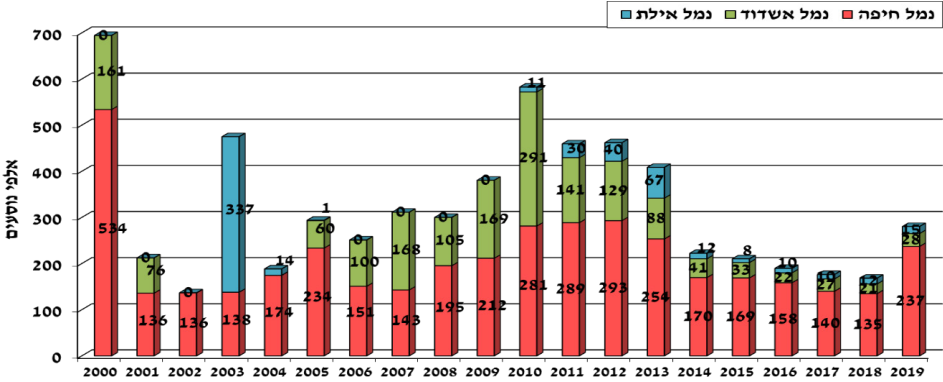


Figure 2: Passenger traffic in Israel’s ports 2000–19⁹

Fourth option: A seaport or an airport on an artificial island

The construction of artificial islands to house infrastructure has been discussed in more than a few engineering-technological studies, which have also provided examples of its implementation. A review of the various technologies for constructing artificial islands appears in Appendix A to this chapter.¹⁰ Weiss (2014) describes the expected needs of the State of Israel in the realm of infrastructure and in that context surveys the building of artificial islands off the coast of Israel.¹¹ Borat (2014) also examines the subject of artificial islands off the coast of Israel,¹² as does a paper by researchers at the Technion.¹³

9 Ibid., pp. 38–39.

10 The technologies for artificial islands have also been reviewed in Moti Klamer, *Artificial Islands for Energy Infrastructure*, Maritime Strategic Evaluation for Israel 2016/17, p. 166 and Moti Klamer and Ehud Gonen, *Developments in the Construction of Artificial Islands and Floating Platforms during the Past Year*, Maritime Strategic Evaluation for Israel 2018/19, p. 206.

11 Shmuel Weiss, 2014. *Artificial Islands: A Milestone in the Development of the State of Israel?* Chaikin Chair for Geostrategy at Haifa University and the National Security Council Research Center. <https://bit.ly/3eaiD1i> [Hebrew].

12 Michael Borat, *The Maritime option – the Blue Avenue*, Chaikin Chair for Geostrategy, Haifa University, 2014. <https://ch-strategy.hevra.haifa.ac.il/index.php/studies-and-publications/books/45-20140201> [Hebrew].

13 Maritime Plan for Israel, *Stage III Artificial Islands as a Policy tool*, 2015. <https://bit.ly/2JOnkBr> [Hebrew].

The plan for an artificial island that will be used for a seaport and an airport for Gaza was proposed by Minister of Transportation Israel Katz during Operation 'Protective Edge' (2014). According to the PTP magazine (2014), Katz claimed that this project will help Israel free itself of civil responsibility for the Gaza Strip and will facilitate civilian separation, whereby Israel will no longer supply electricity, fuel and food to Gaza. At the same time, Gaza will undergo a process of disarmament that will include the weapons, rockets and missiles possessed by Hamas. In order to provide for the needs of the Gaza Strip after the cessation of Israeli logistic support, the 'Rafiah' crossing between Gaza and Egypt will be opened for an interim period for the supervised passage of goods and people.

The financing of an artificial island, which according to the plan will be built at a distance of 4.5 km from the Gaza coast, will be provided by the international community, while the engineering model will be provided by the Israel Ports Company. On the island there will be a seaport with a water depth of 30 meters (!), a logistic zone and a marina for yachts. In addition, it will have infrastructure facilities, such as energy plants and a desalination plant, and at a later stage an airport.

The security inspection of goods unloaded on the island will be carried out using Israeli technological means, and on the bridge between it and the Gaza Strip there will be an inspection station to prevent smuggling. This bridge will have the ability to support vehicle traffic, railway lines and pipelines for oil, fuel and natural gas.¹⁴

The island as a whole will be under international supervision (such as that of NATO) while at sea Israeli control will be maintained and essentially so will the maritime blockade in order to prevent smuggling other than by way of the port.

According to the plan, there will not be any residential building on the island although there will be tourist hotels. The full operation of all the facilities on the island, including the seaport and the airport, will be the responsibility of the Palestinians. The main condition for the implementation of the plan is, as already mentioned, the full demilitarization of Gaza.

Zvi Ben Gelyahu (2011) reports that Katz' plan was presented already in 2011 and received a "green light" to start planning from the Prime Minister, as reported by Channel 2 on March 29th, 2011 by Udi Segal. According to the report, the island will have an area of about 8,000 dunam, and the bridge between it and the Gaza Strip will be on pillars, like the bridge at the power stations in the cities of Hadera

14 "Israel may build artificial island off Gaza Strip coast", Conal Urquhart, The Guardian, 30 March 2011.

and Ashkelon. The plan was put together over a period of three months by a group of experts on shipping and airport traffic, which was appointed by the Minister of Transportation. The cost of the project ranges from 5 to 10 billion dollars and it will require an estimated six to ten years to build. Channel 2 reported at that time that the program had the support of Meir Dagan, former head of Israeli Intelligence, and that it had already been presented to the Israeli Security Cabinet.



Figure 3: Simulation of the proposed artificial island off the coast of Gaza¹⁵

The spokesperson for the Ministry of Transportation declared that the main goal of the island is to improve the quality of life for Gaza residents without harming Israel's security.¹⁶

However, today, and in view of the technological advances in the maritime realm (and in particular the Ocean Brick System – OBS), it is possible to make the planning more flexible and even more so the implementation, and of course the price is not of the same magnitude as that of building an island based on breakwaters and fill of sand and rocks brought to the site.

A possible example based on the aforementioned technology is presented below. It can keep the shore free from port facilities, it is more efficient from the viewpoint of time to build, it does not harm the environment and it is certainly feasible from an engineering standpoint.

¹⁵ Spokesperson of the Ministry of Transportation on the site port2port, May 24, 2018.

¹⁶ Ibid (12).



Figure 4: A model of an artificial island that was presented for a port in Georgia to be built using the OBS technology

Fifth option: A floating port

Already at the beginning of the 1990s, alternatives were considered for a floating deep-water port for Gaza. Livne (1997) describes the methods that were relevant during the second half of the 20th century, namely the "flexiport" which was a floating modular port, an application borrowed from the method of building pontoons for drilling islands in the North Sea. The method was adopted by a Dutch company which began building modular "pontoons", namely floating elements that can be assembled in order to create large platforms. The first floating port using the flexiport method was created in the Falklands in 1984, during the war between Argentina and Britain and within less than six months.

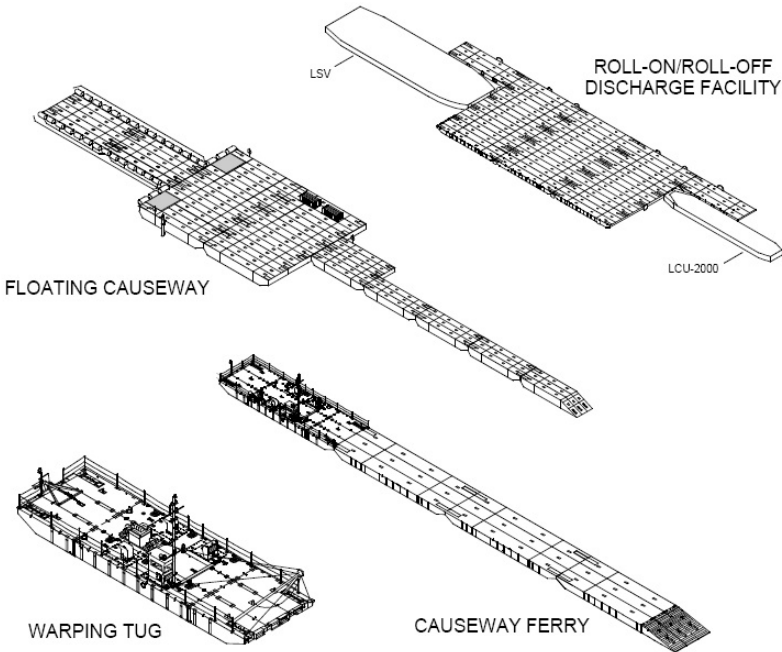
Today, engineering technology makes it possible to build floating ports that have no less capability than traditional deep-water ports on the coast. Stefan Wamfeler (2014) claims that there is currently a trend in the planning of ports toward floating ports that are between twenty and forty miles off the coast and to locate port activity there. The main motivation is security, namely, to be able to check containers arriving in the US before they come onto the mainland.

In this analysis, and when a floating port for Gaza is not the subject of discussion, the intention is to a floating pier of the type used by navies (such as the US navy) in order to enable the anchoring of small to midsize ships for unloading. The US

navy technical manual TM 55-1945-205-10-4 presents the possibilities for building a floating causeway by means of modular components:



Figure 5: Simulation of a floating port¹⁷



17 <http://www.seasteading.org>.

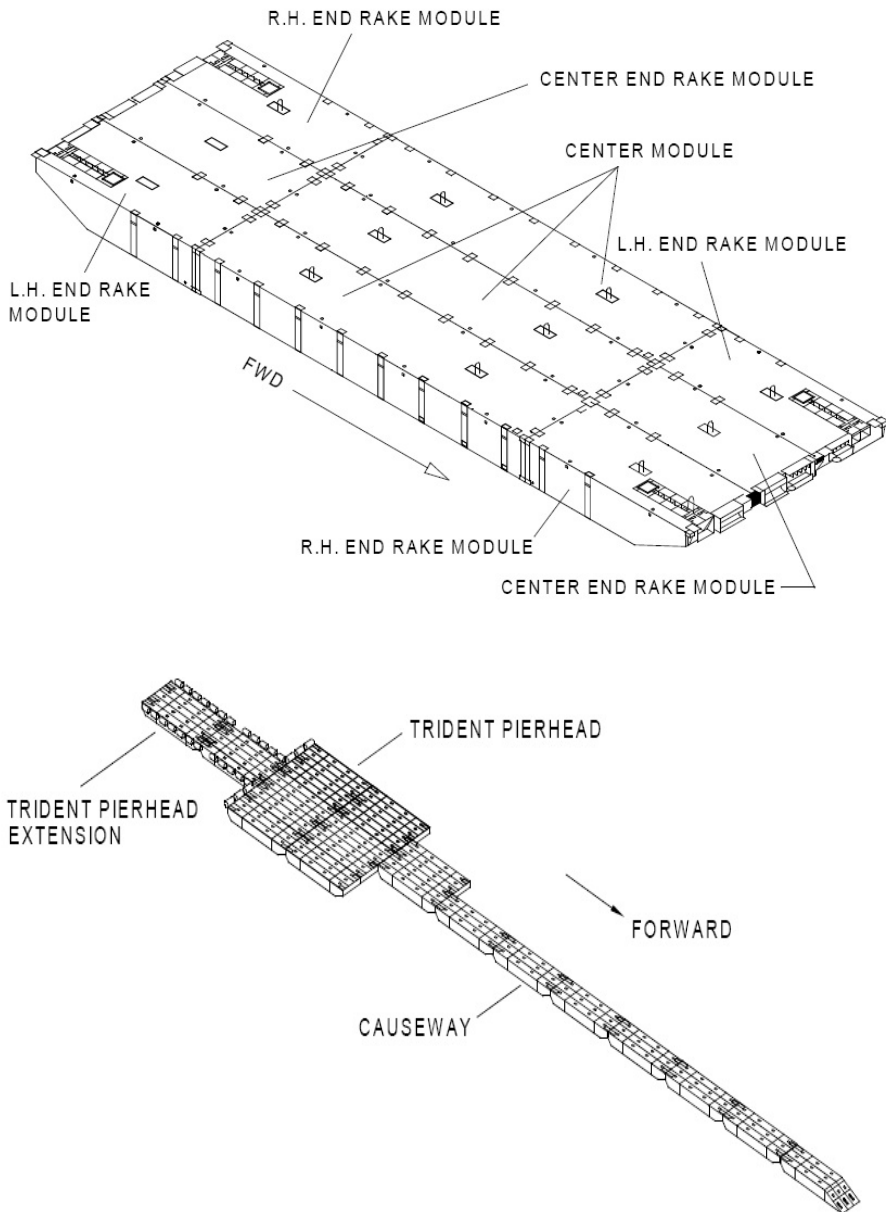


Figure 6: US navy technical manual TM 55-1945-205-10-4 which presents possibilities for the building of a floating causeway by means of the assembly of components¹⁸

18 The drawings are taken from the American technical manual TM 55-1945-205-10-4 MODULAR CAUSEWAY SYSTEM (MCS) FLOATING CAUSEWAY (FC).
<https://www.liberatedmanuals.com/TM-55-1945-205-10-4-HR.pdf>

The idea behind this option is to handle feeder ships carrying a relatively small number of containers (between 300 and 2,000) that have been transhipped at another port.



Figure 7: A floating pier

Sixth option: A secure transshipment port and a shipping route from it to the Gaza Strip

This option involves a Palestinian pier at a port in a different country in the Mediterranean basin, to which ships will bring goods that are destined for Gaza. The goods will undergo transshipment and from there will be brought by a designated shipping route to Gaza. The shipping will be done by feeder ships which will arrive at the Gaza Strip and will be handled there on a designated floating port of one type or another (or deeper piers), which will only be used for that purpose.

The countries that have been mentioned in the documentation of this option by the various planners are Cyprus and Turkey. In other words, this involves a Palestinian pier at Larnaca or Limassol (in Cyprus) or Mersin (in Turkey) where security inspections would be carried out (by a third party, such as the EU or NATO).

In early 2013, the Gaza businessman Gawdaat Alhudri submitted an initiative to the District Coordination and Liaison (DCL) of the IDF to establish a shipping line between a Gaza port and a port in Turkey. The initiator of the idea is Alhudri's brother, Gamal,

a member of the Palestinian parliament who is identified with Islamic organizations and is the Chairman of the "Remove the Blockade" Committee. The initiative includes the removal of the "maritime blockade" on the Gaza Strip as part of the establishment of a supervised sea route between a Gazan port and a single port in Turkey.

A detailed plan submitted by Gawdaat Alhudri to the DCL describes the main motivation for the plan: "Egypt is not providing an appropriate solution to the Gaza Strip's commercial needs."

According to the proposal, the supervised route will connect a Gazan port—that is, a fishing port—to the Port of Mersin in Turkey, and it will be used for ship traffic to and from Mersin. It will not be used by ships coming from other ports. In view of the fact that this is only a fishing boat port, only ships of up to 5,000 tons (according to the proposal) will be able to use this route.

The fishing port in Gaza will be expended to include storage facilities and the necessary infrastructure for the loading and unloading of ships. In addition, it will be possible to upgrade the capabilities of the port in Gaza on the basis of offshore facilities (such as a floating causeway). From the Hamas' standpoint, involving Turkey in this solution is a clear advantage. According to the initiative, the very fact of Turkey's membership in NATO will, at least in theory, reduce Israel's security concerns. As part of this plan, Israel will be part of the security inspection of goods, it will prevent the smuggling of weapons and it will escort ships on the trade route to Gaza. Furthermore, the project will help rehabilitate the diplomatic relations between Turkey and Israel, which deteriorated following the incident of the 'Marmara flotilla', and the two countries will be able to cooperate on the Palestinian issue. Finally, increasing imports from Turkey and the opening of the shipping route between Turkey and Gaza will lead to significantly cheaper imports.

According to Alhudri, the creation of the shipping route has clear advantages, such as the creation of a cheap supply of goods and inputs in the Gaza Strip; a reduction in the cost of transporting goods by way of the tunnels (...); a reduction in the various fees and taxes that are paid to Israel, the PA, Egypt and Hamas; reducing the time needed to import goods relative to the "indirect" routes used today; and the direct collection of tariffs by the PA on goods heading to the Gaza Strip at the port in Turkey. Moreover, there is a potential for using the Gazan port for the import of goods also to the West Bank. The plan will advance the "state" process by way of the channel of "economic independence" for Gaza, will create a direct link between Gaza and foreign markets, will create jobs and will facilitate the movement of people.

However, as of late 2020, Turkey is not a potential player in such an equation from Israel's point of view. But this is not the case for the option of a Palestinian pier within a port in Cyprus. This is a feasible option that should be considered and the Port of Lanarca, for example, is a possible facility for transshipment.

Furthermore, in 2017–18 the IDF again considered the option of a transshipment port but nothing developed in view of the geopolitical reality.

One way or another, if this option is realized, then the Israeli navy will have an additional mission, namely the escort of ships making their way from the transshipment port to the Gaza Strip. The objective will be to ensure that the ships do not link up with other ships on the way in order to receive weapons destined for the Gaza Strip, a mission that will require the investment of resources.

Seventh option: The Port of el-Arish – from vision to solution

In view of the strategic masterplan for the development of Israel's Mediterranean ports, the Egyptians have over the years developed the Port of el-Arish as only a secondary port, with a capacity of only 2 million tons of general cargo, alongside various fishing activities. Nonetheless, in that Israeli plan it is mentioned that the Port of el-Arish can in the future (the plan was written in 2006 with a forecast up to 2050) serve as a key port that will handle part of the maritime transport of goods traveling to and from the Gaza Strip, the West Bank and Jordan (general cargo ships) and thus, together with Israel's ports, will facilitate their imports and exports.

The Port of el-Arish is the most northern Mediterranean port in northern Sinai. Up until 1982, it was indeed defined only as a fishing port. The Egyptian development activity in the port was evident already in 1987 (IPC, Masterplan, 2006) and included the expansion of the breakwater in order to later prepare the port for the handling of cargo ships.

Implicit in the option of expanding el-Arish is, from my perspective, a vision for the full solution of problem of access to an international port for the Gaza Strip and in my estimation, it is possible under certain circumstances.

The el-Arish option is being promoted by a group of businessmen led by Shlomi Fogel¹⁹ and includes an economic solution for the situation in the Gaza Strip.

¹⁹ Interview, March 20, 2015

The plan for the development of the Gaza Strip has the following components:

First, the building of 14 half-islands ("islets") – They will be financed by the Saudis at a cost of \$10 billion. A Belgian company has already performed a feasibility study. The islands will have a total area of 6,000 dunam with a potential of housing about 1 million people and they will expand the territory of the Gaza Strip which is currently 354 sq km.

The second component is the creation of "bubbles" for industrial parks that will serve as free-trade zones. The bubbles will be built by the following countries: Qatar, Dubai and Abu Dhabi, and will be the location of factories built by Israeli, Egyptian and Palestinian entrepreneurs. This will create a win-win convergence of interests.

Moreover, the Americans will finance the project to transform el-Arish into a deep-water port and shipping hub, including an international airport. It will also include a tourist boardwalk in the area of the Bardawil Lake (another Egyptian interest).

The international airport will stimulate the development of the Sinai region and thus will reinforce Egyptian sovereign governance in the peninsula and will help halt the trend toward it becoming a no man's land and an incubator for terror.

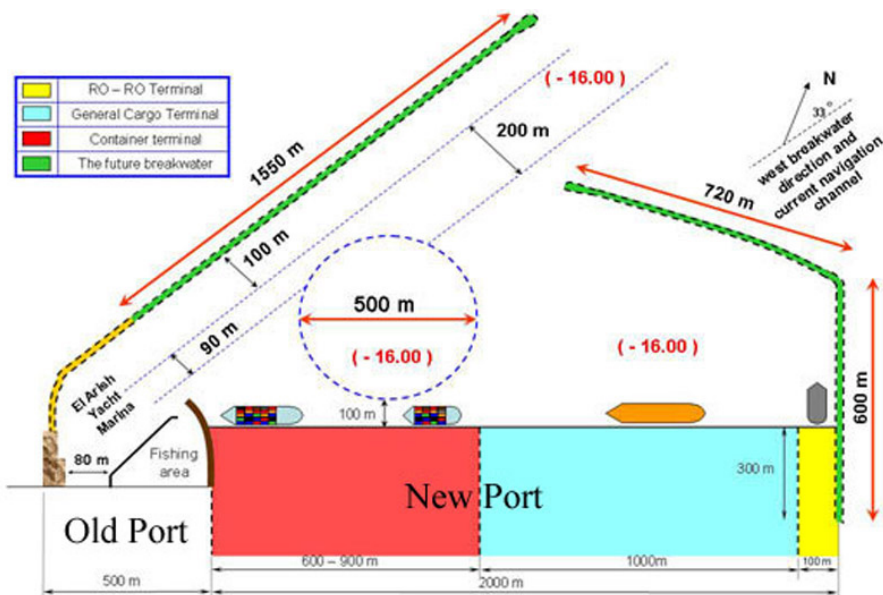


Figure 8: The Port of el-Arish – existing and planned²⁰

Essentially, the plan is reminiscent of Zeev Hirsh's aforementioned plan from the early 1990s, which included a free-trade zone on the seam between Israel and the Gaza Strip and described a situation in which the economic prosperity would have benefits on the geopolitical level, even to the point of changing the reality. The new plan is strongly in the interest of all the sides. As of mid-2019, the Port of el-Arish was as pictured in Figure 9.



Figure 9: Aerial photo of the Port of el-Arish²¹

Greater Egyptian control of northern Sinai is still the objective of the Egyptian government in order to preserve its sovereignty in the region.

Both the development of a deep-water port and an airport in el-Arish will, among other things, facilitate the conveyance of goods to and from the Gaza Strip, as will the construction of a power plant, desalination facilities, railways, and other infrastructures.²²

21 From Google Earth, on the site of the Egyptian government. <http://www.emdb.gov.eg>

22 The Jerusalem Center for Public Affairs, Developing Northern Sinai – A New Diplomatic Paradigm, June 26, 2019. <https://jcpa.org/article/developing-northern-sinai-a-new-diplomatic-paradigm/>

Conclusion

This chapter has examined the various alternatives for establishing an international trade connection to and from the Gaza Strip. Following is a summary of the alternatives:

Option	Port on the shore of the Gaza Strip	A port off the shore of the Gaza Strip	A port / designated pier in another country in the Eastern Mediterranean	A port in a neighboring country
Construction of infrastructure	Full construction of infrastructure on the coast of Gaza.	Construction of infrastructure using advanced technology.	Will require the building of a facility to handle ships in Gaza or on the shore (expansion of existing fishing port) or a floating facility).	Overland transportation to the Gaza Strip.
Security inspection	Problematic. Inspection by an international body.	A bridge will facilitate tighter inspection; inspection by means of an international body.	Inspection at the foreign port by an international body. Securing of the shipping route between the port and Gaza by the Israeli navy.	Egypt: inspection at the Egypt-Gaza border crossing. Ashdod: Continuation of tight Israeli inspection.
1.	Deep-water port for handling ships of all types.	Port on an artificial island that is connected by a bridge to the shore.	A Palestinian pier in Cyprus (Limassol or Larnaca).	Use of the expanded el-Arish port for the needs of the Gaza Strip.
2.	Shallow-water port for handling feeder ships and RORO ships.	Floating port	Palestinian pier in Turkey (Marsin).	Continued use of the Port of Ashdod for the Gaza Strip.

From a purely economic perspective and in the geographic reality that the ports of Ashdod and el-Arish are only a few dozen kilometers from the border of the Gaza Strip (from the north and from the south, respectively), there is no justification for building another port in Gaza. Therefore, from a purely logistical perspective, the Gaza Strip can be serviced by existing ports and the huge budgets that would be required to build a port in Gaza can be used for other desperately needed infrastructures in the Gaza Strip. Nonetheless, there is also a clear and fundamental Gazan desire for an independent port, both as a symbol of sovereignty and to avoid, at least to some extent (and to an even greater extent in the future), Israel's security inspections of Gazan trade.

In this context, it is worth mentioning that there are many examples of "pairs of ports" that are close to each other but are located in different countries (Eilat and Aqaba are examples from our own region).

The examination of the alternatives for a commercial port in the Gaza Strip or direct Gazan access to international trade needs to take into account Israel's need (which is apparently a clear and absolute Israeli red line) for reliable security inspection of goods transshipped at the port, in order to prevent the smuggling of weapons into the Gaza Strip.

Direct Israeli inspection is apparently not a realistic prospect in an arrangement in which the Palestinians use a port in a third country (rather than in Gaza or in Israel). In such a case, the security inspection will be dependent on the host country (the possibilities surveyed here were Cyprus, Turkey and Egypt), on a reliable international body acceptable to both sides, such as NATO or EU forces, and the use of security technologies that allow for remote Israeli inspection without a physical presence.

Weighed against the Israeli security interest is the Palestinian interest to build a port, as a gateway to international trade and the economic development it would bring and as a symbol of sovereignty.

It is clear that the Gaza Strip desperately needs economic development. However, it is in Israel's interest to consider whether such development will help Hamas preserve its regime in Gaza or whether economic growth will strengthen the Palestinian middle class, which will in the long run oppose the Hamas regime. On the other hand, it is possible—at least in theory and subject to the political developments in the region—to construct a mechanism such that the development of a port will occur simultaneously with the return of the PA to power in Gaza and with the demilitarization of the Gaza Strip, and a certain degree of international involvement.

On a more realistic note, it appears that as long as there is a strong Hamas regime in Gaza, no change in the current situation can be expected.

Appendix 1: Examples and technologies for building artificial islands

There are a few examples worldwide of artificial islands:

The island of Jorong in Singapore whose construction was completed in 2009. It is used for heavy industry as a solution for the shortage of land in Singapore.

The Japanese port of Kube which was built on a total area of 8,000 dunam and which can handle container ships and includes a logistic support area.

The artificial island in Dubai which is used for commercial infrastructure and residence.

The Island of Bilboa in Newport Beach, California which is composed of three artificial islands – Bilboa, Little Bilboa and Collins.

Pearl – Qatar: This is a manmade island with an area of nearly 4 million square meters. This was the first area in Qatar that was made available for ownership by foreign residents, with the population of the island growing from 3,000 in 2011 to 12 thousand in 2015. The island, which is developed by the United Development Company, is expected to also include entertainment facilities for residents, as well as for tourists.

The Palm Islands in Dubai: Three artificial islands off the coast of Dubai in the UAE. The archipelago was built by a land upgrade carried out by the Nail government real estate company. The Palm Islands are called that because they are in the shape of a palm tree. It is the name of the original island and the smallest of the three.

Until recently, the most commonly used technology for creating artificial islands was to bring in sand and boulders from quarries. This method harmed the environment and over time the tolerance for such activity has declined.

The basic building block of an artificial island is the caisson, a prefabricated element made of reinforced concrete that is sunk to the seabed. By accumulated a large number of caissons, it is possible to build breakwaters, islands and more. The caisson can also be hollow and filled with condensed air, and in this way, it can be towed to where it will be placed.

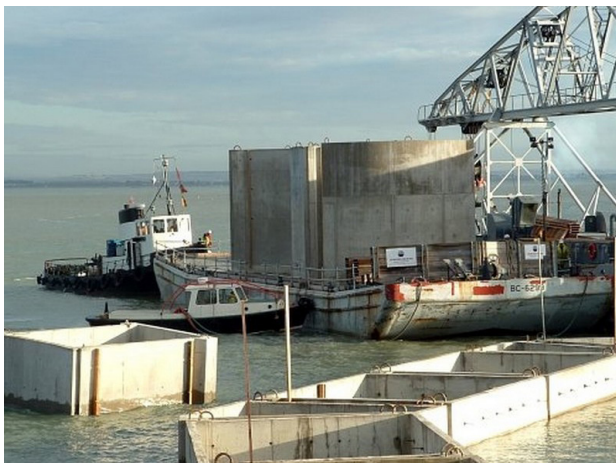
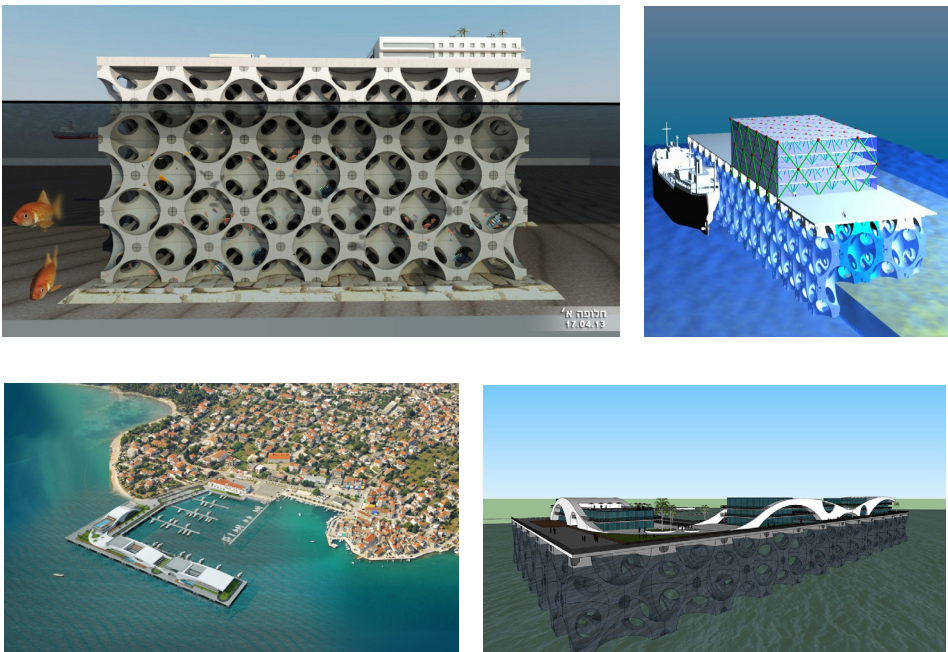


Figure 10: Transporting caissons on a barge

In recent years, there has been a major breakthrough in this domain in the form of Ocean Brick System (OBS) technology, which makes it possible to cast the concrete into special molds and to create elements that can be connected together. The elements are hollow and the construction of a pier, a wharf, a breakwater or an island is possible near the site by casting the elements at the location. There is no need to transport sand or boulders nor to transport the elements from the casting factory to the site. Everything is done on site and without harming the environment. The elements are hollow and therefore, after construction the structure can be towed to the site and sunk in a controlled manner.

Following are a number of examples:



Figures 11–14: An artificial island makes intensive use of raw material. Weiss (2014) estimated that about 70 million cubic meters of raw material is needed for an island of 2,000 dunam and another 10 million cubic meters of quarry material is needed for the breakwaters to protect it. In general, artificial islands that are built in water that is more than 20 meters deep become very expensive projects and therefore the aforementioned innovative method provides a solution at a fraction of the cost of a classic project involving sand and boulders.

The Unmanned Helicopter on the Israeli 'Saar' Corvettes – Innovation that was Ahead of its Time

Itsik Bilia

Introduction

In the 1980s, the need arose for the Israeli navy to upgrade the detection and control systems on its corvettes. This followed the installation of American sea-to-sea 'Harpoon' missiles whose range was much longer than that of the corvettes' integrated detection systems. This ability was achieved by the introduction of aerial fixed-wing systems. In this context, an appraisal was also carried out of developing vertical takeoff platforms, such as unmanned helicopters. The project that was considered was called 'MITNOSES' and was based on the American DASH (Drone Anti-Submarine Helicopter). The DASH was developed in the 1950s for anti-submarine warfare and was used by the US in the 1960s during the Vietnam War and elsewhere. The idea was innovative in several ways: the operation of unmanned vehicles that take off and land from a Saar corvette; its technological characteristics, such as a double rotor; and the exploitation of a helicopter's unique traits as part of naval warfare tactics. In the end, the Israeli project was cancelled in the early 1990s. Both then and now, the Navy has neglected the idea of unmanned helicopters on its vessels in favor of manned helicopters.

The need for a helicopter in the Israeli navy

One of the main lessons learned by the Israeli navy from the Yom Kippur War (1973) was the difficulty in coordinating with the Air Force during wartime, which is dense with events and missions. The navy formulated its tactics as a response to the gap between the range of the Israeli 'Gabriel' missile and its rival in the navies of Egypt and Syria – the Soviet 'Styx' missile. The 'Styx' had a range of 45 km as opposed to 20 km for the 'Gabriel'. The Navy's tactics included various means that would allow the Israeli ships to close the gap to an enemy vessel without being threatened, until it was possible to launch the 'Gabriel'. This included various types of electronic warfare and the role of the Air Force to deter and delay enemy ships from launching missiles in the initial stage. This tactic, developed by Israeli Rear Admiral Hadar Kimhi, in the end led to the desired outcome with respect to being able to cause harm to enemy ships without the Navy's ships being threatened. However, despite the numerous training exercises, during actual warfare the Air Force's planes did not take part in the sea battles—except on one occasion—since they were overburdened with other

missions. The lesson learned was that the Israeli navy is in need of tactical aerial means that are designed specifically for its own unique missions.

Another development that influenced the aerial component of sea warfare was the arrival of the American 'Harpoon' (KANARIT) missile in Israel at the end of the 1970s. It had a range of more than 90 km, which was beyond the range of the radar on the Navy's ships. There thus arose a need for aerial detection systems that could identify targets over the horizon and guide weapons toward them. In addition, this system should not give away the location of the mother ship and therefore an aerial vehicle was ideal since it could be operated far from the ship that launched it.

The combination of the need for air support in order to detect targets over the horizon and the fact that naval missions are not the Air Force's first priority led to the conclusion that the Navy should develop an ability to operate a vertical takeoff vehicle. This vehicle would be tailor-made to the dimensions of the Navy's ships and would provide the ship's commander with independent control over its aerial abilities.

A historical survey of helicopters in the Israeli navy

The first test to land a helicopter on a 'TARSHISG' 'Saar 4' ship was carried out successfully in 1997, using a special structure built into the ship's stern. After that, two 'HOHIT' model 'Saar 4' ships were built which were approximately 4 meters longer than originally planned and they were built with a designated landing platform in the stern and a hangar for storing the helicopter. Obviously this was at the expense of weapon systems that had to be removed from the ship, such as the 76 mm cannon in the stern. Various helicopters participated in the initial missions, including the 'SAIFAN' (Bell 206), 'ANAFAN' (Bell 212) and 'LAHATUT' (Hughes 500 MD Defender). In August 1984, the idea of using helicopters was put into practice during the 'NEKUDAT ZINUK' (starting point) operation in which two of the Navy's HOHIT model ships took part. Each of them had a pair of LAHATUT helicopters armed with antitank missiles. They sailed toward the Lebanese-Syrian border at a distance of about 180 km from Israel. Due to the close proximity to the Syrian border, the Air Force decided not to attack with fighter planes. The small helicopters attacked terrorist targets with great success and returned to the mother ships and to their bases without harm.

In 1985, the Navy received its first naval helicopter, a French-made Dolphin (Eurocopter HH-65). The two helicopters that were acquired suffered from numerous breakdowns and in 1996 a training accident occurred at sea in which one of them

crashed during a night exercise and its crew of three were killed.¹ In 1997, a number of Panther AS-565 (A'TALEF) helicopters were acquired from Airbus Helicopters. These helicopters are in use until today by the Navy. The naval helicopters are operated by the Megenei HaMaarav squadron from the Ramat David base and are under the command of the Navy, in coordination with the Air Force. The Navy decided to acquire eight Seahawk SH-60F helicopters made by the Sikorsky company at a cost of \$300 million. These are second-hand helicopters that were part of the US Navy's surplus and which underwent renovation. A major delay in this deal has been reported and apparently the helicopters will not be supplied in 2020 but only at the end of 2021. It appears that the condition of these helicopters is worse than was expected and the price of their renovation is millions of dollars more than the original forecast.²

The birth of the MITNOSES project

At the beginning of the 1980s, the possibility was raised of using unmanned helicopters. The operational requirements for an unmanned helicopter include the following: vertical takeoff and landing ability of a small vehicle deployed on the ships used by the Navy during that period; ability to carry a significant load, including various types of detection equipment, such as maritime radar and sensors; and an ability to remain in the air for several hours in order to provide the mother ship with a prolonged solution.

In those years, the military industries in Israel had about 15 years of experience in the development of unmanned aerial vehicles; however, that experience was in fixed-wing vehicles. Israel did not possess knowhow in helicopter development and therefore the possibility of developing an Israeli unmanned helicopter was not particularly feasible. Also in the global aviation world, there was a noticeable technological lag of several decades between the development of unmanned helicopters relative to unmanned aerial (fixed-wing) vehicles. It was therefore decided to initiate a project involving a number of partners. The Navy was the customer and it defined the operational requirements, and the Air Force was naturally a partner in the process. Israel Aircraft Industry (IAI) was chosen as the

1 Lieutenant Colonel Ben Tzion (Bentsi) Becher who was the captain of the helicopter and commander of the squadron, Captain Shahak Sela who was the copilot and Captain Eran Garbiyah, the Navy's Helicopter Patrol Officer. The body of Captain Shahak was found in the searches carried out already that night. Four months later, in January 1997, the body of Lieutenant Colonel Becher was found. The body of Captain Garbiyah was never found (Wikipedia).

2 Udi Etzion (July 5, 2020), The helicopters from the US will be delayed; there will be a cost overrun in the millions, *Calcalist*. [Hebrew]

supplier who would actually do the development and the Ministry of Defense, by means of MAPAT (abbreviation in Hebrew for the Authority for the Development of Weapons and Technological Infrastructure), which would provide support for the project.³ The IAI established a development group of about 30 engineers led by Shmuel Arbel, the Director of Development. The project was supported by MAPAT, and liaison officers were assigned to it from the Air Force and in particular from the Navy, since the developers were unfamiliar with the naval theater and its unique characteristics.

As part of the feasibility study, various options were examined – kits to self-assemble miniature helicopters; a search for a small manned helicopter that can land on the Navy's small ships with the goal of converting it into an unmanned helicopter; and the consideration of, among others, the Schweizer model 330 helicopter made in Switzerland. At that time, there were unmanned helicopter solutions offered by Schiebel, an Austrian company but these were small and did not have the ability to carry a large load and remain in the air for an extended period of time, as required by the Navy. The manned helicopters that were in the service of the Air force at the time (SAIFAN, ANAFA, and LAHATUT) did not have the ability to remain aloft for the time required by the Navy either. MAPAT and the Navy also carried out a search for a helicopter with a long-distance remote navigation and control system and found a potential candidate in the American DASH which was in use in the 1960s. After carrying out a number of investigations, the option based on the American unmanned helicopter manufactured by Gyrodyne was chosen. This vehicle was in active service with the US Navy during the 1960s and in the Vietnam War. It had a double coaxial rotor system, which eliminates the need for a tail rotor, thus saving valuable space. An agreement for sharing of knowledge was signed and it included an American export license. Peter Papadakos, the owner of Gyrodyne, worked closely with his Israeli counterparts, and provided the drawings and documents needed to produce the systems in Israel. The mechanical system had the following specifications, which met the Navy's operational requirements: maximal liftoff weight of 1,100 kilograms, of which cargo and fuel would be 600 kg; maximal speed of 100 knots; and time in the air of about six hours.

At the end, three units were purchased – two were used as prototypes and a third for spare parts. They were delivered to RAMTA in Jerusalem, IAI's helicopter maintenance facility. This process made use of the innovation of a different navy;

3 MAPAT is responsible for research into innovative capabilities and also supports the development of projects initiated by the various corps that involve development and acquisition. The support is in the form of both budgets and professional consultation.

essentially, the Israeli navy had acquired an unmanned helicopter that was in use in the US Navy⁴ and continued to develop it and modify it to its own needs.

The Gyrodyne QH-50 DASH

The American destroyers in World War II were equipped with advanced sonar which kept them relevant in the battlefield of the Cold War, primarily in the context of anti-submarine warfare. However, they suffered from a problem of insufficient space with respect to the ability to land helicopters on their decks. The US Navy therefore sought a small unmanned helicopter for these missions. The program began under the command of Admiral Burke in the late 1950s. At the time, the U.S. Navy had the ability to detect enemy submarines from a much greater distance than the range of their torpedoes. Therefore, tactics were developed that included early detection by the destroyer's sonar and then guiding an unmanned helicopter, armed with one or two torpedoes to the target. The unmanned helicopter could get to within a range that allowed for the firing of a torpedo and the destruction of a distant enemy.

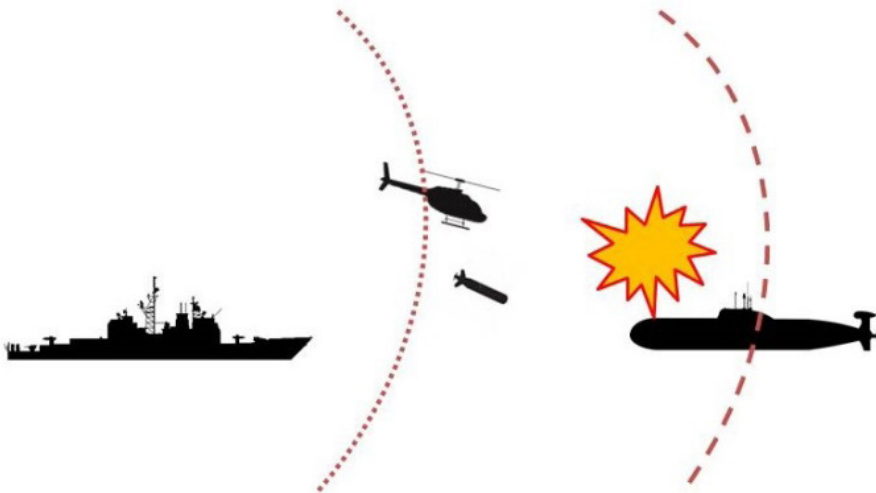


Figure 1: Tactics for use of a DASH unmanned helicopter against submarines

The maiden flight of the DASH helicopter took place in January 1960 and was jointly planned by the US Navy and the Gyrodyne company. In 1962, it was first deployed operationally on naval vessels. The plan included takeoff and landing by means of a remote operator on the deck and later control was to be transferred to the ship's command and control center.

4 The Americans during this period used the remaining helicopters as missile practice targets.

An additional model, called the SNOOPY, which was equipped with a camera that broadcasts a picture in real time back to the mother ship, went into service in January 1965. It provided information on the accuracy of fire from the ship's 5-inch guns. An officer serving on a destroyer came up with the idea, which he saw as enhancing the destroyer's firepower. The use of this model in the Vietnam War was considered to be a success, and this was essentially the first time that use was made of an unmanned aerial vehicle for intelligence purposes.

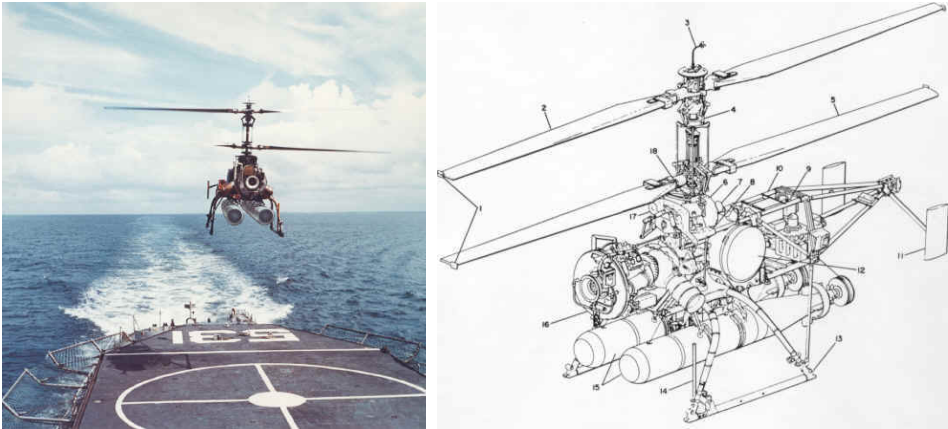


Figure 2: A DASH helicopter carrying a pair of torpedoes on an American destroyer (Gyrodyne.com)



Figure 3: A SNOOPY helicopter equipped with a camera and a transmission device (Gyrodyne.com)

Unmanned helicopters were in use during the 1960s and in the Vietnam War. Up until 1970, 750 units had been produced and had flown hundreds of missions. Their production was halted in that year. The data show that about one-half of them were lost while in service. Both the successes and failures were of great benefit to the advancement and development of unmanned helicopters.⁵

The development process in Israel

The development process in Israel began in 1988. At the IAI, the unmanned helicopter was given the name HellStar. The Navy chose the name MITNOSES for the project. There were several reasons for the choice of the American unmanned helicopter as the basis for the Israeli development project: First, it avoided the need to plan a new design, which saved development time through the use of an off-the-shelf item. Second, the design was based on an existing unmanned helicopter that had already proven itself in various missions (as in the case of the development of the 'GABRIEL' missile which was based on the already existing 'LUZ' missile).

The development process can be divided into two parts from the point of view of technological complexity. The first included an upgrade of the unmanned helicopter based on the existing American mechanics. This meant using the dynamic system and rotors of the existing unmanned helicopter and adding to them the avionics and electronics of leading Israeli systems. Also added was the designated equipment that the unmanned helicopter would carry, including maritime radar, day and night vision devices, communication components and other detection and weapons systems developed in Israel. The technological challenge was to provide high-capability systems on the one hand but not to exceed the maximal weight of the designated equipment, which would directly affect the helicopter's performance with respect to maximal time in the air, on the other hand. At that time, some experience had been accumulated in Israel with unmanned vehicles and components of this type were already to be found in various configurations. This part of the development process is complicated and also included known components that had been planned on paper, but never built by the IAI. Therefore, there was a need for a major modification followed by several more cycles on a smaller scale; this process would involve two or three cycles of development. The complexity of the development process was ranked as "2" on the Bonen Scale.⁶

5 Benjamin Armstrong (2013), Unmanned naval warfare: retrospect and prospect, *Armed Forces Journal*.

6 The Bonen Scale is a method for planning and tracking a development process. It was invented by Dr. Zeev Bonen, former CEO of Raphael Industries. "Raphael: from Laboratory to System", Dr. Zeev Bonen and Dan Arkin. *NDD Media* 2003, p. 126. [Hebrew]



Figure 4: The MITNOSES (generously provided by Leor Margolin)

The second part, from the viewpoint of technological complexity, included capabilities that were lacking in the original system, which were not available from the defense industry in Israel and furthermore were technologically complex on their own at that time. The development of automatic takeoff and landing ability essentially involves the development of a digital automatic pilot for the helicopter, which was developed in Israel for the first time and was among the first to be developed in the world. To this end, thousands of digital simulations of a landing on a corvette were carried out on a small landing pad under various sea conditions, including a ship being rocked randomly and travelling at various speeds. In addition, the process required the development of a device for the automatic anchoring of the unmanned helicopter on the ship after landing.⁷ Automatic landing of an aerial vehicle on a ship out at sea constitutes a complex engineering problem involving a moving platform (the helicopter's three degrees of freedom opposite the ship's three degrees of freedom). The need for an automatic takeoff and landing system, which had never been developed in Israel and only to a limited extent abroad, increased the complexity of the project to a ranking of "3" on the Bonen Scale. Even if there is an existence theorem for the suggested solution, it is not always chosen as the correct solution and therefore there are a number of development iterations that include unsuccessful solutions and another approximately three iterations until the final solution is achieved.

7 There was a need for changes in the ship that would enable the deployment of the helicopter. These included a telescopic hangar system and an elevator. To this end, contact was made with a Canadian company called Indal, which specializes in anchoring and conveyance of helicopters on board ships.

The trial stage and the termination of the project

The first test flight was in June 1990, and in total there were 13 of them. In some of them, the unmanned helicopter was tied to the ground and it took off up to a certain height and then landed. In addition, there was a test of running the engine on the deck of a ship at sea.

In one of the tests, a flaw was revealed in the gyro system and the helicopter was damaged during a "heavy" landing. There are those who believe that this failure led to the decision by the Navy to cancel the project in 1992. Members of the IAI claim that the project was cancelled due to a lack of financing since the Navy found it difficult to fund its share of the development costs. In the end, the MITNOSES project was canceled in early 1992 and since then the Navy has used only manned helicopters in its various missions.

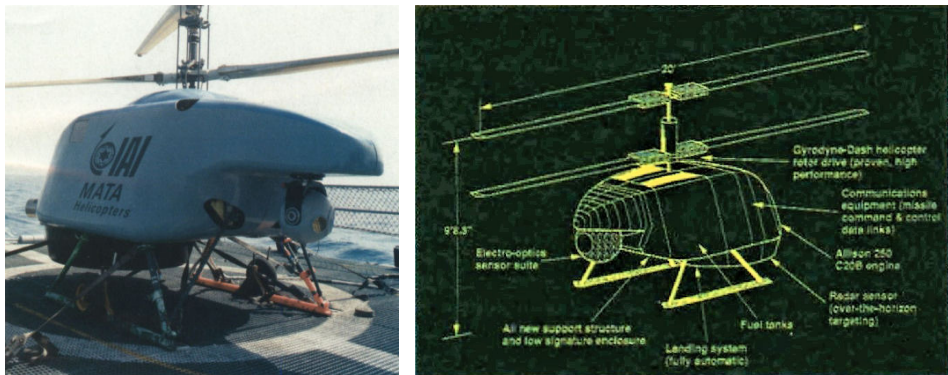


Figure 5: On the right is a test of the unmanned helicopter on a Navy ship. On the left is a drawing of the MITNOSES (generously provided by Shmuel Arbel)

An analysis of innovation

Israel's MITNOSES project and its "father", the American DASH were innovative in several aspects. First, **innovation in time**: The American unmanned helicopter was developed in the 1950s when helicopters and their use in combat was in its early stages. Late in World War II, the first use was made of helicopters for military purposes. The widespread use of the military helicopter came later and reached a peak during the Vietnam War in the 1960s. During that war, the helicopters served as a primary platform in all aspects of the fighting. The development of an unmanned helicopter during that period was certainly considered to be innovative. It is worth

mentioning, for purposes of comparison, that the use of unmanned aerial vehicles became widespread only after decades of using planes for various purposes.

Another aspect of innovation is **technological innovation** and the use of applied science to these projects. The unmanned helicopter being discussed here was the first unmanned vehicle in use during the very early stages. The ability to remotely operate a vehicle with this level of mechanical complexity was very advanced for that period. In addition to the remote control technology, it also involved the mechanical component of a double rotor, which has numerous advantages. One of them is the relatively small dimensions of the helicopter since there is no need for a tail rotor for stabilization – a major advantage when operating from ships. Another is that a (coaxial) double rotor provides higher levels of speed and agility.

The helicopter also provides **doctrinal innovation**, which is manifested in anti-submarine warfare tactics. These tactics answer an operational need by exploiting the advantages of existing sonar and solving the problem of the torpedo's short range at that time. The American unmanned helicopter was the link that made it possible to destroy distant enemy submarines. The Israeli navy had experience in the adoption of an innovative approach to naval warfare that employs detection by means of radar on the aerial vehicle, without exposing the location of the mother ship. In addition to this type of vehicle, the ability had been achieved to assist in the guidance of over-the-horizon missiles and to carry out battle damage assessment (BDA) without endangering human life.

The idea of independently operating an unmanned helicopter in the Navy was a manifestation of **organizational innovation**. The innovation in operating an independent aerial vehicle eliminated the need for a mechanism to integrate the Air Force in naval operations. The relations between the Navy and the Air Force are complex. In Israel, the development of independent air power for the Navy, as it exists in the larger navies, is not feasible from a budgetary point of view. Currently, the naval helicopters are maintained by the Air Force and its crew members are Air Force pilots. This has advantages with respect to the quality of training, the skill level and the abundance of experience. Additionally, the squadron that operates these helicopters is dedicated to the needs of naval missions. However, there are also disadvantages of the current format. One is the need to coordinate the operation of the helicopters with the Air Force, which limits operational independence, and this mechanism involves an operational cost in wartime.⁸ The second is that operation

8 The operation of land-based unmanned aerial vehicles for maritime patrols (as part of the Maritime Patrol Branch of the Navy) also involves a level of coordination with the Air Force.

of a manned helicopter from a ship requires that attention be devoted to the risk to the pilots and this becomes a burden on the crew of the ship. According to one of the individuals interviewed for this article, the ship becomes encumbered by the helicopter to some extent. Furthermore, the Navy proposed that the operators on the ship who have the responsibility for operating the 'GABRIEL' missiles in the early stages of launch would be trained to operate the unmanned helicopter since they have the required skill for remote operation of that type.

The military use of innovation

The Israeli unmanned helicopter was meant to meet the following operational needs: 1) the use of radar and other sensors for the detection of targets without giving away the location of the mother ship; 2) in the case that the unmanned helicopter is detected, there is no danger to human life; and 3) the operation of aerial vehicles under direct control of the ship's commander without the need for coordination with the Air Force that limits control capabilities in combat. There is potential for using unmanned helicopters in maritime missions of various kinds: participation in naval combat – detection and identification of vessels for the Navy's corvettes; guidance of the Navy's ships to over-the-horizon targets; anti-submarine warfare; maritime search and rescue; air-sea transportation; participation in aerial-maritime patrol activities; etc.

The reasons for the failure of the MITNOSES

The interviews I held on the topic of the MITNOSES episode in the Navy left a feeling of missed opportunity. The evidence points to a major potential for the program, which was nonetheless cancelled. I will present some of the main factors involved that are related to innovation:

1. **Technological maturity:** Unlike the American project which was developed during the 1960s, the Israeli project was evaluated during the 1980s. This is an important point with respect to the claim of technological maturity and the question of innovation that was ahead of its time. In the American case, these claims had a foundation, as was discussed above. But the Israeli case was quite a few years later, during which the technology had advanced to a much higher level. However, there were two technological requirements that constituted obstacles in the development work. The first was the equipment load carried by the helicopter, which includes maritime radar and night and day vision devices, which had to be under the maximal weight threshold in order not to harm the performance metrics of the helicopter and in order to meet the Navy's condition for minimal time in the air. The second requirement was that it have

an automatic takeoff and landing system, rather than being controlled by an external operator. A digital automatic pilot was a relatively complex matter in those days and required a long and complicated development process, which had not been done previously in Israel. On one of the first test flights of the system, there was a technical mishap and the helicopter was damaged on landing. There are those who view this incident as the catalyst for the termination of the project. Furthermore, there is a not insignificant amount of risk in operating an automatic pilot system of this sort out at sea. Landing on a ship out at sea without human involvement increases the risk to the ship and its crew, although I have heard varying opinions with regard to the need for this capability. As mentioned above, the takeoff and landing of the Americans' unmanned helicopters was by means of a human operator. However, the decision makers in the IAI and in the army had concluded that this is the only option. One can speculate that this capability made the project more complex and required innovation that was ahead of its time. From the Navy's perspective, there were major problems that became clear during the development and in the marginal operational envelope demonstrated by the project.⁹ It is important to mention that for the IAI and MAPAT the problem was not technological but rather budgetary.¹⁰ MAPAT did not identify a technological lag that justified its intervention in the technological process; neither did it continue with the development of remote control technology since at that time there were no customers other than the IDF.¹¹ The approach that MAPAT adopted and continues to adopt is that any manned vehicle can be replaced an unmanned vehicle.¹²

2. **Budget and financing:** The budget that was made available for the development of the system did not match its complexity. The Navy found a creative solution through assistance in financing from a foreign country, which led to its interest in the potential of this project. That country was ready to invest the lion's share of the project's cost, but at the same time this made the process of determining the specifications more difficult and it tried to reduce development costs. From time to time, there was tension against this background between the IAI,

9 Interview with Brigadier General (ret.) Alex Eyal who was the Head of the Weapons Department during that period and who recommended the termination of the project.

10 Shmuel Arbel stated that despite the technological challenge it was possible to arrive at a solution if sufficient budget had been allocated. Indeed, during the years following the termination of the project, a number of unmanned helicopters of this type were developed by the IAI and other industries in Israel, some of them in cooperation with foreign companies.

11 Interview with Yair Gilboa who was the Head of the Air and Propulsion Branch at MAPAT during the years in which the project was developed.

12 Interview with Aryeh Tsur, supporting engineering at MAPAT.

the Navy and that country's navy. It is worth mentioning that although many projects that have been developed in the defense sector have suffered to some extent from under-budgeting, in this case there was a solution in the form of a third party. It is also worth mentioning that unlike the unmanned aerial vehicles used by the Air Force or by the Intelligence Corps, which are bought in relatively large numbers, the Navy is a small customer which orders a limited number of systems (in total there was two Hohit ships that can carry a helicopter in addition to three Saar 5 ships that was planned to arrive in the future).¹³ There is also a potential for exporting the system and there is an interested customer. At the end of the day, the development was allocated financing from the IAI and the Navy. However, the attempt to persuade the foreign customer failed. The Navy decided to cancel its financing in view of the difficulties in development, the need for additional budget and the additional time needed for development.¹⁴

3. **Disagreement within the Navy:** During those years, the debate over the optimal size of the ships that the Navy should acquire was at its peak.¹⁵ The "large vessel" approach, which supported the acquisition of the SAAR 5 model, won the argument in the end, which also had an effect on the MITNOSES project. This is because the SAAR 5 ships can carry large manned helicopters and it may that there were decision makers who viewed the unmanned helicopter as a kind of threat to the option of acquiring large ships.
4. **Lack of maturity in the Navy for this type of project:** The interviews with professionals in MAPAT and in industry identified a number of problems in the Navy with regard to this project. First, there was a problem convincing the senior echelon in the Navy that this is an essential project and accordingly that the financial investment was necessary. Second, the Navy did not have a fully crystalized operational strategy with regard to the operation of unmanned vehicles from the decks of its corvettes. Third, there was a conceptual difficulty in accepting the risk of landing unmanned vehicles on a ship out at sea. Finally, there was an impression that the dimensions of this project were beyond the capabilities of the Israeli Navy.

13 The 3 Israeli corvettes (SAAR 5 model) entered operational force between 1993-1995

14 Shimon Eckhoz, the CEO of RAMTA at that time, recounted that from the moment that the Navy halted the financing of its portion of the development, there was no possibility for the IAI to finance the project independently.

15 There were two schools of thought in the Navy. According to the first, it was preferable to acquire large ships with a long range at the expense of speed and also of quantity (since they are more expensive). The second supported the acquisition of a large number of small and fast ships.

5. **Conservative attitudes and opposition in the Air Force:** The approach toward the operation of unmanned aerial vehicles underwent a major transition. In the early 1990s, the Air Force operated a number of types of unmanned aerial vehicles, but its attitude to this issue was complicated since it viewed unmanned aerial vehicles as a threat to the use of the Air Force's pilots and the faith in manned planes. It is worth considering whether that approach—which no longer exists—was indeed the reason for terminating the unmanned helicopter project during that period. Furthermore, account should be taken of the fact that the Air Force naturally opposed any aerial solution that was not under its authority. A figure who was involved in this matter stated that from the viewpoint of the Air Force, "Anything that flies should belong to it" and that that is at the root of its opposition to such projects.

Opinions are divided as to the reasons that led to the failure of the project in Israel. The various entities involved in the project present different reasons and emphasize different obstacles. A fact that no one disagrees with is that even after 30 years there is still no unmanned helicopter on the Navy's corvettes and that investment is still channeled primarily to manned helicopters, namely the American Seahawks which are planned to replace the current 'ATALEF' helicopters.

Conclusion

The MITNOSES project described here involved innovation of various types: innovation in time both in the American context of development in the 1950s and in the Israeli context of the 1980s; doctrinal innovation in anti-submarine warfare and naval warfare; technological innovation and the use of applied science in double-rotor mechanics and the remote operation of unmanned vehicles; an attempt at organizational innovation by the Navy involving the independent operation of aerial vehicles; and the acquisition of innovation from the post-modern US navy.

The reasons for the failure in the US during the 1960s can be explained by the lack of technological maturity. But in the context of Israel at the end of the 1980s and the beginning of the 1990s this claim needs to be examined carefully. The developmental considerations included the choice of an existing system in order to save costs and time and then to upgrade it according to the Navy's requirements. The problem of the weight of the helicopter's equipment load to the point that the unmanned helicopter could not stay in the air for a sufficient amount of time is unclear, since the defense industry already had experience during that period in developing various systems for unmanned aerial vehicles. It can be hypothesized

that the requirement for an automatic landing system was ahead of its time and created a technological obstacle for the project. It may be that with a larger budget it might have been possible to overcome this obstacle; however, other considerations, namely conservative attitudes and tensions within the Navy and between the Navy and the Air Force, contributed to some extent to the termination of the project.

The Navy faces a complex reality, particularly in the Eastern Mediterranean. The Eastern Mediterranean is dense with the vessels of various navies, both those of the Middle Eastern states and those of the superpowers. New challenges have been added to the Navy's traditional challenge of protecting the coasts of Israel, including protection of maritime strategic assets, and in particular the various energy facilities. Considering all of the above, the question arises as to whether the Navy is optimally prepared for the various threats, some of which are asymmetric. Unmanned aerial vehicles are used on a large scale by the Air Force today and also in the maritime context; however, the issue of tactical unmanned helicopters and its potential raise the question of whether there isn't a major lost opportunity in this case.¹⁶ Imagine a small, fast and unmanned helicopter, armed with sophisticated sensors and other equipment, that is permanently stationed on a ship and can be fully and independently controlled by its immediate commander, without the need for coordination with others, and which can serve as part of the intelligence and operational network in wartime, whether in defensive or offensive combat...

16 And in particular against the background of the naval helicopter accident in 1996 which also led to the shift to unmanned aerial vehicles.

Section Four: Society, Economy, Energy and Environment

Oceans, seas and coastal areas constitute a combined and essential component of the earth's ecosystem and are of the utmost importance for the continued use of essential resources. In recent years, the need for oversight of the continued exploitation of ocean and sea resources has become more acute, even if it seems that by using these resources we may be able to eliminate poverty, to see to continued economic growth, to attain food supply security and to create jobs. Alongside the oversight of the use of these resources, we must prepare to protect the entire spectrum of the maritime environment including getting ready for the climate changes we have been witnessed in recent years.

2020 gives every indication of being the year in which the issue of climate change moves from the political periphery to the political mainstream. In 2020, the increased focus on this subject led to clashes between activists, governments and businesses. Whereas climate change still represents the largest physical and existential threat menacing humanity, immediate handling of it will, most likely, be postponed because of the pandemic and its heavy economic and social impact. On the one hand, this is the good news for the fight against climate change, which reached its climax in 2020, while on the other hand, this is still bad news for the actions that must be taken to deal with the results of climate change in the near future.¹

To date, global climate change has been studied as a topic on its own. A recent scientific study conducted by Germond and Wa Ha, found that even though climate change and maritime security have top priority today on states' national and international agendas as well as for international organizations, the mutual influences between the two areas has yet to be investigated, by academic researchers or by applied research conducted by practitioners in the area. The study's authors note that their research is the first one to indicate the possibility that a link exists between climate change and other social phenomena such as increased maritime criminality. Likewise, they point out that links were also found between climate change and migration, and migration and maritime security, which may indicate an indirect association between climate change and maritime security. Their paper summarizes the implications of these hypotheses, both for academic research and for practical research, which can contribute to understanding the link between the effects of climate change on natural and human systems and aspects of maritime security better.²

1 Ian Bremmer, Top Geopolitical Risks in 2020: Coronavirus Update, *Time.com*, March 21, 2020. <https://time.com/5807597/top-geopolitical-risks-in-2020-coronavirus-update>

2 Basil Germond & Fong Wa Ha, Climate change and maritime security narrative: the case of the international maritime organization, *Journal of Environmental Studies and Sciences* volume 9, pages1–12 (2019). <https://doi.org/10.1007/s13412-018-0509-2>

The rise in sea levels: In the chapter in this report dealing with new sea lanes, the possibility of opening new routes through the Arctic Ocean as a result of the thawing of ice bergs was noted. The greenhouse gas effect, thus, also directly affects the rise in sea levels, which phenomenon carries within it more than a few dangers. In 2019, the global sea level was 87.61 mm above the average, recorded in 1993. This is an increase of 6.1 mm compared to 2018 (see Figure 1). The accelerated rate of increase has led to flooding of many places along the US coast and coastal flooding today occurs at a much higher frequency than 50 years ago. Even if the world lowers the rate at which greenhouse gases are released into the atmosphere, it is reasonable to assume that the global sea level will rise at least 0.3 meters above the levels of 2000 to 2100.

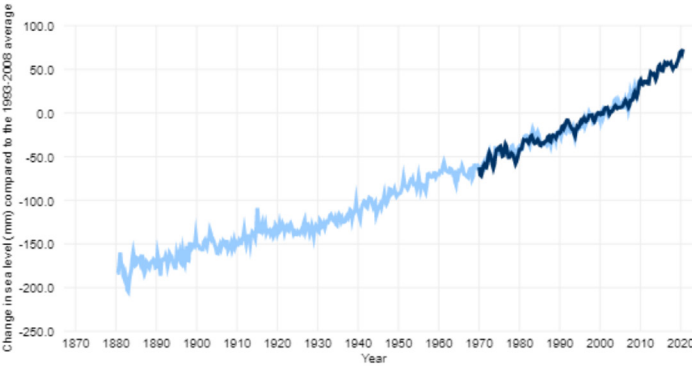


Figure 1: The change in the sea level since 1880³

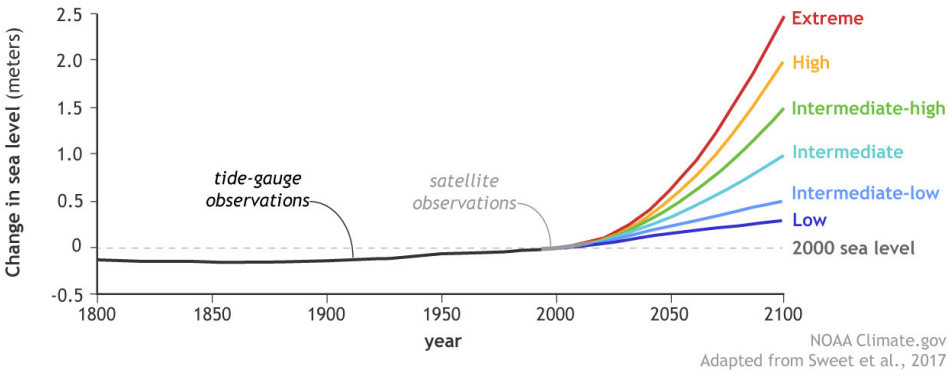


Figure 2: Changes in sea levels under different scenarios of greenhouse gas release levels

3 Rebecca Lindsey, Climate Change: Global Sea Level, NOAA, August 14, 2020, <https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level>

The shipping sector, which has developed in the past few decades as a result of globalization, contributes directly to some of the damage and harm being inflicted on Earth, starting from the impact of the emissions from the fuels the industry uses on their ships, their cargo and in a certain way, because of accidents, spills, etc., which pollute the ocean, through to underwater noise that the ships create that affects marine life. As a result, the International Maritime Organization (IMO) has tried to establish new standards, to tighten oversight and compliance, and to reduce these effects. Exactly as laid out in the Safety of Life at Sea (SOLAS) Convention that obligated the shipping sector to meet standards for safeguarding life at sea, so too the Marine Pollution (MARPOL) Convention is intended to protect the marine environment from diverse types of pollution caused by ships.

The MARPOL Convention has six appendices or annexes that include standards for preventing pollution by oil (1983), by noxious liquid substances in bulk (1987), by harmful substances carried in packaged form (1992), by sewage from ships (2003), by garbage from ships (1988), and by air pollution by ships (2005). Beginning in 2020, shipping companies will be required to use clean fuel containing less than 0.5% sulfur (also called LSFO – low sulfur fuel oil) – fuel that is more expensive than that in use today; otherwise, they must install scrubbers on their ships. The cost of installing scrubbers on the ships to remove sulfur from emissions is estimated at between 5 to 10 million dollars per ship.

The Regional Seas Conventions and the three-year Action Plans are intended to serve these objectives by deepening the involvement of signatory states, through appropriate national legislation and adoption of appropriate control and compliance mechanisms. The 2017–2020 action plan was formulated and approved by 143 member states in 13 different areas around the world. Israel is a signatory of the Barcelona Convention for Protection of the Marine Environment and the Coastal Region of the Mediterranean, including the six main Regional Activity Centers (RACs).⁴

The convention covers the following areas: Prevention of pollution of the Mediterranean Sea by oil and chemicals and their control; sustainable management of marine and land resources in combination with socioeconomic subjects; prevention of coastal and marine pollution from land sources and from activities exploiting the seabed's natural resources; monitoring the maritime environment; monitoring and

4 UN Environment (2016) Regional Seas Strategic Directions (2017-2020), Regional Seas Studies Series No.201. <https://wedocs.unep.org/bitstream/handle/20.500.11822/31229/RSSD2017-2020.pdf?sequence=1&isAllowed=y>

protecting the range of species; integrative management according to the principles of advanced environmental management of coastal zones; protecting the heritage, the animal life and the landscape of the maritime environment; and promoting the quality of life of residents in the Mediterranean Sea basin.⁵

At this stage, it appears that the main focus is on establishing an action plan for tracking and monitoring in order to close the existing information gaps. Regarding the eastern Mediterranean Sea region, the lack of data from the states of North Africa, of which Libya is a failed state, or Lebanon and Syria that are in a similar governmental situation, makes it difficult to conduct tracking, monitoring and handling of the existing problems.

5 See the website of the Ministry of the Environment, the Barcelona Convention Protocols. https://www.gov.il/he/departments/guides/barcelona_convevtion_mediterranean_marine_and_coast?chapterIndex=3 [Accessed October 1, 2020]

Oceans and Pandemics: Lessons to learn to address Climate Change

Nitin Agarwala*, **Semion Polinov**

Introduction

Oceans that provide global mobility to trade and humans have been responsible for the spread of pandemics since ships have moved on the seas. Be it the infamous plague (1347–1352), cholera (1817), yellow fever (1845–1846), typhus (1892), tuberculosis or influenza (1918), they all have spread through ships moving on the oceans. Unlike the earlier episodes, the recent pandemic,¹ COVID-19, has not spread through ships. However, there have been some incidents wherein ships were quarantined or disallowed entry to ports due to COVID-19 cases onboard. As the number of affected nations increased, international borders were closed and lockdowns enforced to prevent a spread that brought businesses to a grinding halt. This notwithstanding, lockdowns provided a unique window of opportunity to scientists and environmentalist alike to study the environmental changes using automated monitoring techniques such as information technology and remote sensing technology. Of these, only a few of studies have focused on the environmental changes in the maritime domain. It is with this understanding that the paper aims to discuss the maritime domains impacted by COVID-19 (GHG and oil pollution, marine litter, fisheries, marine tourism, underwater noise and waste water discharge) to highlight the lessons to learn from the public-health-emergency, COVID-19, to address climate change, a public-health-emergency-in-waiting.

Background

There have been numerous events of climate change on Earth since the Precambrian times². These are all considered *normal* system behavior. However, anthropogenic activities such as burning of fossil fuels (from transportation, energy production),

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- 1 An *epidemic* that has spread over a large area and is prevalent throughout an entire country, continent, or the whole world. Epidemic is the temporary prevalence of a disease affecting many persons at the same time, and spreading from person to person in a locality where the disease is not permanently prevalent and occurs at the level of a region or community.
- 2 The Earth naturally undergoes cyclical climate change which is a significant variation of average weather conditions—say, conditions becoming warmer, wetter, or drier—over several decades or more.

cement manufacture, land use (through agriculture, livestock farming, forestry), and aerosols (such as chlorofluorocarbons [CFCs]) generate greenhouse gas (GHG) emissions that create a deviation from this normal system behavior. To appreciate the anthropogenic contribution to climate change, several scientific studies such as the study of ice-cores and geological samples (Ethedgge et al., 1996; Lüthi et al., 2008; Friedlingstein et al., 2019) and the cumulative impact of different types of anthropogenic stresses³ on various global marine ecosystems types⁴ have been performed (Halpern et al., 2008, 2015, 2015a). Though these studies confirm anthropogenic contribution to climate change, this fact continues to be hotly debated in political circles.

On a similar note, bacteria and virus, considered the basic building blocks of life have been around since life begun on Earth. It is only when humans began to live with plants and animals, bacteria and viruses began to cross over and humanity saw epidemics. As globalization and population growth increase the average global mean surface temperature (GMST) due to anthropogenic activities (Huppert & Sparks, 2006; IPCC, 2018), the habitat of various common disease vectors⁵ is increasing (Reinhold et al., 2018; Ryan et al., 2019) and spreading from the Tropics to colder regions (which are warmer now) to create fresh strains of epidemics (Githeko et al., 2000). These epidemics cause death (at times nearly 80% of a country's population and billions in global figures), alter the lifestyle of people (to contain the spread) and bring shrinkage to the economy (due to slowing/stopping of commercial activities). When recovery happens, individual lives change and the economy recovers (Conis, 2020) but all at the cost of the environment (Delivorias & Scholz, 2020).

This said, if the epidemic is treated as a health-emergency it brings about improvement in living standards as seen with the *Plague*, *Cholera*, and *Typhoid* of the nineteenth century that gave us tapped water in houses, sewage systems, piped gas, electricity, and health and safety standards. However, if the epidemic

- 3 Artisanal fishing, Demersal destructive fishing, Demersal non-destructive high by catch fishing, Demersal non-destructive low by catch fishing, Direct human impact, Inorganic pollution, Invasive species, Light pollution, Nutrient Pollution, Oil rigs, Ocean acidification, Ocean-based pollution, Organic pollution, Palegic-high by catch fishing, Palegic-low by catch fishing, Sea level rise, Sea surface temperature, Shipping and UV.
- 4 Coral reefs, Seagrass, Rocky reefs, Palegic Surface water, Palegic Deep water, Mangroves, Seamounts, Hard Shallow, Soft Shallow, Hard shelf, Hard slope, Hard Deep, Soft Shelf, Soft Slope, Soft Deep, Deep Water, Surface Water, Nearshore ecosystem, Deep ecosystem, Shallow ecosystem.
- 5 Such as the *Aedes aegypti* mosquito, which can spread dengue, chikungunya, Zika, and Yellow fever.

is considered an economic/ financial crisis, it increases global CO₂ emissions and hence deterioration of the environment as seen in Figure 1, due to unsustainable rebounding methods (Agarwala & Polinov, 2020).

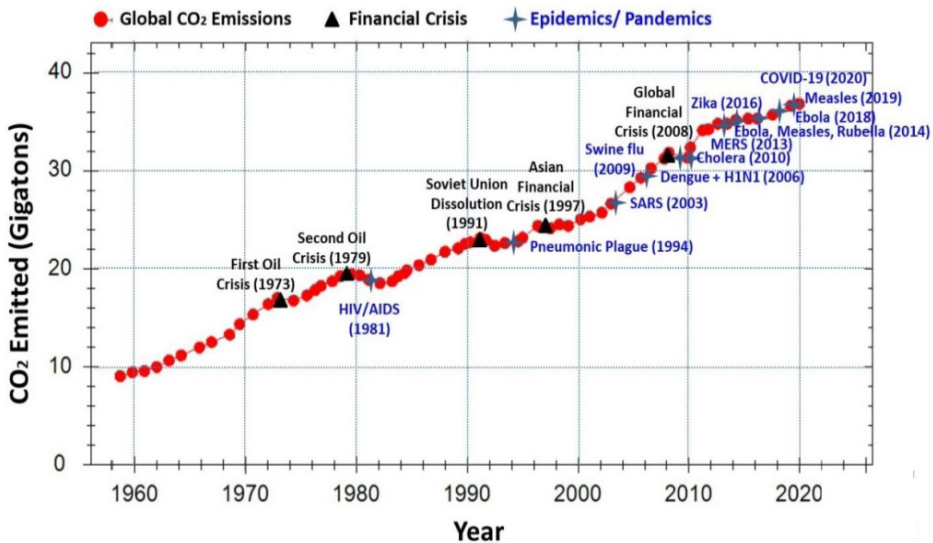


Figure 1: Global fossil CO₂ emissions (in Gigatons of CO₂), with the most important world financial crises and epidemics/ pandemics. (Source: Agarwala & Polinov, 2020)

Another area that is fast becoming a growing cause of concern for the spread of epidemic is 'climate change'. As climate change impact increases, the number of climate refugees⁶ are increasing thereby causing unplanned urbanization, poor sanitation, poor access to clean water, increased transmission of contagious diseases (Bloom et al., 2018) and multiple types of conflicts (Marshall, Hsiang & Edward, 2012). In addition, variations in precipitation⁷ due to climate change (Trenberth, 2011) creates undue stress on the existing sources of clean water causing water-borne epidemics and growth of water-borne vectors (Hunter, 2003). It has also been shown that as ocean currents increase, the number of cholera cases increase (Colwell, 1996; Lipp et al., 2002). If these were not enough, air pollution kills an estimated seven million people globally each year (Seaton et al., 1995; Isaifan, 2020). This effectively means that climate change needs to be categorized as a 'public-health-emergency' as it has the potential to spread several epidemics.

6 *Climate refugees* are people who are forced to leave their home region due to sudden or long-term changes to their local environment. These are changes which compromise their well-being or secure livelihood.

7 High precipitation causes floods and low precipitation causes droughts.

To add to all this, the universal ‘sink’ – the oceans – are shouldering the outcome of events that happen on land. Since both the land and the ocean are interconnected, events such as a landfill, a land based pollution, or deforestation of land all eventually result in a negative impact on the oceans as does the economic slowdown or changed lifestyle as a result of epidemics.

Effect of Lockdown on Oceans

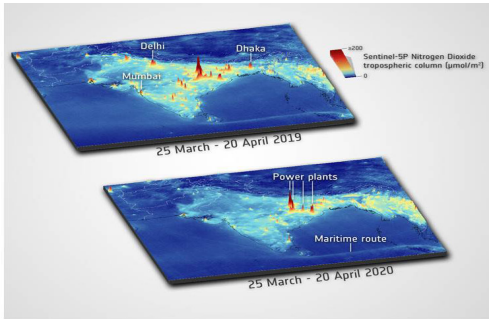
COVID-19 has shown that the Earth has a limited capacity and if these capacities are stretched, nature will reset itself causing mass-extinction as seen many times since the Precambrian times. Accordingly, we will discuss the impact of lockdown on the maritime domain and some lessons to learn to address climate change.

Pollution levels

Of the first few studies related to the marine environment, using space-based imagery, the European Space Agency’s Copernicus Sentinel-5P mission (ESA, 2020) has shown that the shipping lanes have recorded reduced noise and pollution levels (see Figure 2). Similarly, due to reduced tourism and boat traffic in Venice, the waters are clearer and marine life has been sighted (see Figure 2).



Venice – reduced boat traffic leading to clearer waters (seen as lighter colour in the top image of 13 April 20)



Indian Ocean – reduced pollution levels on maritime routes

Figure 2: Water pollution levels – before and after – outbreak of COVID-19 (Source: ESA, 2020)

Ocean noise

The oceans are called as the ‘silent world’ as little is known about the sounds that exist there. The oceans are actually a noisy place with humans greatly adding to this noise by using sonars, seismic surveys, oil drilling, dredging, and the ships’ engines. Such noises cause physical damage, alter behaviour, communication and feeding of marine life resulting in increased whale stranding, killing of zooplankton (McCauley

et al., 2017) and change relationship with other species due to an altered singing frequency. While no map for the ocean noise exists to date, it is known that growing ship traffic has increased sound contribution by nearly 3 dB per decade (or doubled the noise intensity every 10 years on a log scale) between 1950 to 2000 (Jones, 2019). These increased sound levels have led to a highly stressed marine life (Rolland et. al., 2012) that has shown reduced reproduction, reduced caring for offspring and greater chance of being hunted.

Studies (Thomas & Barclay, 2020) made at the NEPTUNE nodes (see Figure 3) show an average reduction of 1.5 dB in year-over-year mean weekly noise power spectral density at 100 Hz, while near the shipping channels off the Port of Vancouver it was 4 to 5 dB due to limited shipping during the lockdown. Similarly, in the Indian Ocean Region (IOR) a reduction of nearly 29 dB was recorded by the Maritime Research Centre in India (HT, 2020). It may be noted that after the 9/11 attacks, noise levels decreased in the Bay of Fundy, Canada by nearly 6 dB in the 20-200 kHz range with a significant reduction below 150 Hz (DOSIT, 2020). Such an acoustic reduction creates a healthy marine ecosystem and a healthier ocean.

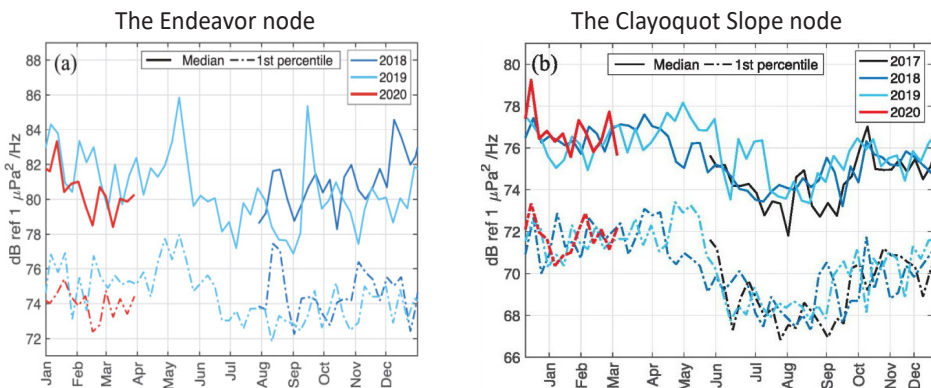


Figure 3: Sound reduction year-over-year at nodes of NEPTUNE observatory (Source: Thomas & Barclay, 2020)

Fisheries

The lockdown has reduced the global fishing hours as seen in Figure 4. Such reduction has helped create 'marine protected areas' thereby increasing the availability of the otherwise overexploited fishes. While the economic impact on fishing community due to unsold catch, lack of transportation and reduced demand have impacted the industry, such MPAs have rejuvenated the ocean space. This would help maintain long-term productivity of fisheries, an area greatly affected by overfishing (Stewart

& Wentworth, 2019) and ensure that current fishing trends of 34% below the biologically sustainable levels (FAO, 2020) can be reversed.

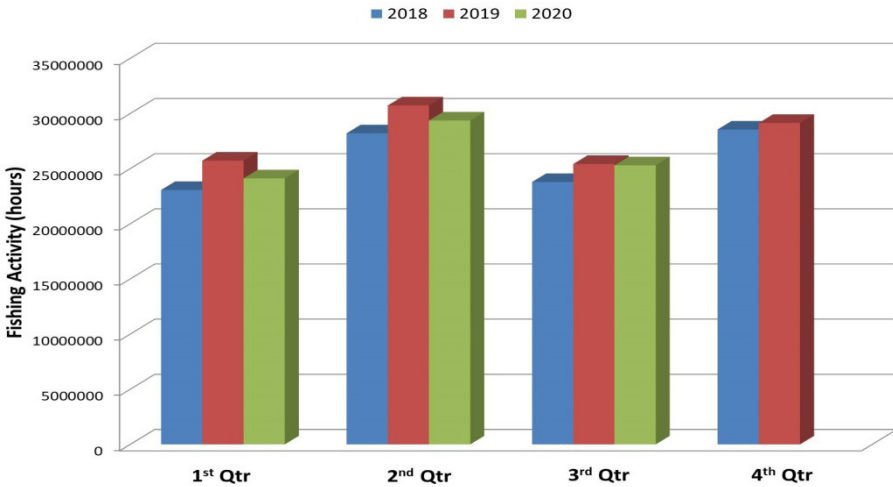


Figure 4: Global Fishing Activity from 2018 to 2020 (Source: Authors; Data from Global Fishing Watch)

Marine tourism

The lockdown has given the nature an opportunity to recover after being exploited by marine tourism with cleaner beaches and waters, lesser litter and increased sea animal sighting due to reduced noise from tourists (Ormaza-González et. al., 2020) in many marine tourist destinations across the globe, including Venice as seen in Figure 1. In addition, lesser fishing activities have contributed to healthier and cleaner beaches.

Marine litter and waste water discharge

It is not that on every front, COVID-19 has shown positives for the health of the ocean. For marine litter and waste water management, the impact has been negative. COVID-19 has increased the quantum of plastic waste reaching the oceans due to increased use of disposable masks and personal protective equipment used to fight the pandemic. The stoppage of recycling activity of the plastic waste during lockdown has compounded and worsened the problem. Similarly, COVID-19 has increased the quantum of polluted water due to frequent washing of hand with soap, which in most cases is being discharged untreated.

Weather related events and epidemics

When weather-related events and epidemics are seen together, one notices that both have a tendency of an increase over the years (Agarwala & Polinov, 2020) as seen in Figure 5. This shows that the occurrence of weather-related events and epidemics are directly related to each other and are a direct reflection of climate change due to anthropogenic factors. Effectively, if the anthropogenic factors are reduced, both epidemic events and weather-related events will reduce.

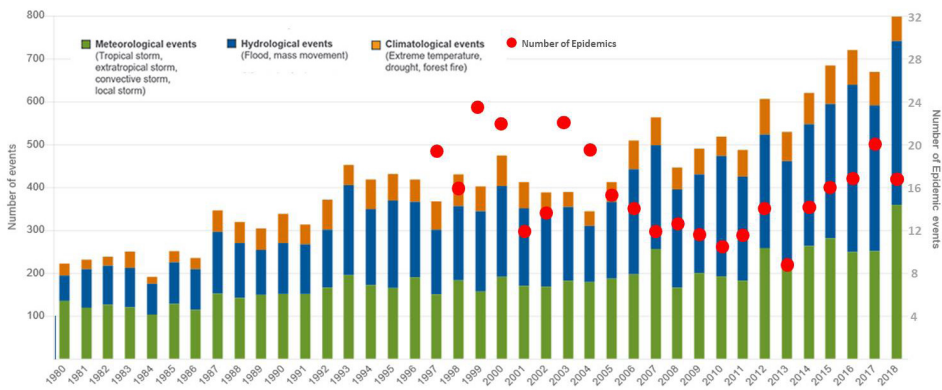


Figure 5: Number of weather-related events worldwide 1980–2018 (Source: Agarwala & Polinov, 2020)

Way Ahead

In the preceding section we have discussed the positive and negative impacts of COVID-19 on the marine environment. While the positive impacts are encouraging, they cannot be considered permanent as once humanity returns to business-as-usual these levels will see new highs due to existing unsustainable procedures for economic recovery. One realises that both epidemics and climate change are here to stay if business-as-usual continues. Since both impact life and economies, they need to be addressed urgently. While pandemics have united the world in finding a cure, climate change is unable to do so. This is primarily due to the varied effects of climate change on different parts of the world and the added cost to resolve the issue with the onus being put on developing and underdeveloped nations. This has disallowed nations to think as one for a solution. Furthermore, since the impact of climate change is hard to see, they are out of the mind and usually ‘not in my term’ resulting in no actionable attention of world leaders.

This said, if overlooked, the damage done may cause serious and irreversible economic and life loss (Kompas, et al., 2018; Doelle and Seck, 2020). With globalized economies, a destroyed economy of a developing nation, as a manufacturing house for the developed nations, will eventually destroy the economy of the developed nations. It is time that the world considers COVID-19 as a wake-up call for overdue actions towards 'climate change'. Eventually, the way ahead will depend entirely on the decision of today that will change our response to future disasters. These decisions need to be based on the lessons learnt from this pandemic to move away from certain destruction. Some of these lessons are:

Lessons Learnt

- (a) A more cautious approach is required when interacting with "Mother Nature" as it is a perfect system that is being upset by humans.
- (b) Scientific data and advice need to be given their due when taking political decisions.
- (c) Nature has the ability to heal itself. This means that nature needs to be exploited sustainably⁸ or else we may force her reboot. Accordingly, the decisions for an exit policy from the present health-emergency must be sustainable ones to help reduce GHG emissions (IPCC, 2013; Oreskes, 2004).
- (d) With 'political will' enormous funds can be mobilized to address any issue, including 'climate change'.
- (e) Humanity needs to adopt planet-healthy work-ethics. During this confinement, offices, research, networking, and the likes were managed efficiently using online meetings and video conferences (Viglione, 2020) so why can't it become the new normal.
- (f) Health emergencies cause economic downsides, job loss and deaths, curtailment of human rights and freedom (Toussaint and Martínez Blanco, 2019), increase the divide between the rich and the poor, and increase marine litter and waste water. These must be avoided.
- (g) Human interaction with the animal kingdom has always been disastrous and has caused anthropogenic stresses such as IUU fishing that causes unsustainable fishing leading to destruction of ocean health and climate change.
- (h) Reduced sale of luxury items are the cause of economic slowdown. They also are a cause of GHG emissions that causes climate change.

8 Such that it meets the needs of the present without compromising the ability of future generations to meet their own needs.

- (j) Today, human life is not a priority or else efforts to control and minimize health emergencies and health-emergencies-in-waiting such as climate change would have been given the required impetus.
- (k) Even after being hit by the pandemic, the human approach to environment is lax and unsustainable. It is essential that impetus is placed on correcting this incorrect approach.

Recommended actions

A healthy planet is one with lesser diseases. While we need to rebuild our economy, however, this needs to be done by investing in 'cleaner and greener' technology paradigms using at least a small portion of the economic bailout package committed by nations for this pandemic bailout and not to give in to pressures of rolling back environmental standards to stimulate the economy. Studies indicate that climate change can cause over 500,000 extra deaths in 2050 from illnesses including cancer, heart disease, and stroke as a result of lack of food alone (Springmann et al., 2016). It is because of this that climate change has been described as the *biggest global health threat* of the 21st century (Costello et al., 2009) and needs to be addressed. Some recommended actions to address climate change for consideration are:

- (a) Sustainability while exploiting flora, fauna and wildlife must be ensured and monitored.
- (b) Scientific data and advice should be given due consideration when making decisions.
- (c) Human intervention to modify nature must be minimized and exercised only in extreme cases.
- (d) Climate change is a public-health-emergency-in-waiting. Political will and unanimity must be created to mobilize both monetary and technological resources to address the anthropogenic causes of climate change.
- (e) Planet-healthy work-ethics must be encouraged and unnecessary travel should be discouraged to reduce GHG emissions.
- (f) Polluting luxury items must be phased out and replaced with greener and cleaner technology items.
- (g) Saving human lives from natural disasters pro-actively should be a priority for governments. Such an approach will help tackle epidemics and climate change better.
- (h) Rebuild the economy by investing in 'cleaner and greener' technologies to reduce anthropogenic causes of climate change.

- (j) Utilise at least a small portion of the economic bailout package for COVID-19 to fight climate change.
- (k) Do not roll back environmental standards to stimulate the economy for recovery.
- (l) The current pandemic should be addressed as a health emergency to bring about environmentally beneficial changes in health and safety standards and achieve the committed goals of the Paris Agreement.
- (m) Marine litter must be checked regularly using technology such as AI (Agarwala, 2020) to ensure a healthier ocean.

Conclusion

The article discusses the maritime domains impacted by COVID-19 to highlight the lessons to learn to address climate change. Accordingly, lessons learnt and some recommendations to address global and long-term climate change issues have been discussed.

One notes that changes due to the forced confinement in the maritime setup have been both positive and negative with regard to the ocean health. This notwithstanding, it is clear that humanity is destroying the ecology and the environment for his personal gain. It is hence important that sustainable means of exploitation are employed or the destruction of the Earth is not far. With climate change being one of the biggest risks and danger looming on humanity, some recommendations have been made to slow down if not roll back the impact of climate change.

Like previous episodes, humans will recover from the present setback. However, this recovery should be on sustainable lines and not by rolling back environmental standards to stimulate the economy. The need exists to evolve new mechanisms to boost the resilience of people and communities (International Federation of Red Cross & Red Crescent Societies, 2004; Broberg, 2019). Though one cannot make predictions, however, the future will be governed by the decisions we make today. The time to act is now. We have been postponing the action against climate change for way too long. We may develop immunity or a vaccine against a virus, but we will never have a vaccine against climate change. For that, we will have to create provisions in the right direction with the know-how we have and the know-how we develop. This will eventually define the future for us Earthlings.

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Impact of climate change and extreme weather events on maritime transport

Semion Polinov

Climate change has a crucial impact on all areas of life, including water, public health, agriculture, energy, biodiversity, coastal infrastructure, economics, natural damage insurance, national security, and human health. In the oceans, the main climate changes are sea level rise and sea surface temperature rise, leading to an increase in the frequency of extreme weather events, all of which affect maritime transport. Emission control regulations will also increase operating costs for the maritime industry but may delay ocean acidification process. On the other hand, melting ice caused by climate change will seasonally turn the Arctic into a sea for navigation and create new shipping routes across the Arctic Sea. Ice melting will also enable the conditions for oil and gas production in the Arctic. Increased ship traffic and offshore oil drilling may lead to pollution of the Arctic ecosystem. Climate change-driven change in agricultural patterns probably will also affect the ship movements due to changes in the agricultural areas and the markets. Different stakeholders of the industry should take the necessary steps for adaptation to be better prepared to meet the new situation. In addition, the maritime sector should forcefully adopt minimum emission practices in order to try to mitigate the impact of the maritime industry on global warming.

Introduction

All people on Earth depend directly or indirectly on the ocean and cryosphere. The oceans cover 71% of the Earth's surface and contains about 97% of the Earth's water. The ocean and cryosphere support unique habitats and are interconnected with other components of the climate system through the global exchange of water, energy, and carbon. Human communities in close connection with coastal environments, small islands, polar areas are particularly exposed to ocean and cryosphere change, such as sea-level rise, extreme sea level, and shrinking cryosphere. Other communities further from the coast are also exposed to changes in the ocean, such as through extreme weather events (IPCC, 2019). There is no doubt that today we live in a period when significant climate changes are taking place, which, among other things, lead to more frequent and more extreme weather events. These changes greatly affect human health, stability at local and regional levels in a wide range (Cheung et al., 2009; Butchart, 2010). Also, the maritime sector, which accounts for 80% of all world trade, is highly dependent on climate change and extreme weather conditions. It follows that some of the most serious future challenges will be in the marine area, but it is unclear to what extent changes in the marine ecosystem will affect political and economic stability as a result of an increase in both extreme weather events and other manifestations of climate change (Marshall, Hsiang and

Edward, 2012). Some recent studies have shown that global ocean temperatures are steadily increasing (Jones et al., 1999; McMichael et al., 2006), extreme climatic events and related disease outbreaks are becoming more frequent, faunas are shifting (Hunter, 2003), and invasive species are spreading (Galil, 2007; Molnar et al., 2008) and this is only a small part of global changes with serious consequences. Moreover, the recent COVID-19 crisis has affected all aspects of everyday life and work, and heavily impacted the global economy (Manzanedo and Manning, 2020). These circumstances appear to have accelerated the implementation of the maritime sustainability agenda with increased awareness (UNCTAD, 2019). This article try to deal with two main question and dilemmas: How does climate change affect the maritime transport and how maritime transport contribute to the climate changes?Climate change and the shipping industry.

It looks like a new norm is being set in the maritime sector, reflecting the modest growth of the global economy and efforts to tackle the impact of the shipping sector on climate change and the opposite (Kontovas, 2020). This important step is the result of the realized understanding of decision-makers that climate change is a serious problem for the marine industries, and humans are making a great contribution to this change (Mitchell et al., 2006). As results of this new realm, the last decades of the maritime industry have been characterized by significant technological and legislation changes to improve ocean ecology condition and minimize human impact on the ocean (Becker et al., 2018; Joung et al., 2020; Zis and Cullinane, 2020). The introduction of new technologies in the maritime sector such as Automatic Identification System (AIS) made which was originally designed to prevent accidents at sea (Bye and Almklov, 2019) has found wide applications to solve environmental problems through the monitoring of shipping activities (Ferraro et al., 2007, 2009; Fiorini, Capata and Bloisi, 2016). Below presented some of the impacts of climate change on maritime transport, in particular on its efficiency and profitability.

By analyzing the relation loop presented in Fig. 1, we can see an overall picture of the impacts of climate change on shipping activities. It is interesting to notice that one climate change phenomenon – ice melting is conducive to a growing maritime industry. All other climatic events like sea surface temperature rise, sea-level rise, and climate change policy or emission control regulations will have negative impacts on shipping activities. Moreover, we can see, if shipping activities increases, offshore and onshore maritime industries also increase. The growth of maritime industries will be decreased with the reduction of shipping activities.

There is significant heterogeneity across the merchant fleet with different ships, fuels, emissions and regulations, thus there is no one-size-fits-all decarbonization solution. The greatest source of GHG emissions within shipping are from container ships, bulk carriers and oil tankers. This is due to these vessels conducting longer journeys to deliver their cargo – international and intercontinental, rather than domestic and coastline routes. The spatial distribution of these emissions is shown in Fig. 2 (right) and covers most of the oceans and seas in the northern hemisphere (Balcombe et al., 2019).

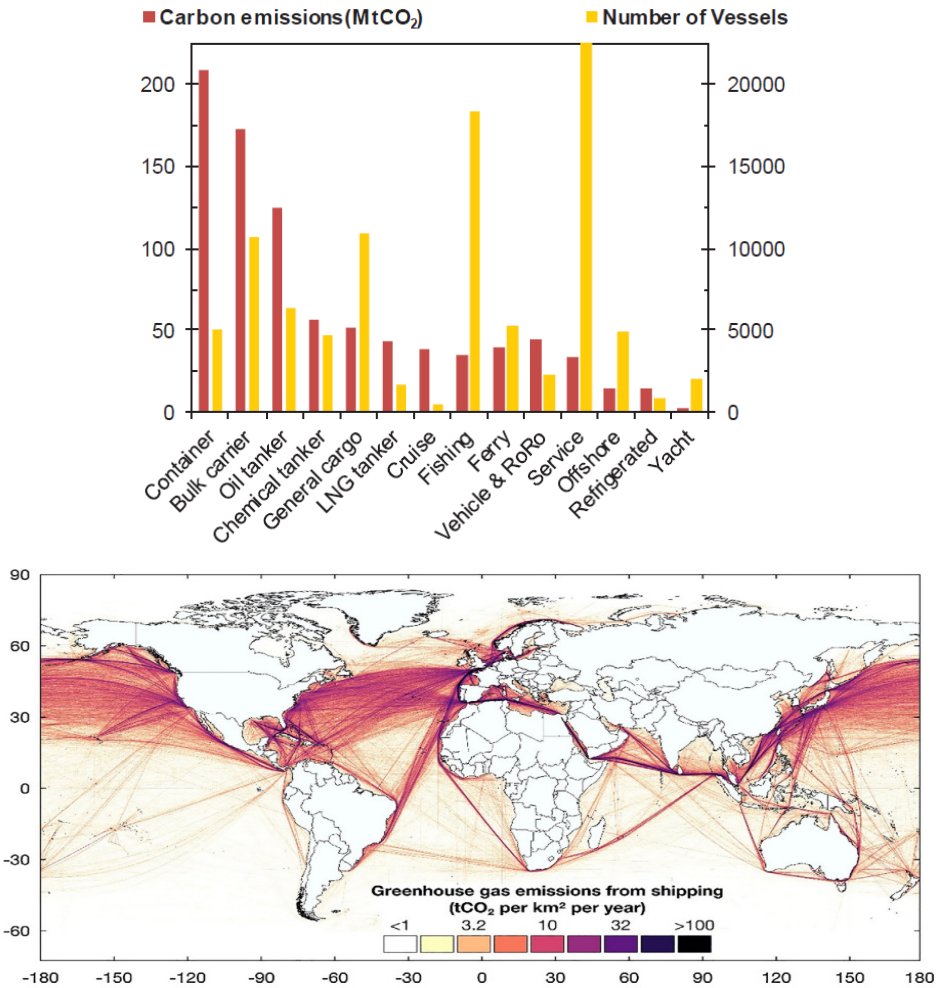


Figure 2: Number of merchant ships and their carbon emissions, by category (Upper image) and Map of the global distribution of greenhouse gas emissions from shipping (Lower image) in 2017 (from Balcombe et al., 2019)

Over the past several decades, significant legislative action has been taken through the International Maritime Organization (IMO) to decarbonize transport to avoid further temperature increases and lower GHGs emissions from shipping (Joung et al., 2020; Kontovas, 2020).

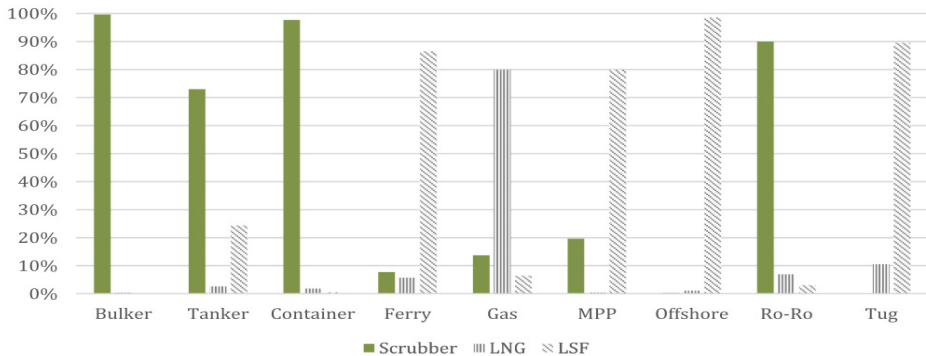


Figure 3: Share of vessels turning to three different compliance methods by fleet type (Li et al., 2020)

However, such policy and legislative measures to tackle the increase in CO₂ and other GHGs remain grossly inadequate (Bows-Larkin, 2015). The second "However" it's the nature of the contribution of the various gases emitted from ships to climate change is complex (Kontovas, 2020). One of the major advances in minimizing the impact of shipping on climate change appears to have been the adoption of the 2020 IMO resolutions to reduce GHGs emissions from ships (especially SO_x²). Although SO_x gases are generally not considered greenhouse gases, they have a cooling effect that plays a role in climate change and negatively impacts human health and the environment (Zis and Cullinane, 2020). With the introduction of the sulfur limitation IMO 2020, shipowners have three main abatement options: (1) switching to low sulfur fuel (LSF); (2) installation of sulfur oxide scrubbers; (3) runs on liquefied natural gas (LNG). In fig. 2 clearly shows significant differences between fleet types depending on how ship operators respond to the new 2020 IMO sulfur limit. Almost all bulk carriers, containers, and Ro-Ros ships are equipped with SO_x scrubbers, while the majority of tugs, and ferries have switched to LSF. Most of the gas vessels are LNG-powered; this is as expected, as are most LPG vehicles such as LNG and liquefied petroleum gas (LPG) (Li et al., 2020). The new IMO 2020 regulation, which should lower the sulfur limit from 3.50 percent to 0.50 percent, is expected to bring significant benefits to human health and minimize human impact on climate change.

2 https://ec.europa.eu/commission/presscorner/detail/en/IP_19_6837

Given the acceleration of climate change due to the elimination of the cooling effect of SO_x emissions, more ambitious carbon reduction targets may be required (Kontovas, 2020).

Impact of extreme weather events on shipping

Various aspects of the maritime industries are becoming increasingly susceptible to extreme weather events, mainly as a result of climate change. Quite obviously that in the present we experience an increase in the numbers of natural disasters a year, resulting in devastating consequences (Knutson et al., 2010). Climate change primarily affects the frequency of extreme weather events such as storms, hurricanes, waves regime, as well as the vulnerability of coastal areas to sea-level rise (Huppert and Sparks, 2006). The catastrophic consequences can only intensify if more effective ways to mitigate the consequences are not found (Mitchell et al., 2006). Extreme weather events are particularly challenging, which can affect simultaneously multiple countries, while the largest events can have global implications (Huppert and Sparks, 2006). Continuous efforts are needed to identify areas at risk and to take action to apply scientific evidence before events occur.

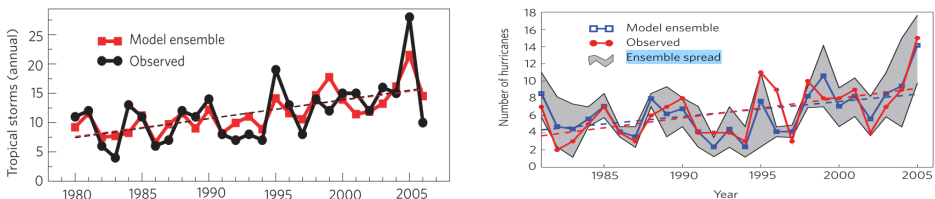


Figure 4: Simulated versus observed Tropical cyclone (left image) and Hurricanes between years 1980–2006 (based on Knutson et al., 2010)

In fig. 3 shows changes in the annual number of tropical cyclones and hurricanes with relatively conflicting results. A manifestation of the ambiguity of the results is fluctuations in the frequency and intensity of tropical cyclones with a large amplitude, which significantly complicates the identification of long-term trends, despite the general trend towards an increase in the number. Future projections based on different theories and models indicate that warming from anthropogenic greenhouse gases will increase the global average tropical cyclone intensity towards more severe storms, with an increase of 2–11% by 2100 (Knutson et al., 2010).

Conclusion

As climate change risks have become increasingly recognized and understood by the scientific community, vulnerable sectors such as shipping, ports, and supply chains

are now beginning to consider implications for both their long-lived infrastructure and the efficiency and resilience of their operations. Here are just some of the major changes and outputs expected to impact business as usual scenario:

1. Increased regulation on maritime transport, such as GHGs emissions (Joung et al., 2020).
2. Increased operating costs and movement of freight (Curtis, 2009).
3. New shipping lanes, mainly Arctic (Wright, 2013).
4. Higher risk of port infrastructure damage (Hanson et al., 2011; Messner et al., 2013)

Future trends and recommendations

- With climate change and its impacts, the marine industry will be affected to a certain extent and the environmental regulation requirements on the industry will grow.
- The maritime sector, which is highly dependent on various effects of climatic changes, must be very interested in minimizing climate impacts, as inaction now will be costly in the future.
- With the increased range, intensity and severity of climate change impacts, existing shipping routes are no longer as safe and easy to navigate as they used to be, new routes need to be planned. Re-routing can be very inconvenient and reduce productivity for both the client and the shipping line because instead of continuing with their normal operations, shipping companies must devote time and financial resources to route planning. For the customer, an increase in delivery time will affect their delivery.
- Autonomous vessels will allow shipowners to more effectively control vessel traffic, reduce fuel consumption and emissions, thereby reducing the contribution of shipping to climate change.
- Work in partnership—climate impacts do not respect borders, working with relevant partners contributes to more effective outcomes; building "regional redundancy" capacity can help damaged ports bounce back from storm events more quickly by accessing resources (e.g., equipment and cargo rerouting) at nearby facilities.

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The Port of Ashdod Prepares for Competition

Moshe (Shiko) Zana

The global shipping industry accounts for more than 80 percent of the global traffic in goods, and it is the main player in the management of the global supply chain. In this context, the ports of Israel handle about 98 percent of Israel’s shipment of freight (in terms of weight) and the Port of Ashdod is the largest and leading port in Israel for dry bulk cargo. From the perspective of shipment of cargo, Israel operates as an ‘island economy’ that is dependent on maritime commerce and as such the importance of the functioning of its ports is critical to the economy. For this reason, the Port of Ashdod (like other ports) is defined in the port regulations as being essential to the State of Israel.

The incorporation of the port in 2005 as part of the reform of the port sector created a basis for business competition between the government port corporations in Haifa and Ashdod and has significantly increased the efficiency of the ports within the Israeli supply chain sphere. The total increase in freight at the Port of Ashdod, and primarily in the number of containers (which account for about 65 percent of the port’s activity), has exceeded the total average long-term growth in freight activity in the State of Israel and this is the direct result of competition between the ports.

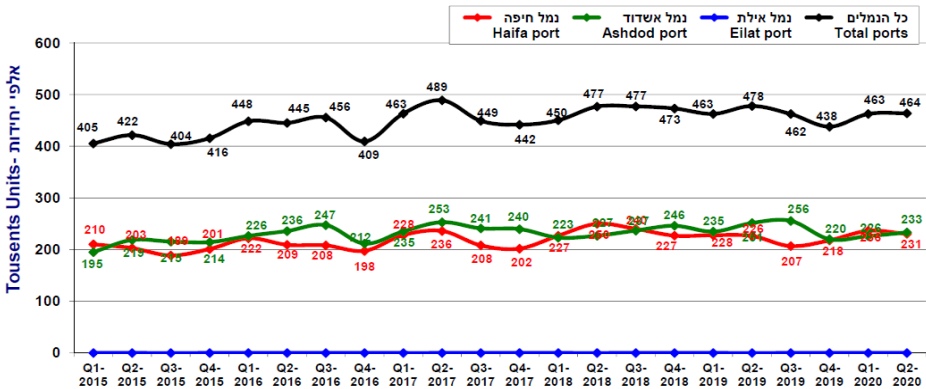


Figure 1: Container traffic in the ports of Israel, 2015–20; data for the Port of Haifa include about 30 percent transshipment

Figure 1 shows that 2015 was the turning point for the Port of Ashdod, which began the ‘era of competition’ with a 35-percent market share of container traffic and increased it to 50 percent and more.¹

1 The Ministry of Transportation – The Shipping and Ports Authority, Economics and Foreign Relations Branch (Table 2.3: Containers in thousands of units – Total traffic in the Israeli ports). (Hebrew)

Another factor that contributed to competition and growth was the reform carried out in the method of pricing calculation, which was implemented in October 2010. This reform, which was a result of Israel's admittance to the OECD, primarily involved the adoption of the "cost plus" method of calculating the price of handling, which replaced the cross-subsidization method. Another direct result of the port reform was greater efficiency, which was focused on increasing revenue, together with the assimilation of innovation in work methods and the accelerated introduction of advanced technologies into the port operations.

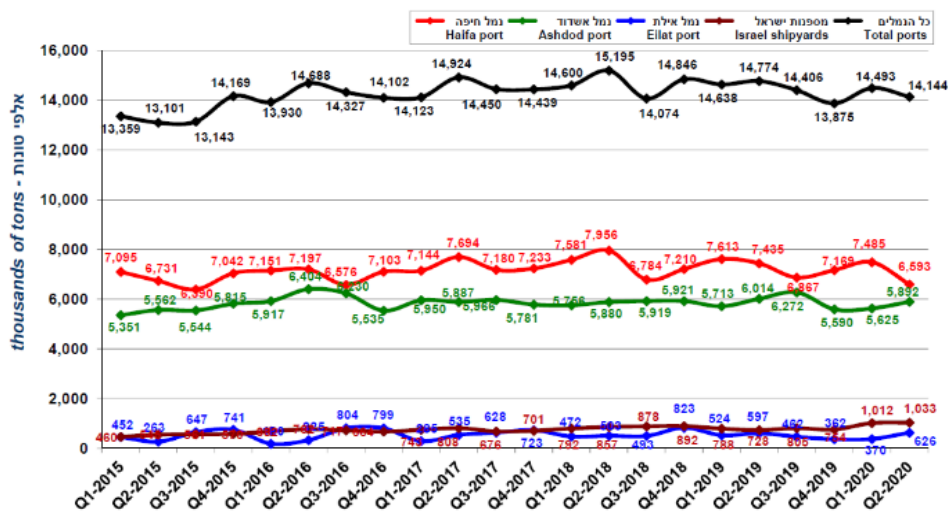


Figure 2: Total freight traffic in the ports of Israel (in thousands of tons), 2015–20²

The golden age of growth in the Port of Ashdod continued uninterrupted for about 12 years but has slowed in the last three. The port essentially reached its maximal capacity in total freight handled and it was not possible to expand the activity on existing piers beyond about 24 million tons annually (containers, general cargo and bulk). There are a variety of reasons, not only to do with infrastructure. They also include labor relations and labor agreements that were not compatible with the pace of change in the demand for the port's services. These and other factors led the government of Israel to decide on the creation of two private and competing ports that would begin operation in mid-2021, the privatization of the Port of Eilat (2013), and the accelerated privatization of the Port of Haifa, which is currently in process.

2 The Ministry of Transportation – The Shipping and Ports Authority, Economics and Foreign Relations Branch (Table 2.1: Containers – Total traffic in the Israeli ports). (Hebrew)

The Port of Ashdod, as a container port, has in recent years been listed on the top 100 largest ports in the world (out of a total of 1000 active ports worldwide).³ In 2017, the port was ranked 94th in the world, and in 2018 it was ranked 103rd; however, the Port of Ashdod's uniqueness lies in its ability to deal with all the types of freight arriving in Israel: containers, vehicles, bulk of all types, metals, general cargo and special projects.

In coming years, two new terminals will be inaugurated in Israel: 'Hadarom' in the South which will be operated by Terminal International Limited (TIL) and 'Hamifratz' in the North which will be operated by Shanghai International Port Group (SIPG). This will increase the level of competition between the ports in Israel to unprecedented levels. Starting from mid-2021, there will be significant excess capacity in the ports of Israel and at its peak the handling ability of Israel's four Mediterranean ports is expected to be approximately 8 million TEU as opposed to domestic demand of about 3.2 million TEU (not including transshipment).

The vision of the Port of Ashdod

The vision of the port is to expand the terminals for freight activity and essentially to open the Israeli ports to regional competition with the other ports in the Eastern Mediterranean. In order to achieve this vision, the Port of Ashdod Company has formulated a long-term strategic plan for investment, in the unprecedented amount of about NIS 2.5 billion (~700 million US\$). This program, which is already being implemented, includes the deepening of Pier 21 in order to allow the intake of giant ships – up to 24 thousand TEU, with a length of 400 meters and a width of up to 62 meters. This expansion will provide the Port of Ashdod Company with the ability to compete with the new ports as an equal.

The challenge facing the Port of Ashdod Company in coming years is to overcome its unique constraints as a government company which is subject to excess regulation relative to the private ports. The Port of Ashdod Company must shift from being a company that concentrates on revenue and technological improvements to a company that aims at greater efficiency in inputs and costs that are equal to those of private companies. The main problem is that the private port companies and the Port of Ashdod, which is a government company, do not operate under the same rules of competition, primarily in view of the fact that the new port companies in Israel are efficient, private and not subject to collective labor agreements.

3 Source: Container Management 2019.

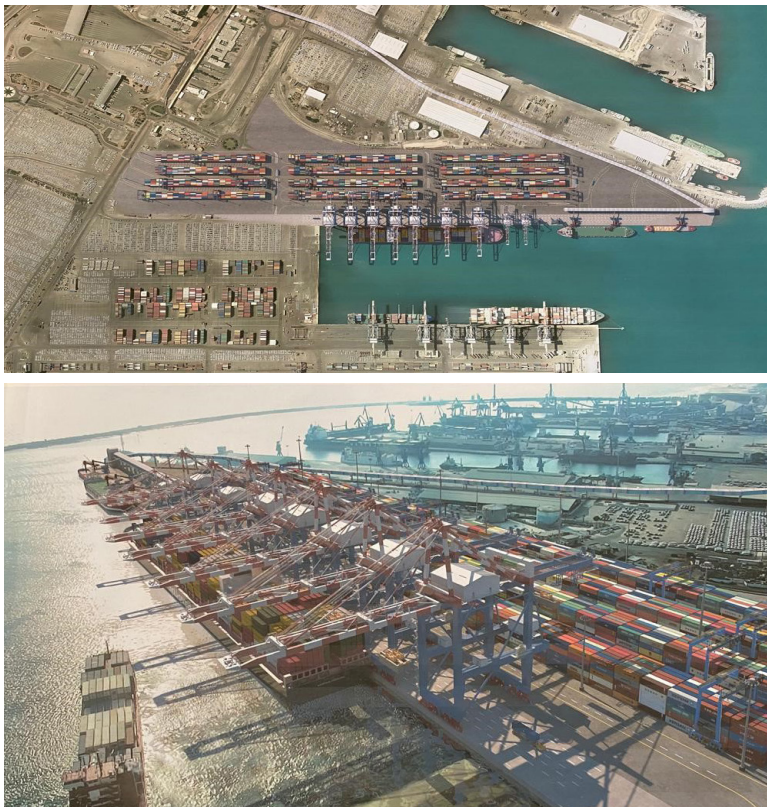


Figure 3–4: Illustration of Pier 21 – the new container terminal that is currently under construction to serve mega-size ships of up to 24 thousand TEU



Figure 5: illustration of a pier that specializes in the conveyance of seeds to the Ashdod granaries, which will operate with an unloading capacity of up to 1,500 tons per hour. The completion of the project is planned for the end of 2022

The Port of Eilat, the Israel Shipyards Port and soon the Port of Haifa operate under regulations that are identical to those applying to the new private terminals; however, while the Port of Ashdod will continue to operate under excess government regulation (the Tender Obligation Law, the Commissioner for Wages, the Government Companies Authority, etc.). The challenge will be to operate together in order to "reinvent the new port of Ashdod" so as to allow for intensive and efficient competition.

It is encouraging that there are examples of success of this sort in other countries. For example, the Port of Hamburg – HHLA in Germany is successfully competing with private terminals. What is less encouraging is the fact that there are not many such examples and therefore the challenge facing us is without precedent in the terminal industry.

The Response of the Ashdod Port Company to the COVID-19 Crisis

Moshe (Shiko) Zana

The Port of Ashdod was well-prepared for the COVID-19 crisis. However, the initial drop in trade and the effect that it appears to be having on the Company's business results is surprisingly large. The year 2020 was meant to be a year of accumulation of profit in order to prepare for the introduction of competition among the ports in Israel, which is planned for 2021 when the new ports open ('Hadarom' and 'Hamifratz'). This situation changed as a result of the COVID-19 crisis, in which the Ashdod Port Company is attempting to deal with the shortfall in revenue relative to the expectation presented in the work plan at the end of 2019.

The first wave

A black swan arrived in mid-February and reached a peak in March–April; characterized by uncertainty and preparations for the next quarter. The pandemic, which began in China and spread to the rest of the world in January–February, reached its peak in March and April and is causing massive disruption worldwide. In the Port of Ashdod itself, the effect was different in several aspects and the adaptations during a situation of uncertainty changed from one month to the next.

Containers – During the first wave, the port experienced a drop of about 15 percent in revenues from container activity; however, as of September the decline moderated to only about 4 percent with an expectation of equaling the figure for the previous year.

At the start, a small number of ships were delayed due to concern about infected crew members or about the ship's port of origin. However, almost immediately, rules and regulations were put in place which made it possible to preserve Israel's chain of supply.

Vehicles – The original estimates foresaw a 30 percent drop in revenue from vehicle handling. Currently, it is expected that the decline will only be about 20 percent this year. This is a major blow to this segment of the port's activity and is explained by the large number of workers sent on unpaid leave and to the rising unemployment in Israel since the beginning of the crisis, which of course led to a drop in the demand for new vehicles.

In addition, this decline in demand also contributed to the slowdown in production of the auto manufacturers in Europe during these months. They gradually began

to recover in May but have still not returned to full production (as of September 2020). The effect of the auto industry on the revenue of the port and its profitability is almost as large as that from container handling. The situation in this segment is expected to continue at least until the end of 2020.

Bulk cargo (cement, clinker, phosphates, grain, etc.) – Despite the fear of a drop of 10 percent in the activity of the port in this segment, the actual drop in bulk imports passing through the Port of Ashdod fell by only a few percent and the port has managed to grow by a significant 8 percent as of September. This is thanks to the major effort by the port to maximize trade activity in this segment. Essentially, bulk cargo has hardly been affected by the COVID-19 crisis, apart from during the first wave and there was an impressive recovery already on exiting from it.

Cruises – This is a growing industry that was meant to reach a new record this year, both worldwide and in the Port of Ashdod. Eighty visits of cruise ships owned by the largest international companies had been approved and the vast majority of them were cancelled immediately with the onset of the pandemic. We estimate that the recovery in the activity of the cruise lines will continue even after the conclusion of the COVID-19 crisis, which is still beyond the horizon. In other words, in our estimation, the recovery of the cruise industry will take at least two years. As of now, more than 90 percent of world's cruise ships are inactive and the monthly cost of anchoring them ranges from one to three million dollars per ship.

This is a major blow to the industry and the end is not yet in sight. The cruise industry has flourished during the last decade with consistent growth of about 6 percent per year and about 30 million passengers annually (32 million in 2019). The global revenue of this industry stood at about \$150 billion annually and it employs more than one million crew members. Currently, the industry is basically paralyzed.

The cruise industry is undoubtedly the most affected within the maritime sectors. The Port of Ashdod views this sector as an important source of growth in the coming era of competition. However, as of now, it appears that during the next two years no cruise ships will be appearing in Israel or in the Port of Ashdod.

The onset of the COVID-19 epidemic

The port quickly adjusted to the pandemic according to the rules laid down by the Ministry of Health and the Ministry of Transportation. This included coordination that was meant to create order among the workers who understood the scope of the challenge and who were willing to do what is necessary to continue the port's operations. Simultaneously with this process, I took up the position of CEO of the

company, which required me to quickly get acclimatized and to close any gaps in knowledge that might interfere with day-to-day operations.¹

The captains of the ships that visited the Port of Ashdod were asked to report on the temperatures of all their crew members and also not to allow them to come ashore, as well as not allowing them to move around on the deck during the loading / unloading of the ship in the port. This was in order to prevent contact between the port workers and the crew.

It was decided right away to create a 'Corona Forum' headed by the CEO and to hold meetings of the forum every morning. The port's security officer was designated to manage the day-to-day activity related to the COVID-19 crisis, including to minimize infection among the port workers and preserve redundancy. The frequent announcements and updates were issued to all of the stakeholders as necessary.

Our goal was to immediately stabilize the operational situation and to meet the needs of both customers and the Israeli economy, alongside the players that are in constant interface with the port activities: the Customs Authority, the Ministry of Health, the Ministry of Agriculture, the Ministry of the Economy and the relevant security organizations.

The directives were tightened up and all of the workers and those coming into contact with the port were required to work according to the rules that apply to the general public. A full plan was prepared for risk management, starting from working in capsules and preventing contact between workers during the change in shifts (which slowed the pace of work for defined periods). Furthermore, all of the areas of mass gatherings in the port were closed (restaurants, the synagogue, the gym and the rest lounges). The workers were instructed to wear masks when moving around the port area, and disinfectant products were made available wherever workers gathered.

In addition, there were daily evaluations made which were led by the Minister of Transportation and with the participation of the chairmen and the CEOs of the ports, together with the various regulators, with the goal of identifying trends and creating a dialogue to solve problems.

Exit from the first wave (May to September)

During the months of May–September and prior to the imposition of the second lockdown, the port worked consistently to stabilize its "windows" activity. The level

1 Shiko Zana became the CEO of the Port of Ashdod Company on March 10th (comment by the editor).

of day-to-day activity rose from week to week. The port operated without any capacity constraints, except during the peak of grain imports (which characterizes the end-of-winter period and the harvest period), during which there was stability with stable growth.

During May, there were worrying signs of an increase in infections in Israel, particularly in the area of City of Ashdod. However, following another announcement of reassurance from the officer in charge of managing the COVID-19 crisis in the port, the port continued to operate according to the directives.

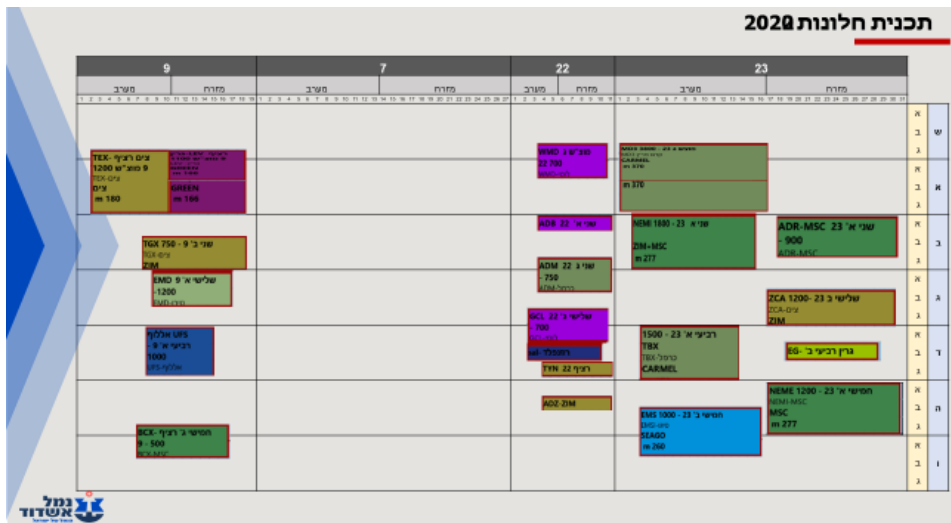


Figure 1: An example of the port’s weekly workplan

Figure 1 presents an example of the weekly "windows" plan for the port. The plan includes the arrivals and duration of stay of every container ship in the port and their ports of origin and ports of destination. The available Pier 7 is designated for ships arriving as part of the operational queue and without any predetermined planning. The plan comprises about 20 thousand containers per week, both in pre-planned windows and from the operational queue.

The second wave – recovery (September to October)

The preparations of the Port of Ashdod for the second wave were meant to minimize the gaps created as a result of the lockdown imposed on the economy; however, most of Israel’s trade partners returned to their normal business activity (at least during this period). There were still "economic ripples" from the closure processes

and the restrictions that we are seeing will affect the continuation of economic activity, primarily containers and vehicles.

The effect of the lockdown diminished prior to The Jewish religious festivals (The Jewish new year and the holidays follows it) which created new processes of demand in the Israeli economy. We are preparing for every scenario with expectations of an aggressive exit from the crisis, when such an exit occurs, in terms of cargo.

Signs of a 'Corona routine' – The current situation

One should be careful not to have overly optimistic expectations. An article in the Economist on September 26th, 2020,² presented the position that many governments in the West are adopting the wrong measures and are trying to solve economic problems "on the fly". These include more than a few of Israel's trading partners in East Asia and certainly in the rest of the world. Therefore, the return to full cargo activity with Israel's trading partners will be largely dependent on the measures their governments adopt.

In contrast, things are different in the maritime container trade. The shipping companies that belong to the three large alliances, i.e. Ocean Alliance, THE Alliance and 2M, which are active along the import routes from East Asia and China by way of the Indian Ocean on the way to the Suez Canal and Israel, have not returned to routine supply on the routes leading to Israel. This includes the cancellation of arrivals on an unprecedented level. This is contributing significantly to the profitability of the shipping companies who are maximizing activity at the expense of service; however, these activities are a direct result of the COVID-19. For example, THE Alliance line, which includes four shipping companies: Hapag Lloyd, Yang Ming, HMM and ONE, which arrives once a week in Israel, will have approximately three times more cancellations of planned arrivals than in the previous year. This amounts to about 12 less arrivals with an average of about 2,200 containers per week and this is simultaneous with about a 30 percent drop in imports through the port.

"30% to 60% outbound shipping capacity withdrawn in Asia-Europe marine routines have severely disrupted trade activities". Alphaliner

The cancellation of arrivals is a recurring theme in many ports of the world. In Israel, the phenomenon is not as common as in the rest of the world. Thus, while prior to the crisis, the port planned for 8 percent growth in container activity, it will finish the year at the same level as in the previous year.

2 Why governments get covid-19 wrong?, The Economist (26 September 2020)
<https://www.economist.com/weeklyedition/2020-09-26>

The growth forecast of the Port of Ashdod in container traffic for 2021 is about 6 percent on a national level (the entire Israeli economy) and on the condition that the intensity of the COVID-19 crisis diminishes or is even completely halted.

What is expected in the future? A cautious evaluation for the near future

The IMF, in the beginning of its most recent study, defined the crisis as unprecedented, and therefore there is no indication of any certainty this year. There is no region of the world that has not been affected to one extent or another and the mutual effects between countries are pervasive. According to the data gathered by the IMF, the nations of the world have spent more than \$8 trillion in fiscal assistance.

There has been a major decline in global output and the IMF is forecasting a drop of about 6 percent this year in Israel. If the crisis continues in Israel, together with the second lockdown, the Ministry of Finance expects a drop of 5 percent in GDP.

The WTO barometer³ for consumer goods is showing a decline to a historic low for the second quarter of 2020. The effect of the second wave is unclear, but clearly it will not be positive.

The impact on container trade is correlative. A return to the pre-crisis routine is expected, according to various forecasts, only after the crisis is behind us or after we have learned to live with the COVID-19 within a healthy economic routine. This means a full return to work globally, and primarily in the large economies of the world.

The scenarios of the various research organizations in the industry are being updated on a quarterly basis. The port, like many other organizations in the Israeli economy, must adapt itself to this period of uncertainty.

Competition in a time of Corona

Following are a number of issues that in our opinion will be the focus in the era of competition in the ports of Israel and will be accompanied by the COVID-19 crisis:

1. Making it as easy as possible, within the rules for safety and health, for ships to visit without any mishaps, while taking into consideration the ships' crews.
2. Technology as an essential factor.
3. Upgrading of the ability to work remotely.

3 WTO trade barometers. https://www.wto.org/english/res_e/statis_e/wtoi_e.htm#top

4. Communication with customers – Greater importance given to existing relationships and the development of continuous communication.
5. A fundamental need for greater efficiency and the adjustment of the company to change.
6. Focus on cost saving and improving the customer experience.
7. Getting more with less effort.
8. The ports of the Eastern Mediterranean as the port of Ashdod's competition.
9. Israel as a transshipment center.
10. Improving the tradeoff faced by governments and companies between closing the economy and quarantining it as a response to the COVID-19 pandemic on the one hand and the opening of the economy in order that life can continue as usual to whatever extent possible on the other hand.

Conclusion

The Port of Ashdod Company, the shipping industry and the supply chain in general must prove themselves during this period of uncertainty and therefore the Port of Ashdod is doing all it can to adapt itself and to maintain flexibility in providing a response to the challenges it faces during this period.

In my opinion, the Port of Ashdod has been successful in providing an optimal solution for the economy during the first wave, and certainly during the second. Currently, as the leading governmental port in Israel, we are prepared to support the economy in maintaining its day-to-day routine, with the possibility of providing for all of the State's essential needs.

Israel's Energy Sector Between Peace and Plague

Elai Rettig

A number of global and regional events in the past year directly affected Israel's energy sector, both strengthening its energy supply security while weakening its export potential. On the one hand, COVID-19 has caused a global slump in energy prices and investment, further distancing Israel's hopes of exporting gas to Europe via pipeline. On the other hand, recent normalization agreements between Israel and its regional neighbors have opened new trade routes for oil and made Israel a more attractive destination for international energy companies, albeit with some new environmental risks included. Finally, the entrance of Chevron into Israel's energy sector will bring with it economic opportunities, but also legal challenges.

The impact of COVID-19 on energy production and export in the East Mediterranean

Even before the COVID-19 pandemic first emerged in early 2020, Israel had a very challenging task of finding foreign markets for its gas. While both Jordan and Egypt signed long-term supply deals with Israel's Tamar and Leviathan fields, this only accounts for 30% of the gas that Israel has earmarked for exports. Without additional markets, Israel will struggle to attract new companies to explore for gas without a clear buyer on the horizon.

The COVID-19 epidemic made the prospects of the East-Med Pipeline even more dubious, as energy demand in Europe declined and led to gas prices going to an all-time low of under \$2 per BTU. The economic slowdown also led to an unprecedented slump in global energy investments across the board – from fossil fuels to renewables and new electricity grid developments. The hardest hit sector is the oil and gas upstream (exploration and production of new fields) which declined by 35%, from \$483b in 2019 to an estimated \$313b in 2020.¹ Even before the COVID-19 pandemic, European gas prices have been steadily falling due to increased competition brought on by a flood of new liquified natural gas (LNG) suppliers, mainly from the USA, Australia and Russia. From \$6 per BTU on the European spot-market in 2018, they went down to \$4 in 2019.² European gas prices are expected to remain low until the middle of the decade even when COVID-19 subsides.

1 Investment estimates for 2020 continue to point to a record slump in spending (23 October 2020), IEA. <https://bit.ly/3mVzzuh>

2 Mike Fulwood and Jack Sharples, "\$2 Gas in Europe: Down, Down, Deeper and Down". Oxford Institute for Energy Studies. <https://www.oxfordenergy.org/publications/2-gas-in-europe-part-iii-down-down-deeper-and-down>

Under these conditions, the prospect of new pipelines and new production projects in the East Mediterranean by private energy companies seems much less likely in the upcoming years. While tensions over gas finds and maritime borders between Turkey and Greece escalate, the economic sense in producing these fields diminishes since any gas exported from the region to Europe can't compete with current prices. Although it is tempting to view deep-sea energy discoveries as the main reason for these recent clashes between Turkey and its neighbors, this conclusion seems to be less convincing given the current state of the global oil and gas markets. As the economic viability of deep-sea gas production in the East Mediterranean Sea is steadily decreasing, maritime clashes between Turkey and Greece have only intensified. This indicates that while energy may have motivated Turkey's initial expansion into the sea, it is now being used mainly as an excuse to pursue much broader geopolitical goals.

Both Turkey and Greece/Cyprus are aware that any new gas discoveries will likely stay in the ground for the time being, but both sides are using these fields to strengthen alliances in the region. For Turkey, the desire to strengthen ties with Libya's Government of National Accord (GNA) is masked by its actions to block the East-Med gas pipeline by expanding its EEZ to Libya's maritime border. For Greece, Cyprus and Israel, it is an opportunity to strengthen security and strategic ties over the construction of a pipeline that is economically unviable. For both sides there's an interest to continue the rhetoric over the East-Med Pipeline, even if it never materializes.

Chevron Buys Noble

The global slump in oil prices did bring with it an unexpected development for Israel. On July 2020 one of the biggest U.S. oil companies in the world – Chevron – announced that it intends to take over Noble Energy, which operates the Tamar and Leviathan gas fields in Israel. The deal, which is estimated at about five billion dollars, was made possible by the COVID-19-induced crash in oil prices which severely damaged Noble Energy's investments in the US oil shale industry and forced it to sell its assets at relatively low prices.

Chevron's entry as a partner in the gas fields in Israel entails many economic and political opportunities. It is one of the largest and most stable private energy companies in the world and is very active in the USA, Australia, Nigeria, Angola and Kazakhstan. Its entry into the Israeli energy sector could send an encouraging message to other companies that have so far feared investing in Israel due to political reasons. Chevron's presence in the eastern Mediterranean can also help promote

regional cooperation between Israel and its neighbors, which are necessary for the export of Israeli gas to Europe. Together with the Tamar and Leviathan fields, Chevron will also gain control of the Aphrodite field, which is currently shared jointly by Cyprus and Israel, in addition to the search concessions it recently acquired from Egypt in the Red Sea.

The combination of interests between Israel, Cyprus, Greece and Egypt for joint export has existed for many years, but under the leadership of a major international oil company in the form of Chevron, there is now more chance of finding funding for ambitious production and export projects. Israel's maritime border negotiations with Lebanon can also move forward with some pressure from Chevron, if it indeed chooses to place its weight on the issue.

At the same time, it is still too early to assume that the Chevron-Noble deal will improve Israel's economic and energy prospects. Unlike Noble Energy, the fact that Chevron is a huge company with large currency reserves and many global projects also allows it to delay the development of its oil and gas fields and wait until global prices recover. This is inconsistent with Israel's ambitions to explore for more oil and gas fields and expedite the development of Phase II of Leviathan.

In addition, Chevron may turn out to be a tougher partner than Noble Energy when it comes to negotiating gas prices for the domestic Israeli market, especially during the expected negotiations with the Israeli Electricity Company (IEC) after its contract with the Tamar field ends in 2021. While the Israeli government struggled to withstand the various political pressures exerted by Noble Energy when signing the original contract with the IEC in 2012 and approving the much-contested "gas framework" in 2016, it will find it even more difficult to do so in the face of one of the largest and most powerful companies in the world. This might also prove a bigger challenge for the various environmental groups that protested offshore and onshore gas infrastructure in Israel while they were still under the management of Noble Energy. Like many other major oil companies in its caliber, Chevron has a reputation for litigating against environmental NGOs and even individual activists that disrupt its activities.

Another possible scenario that Israel should prepare for is that Chevron may in one point in the future, prefer to sell its share of the gas fields in Israel and altogether remove itself from Israel's energy sector. Politically, Chevron's involvement in Israel may block it from operating in other countries, although today this barrier is not as strong as it used to be, following the thawing of relations between Israel and the Arab Gulf states ("Abraham Accord" 2020). Another reason for leaving may be

Israel's notoriously unstable and politicized regulatory system, which was exposed at its peak during the public debates over the gas framework. Chevron may not be interested in inheriting the negative image left behind by Noble Energy among large sections of the public, and may prefer to bring in another entity that will buy its assets in Israel.

Any future move to leave Israel is expected to delay the exploration and development efforts of additional fields or the ability to sign new export deals, and might create concern among Israeli decision-makers who are now looking towards Israel's newly-created "sovereign wealth fund" (which absorbs gas revenue to prevent the "Dutch Disease") as a solution to recover Israel's economy in the post-COVID-19 world. Israel must now monitor Chevron's moves after completing control of Noble Energy's assets and ensure that existing plans to develop gas fields in Israeli waters are not harmed as a result of the takeover process. If Chevron chooses to sell its stake in the Israeli reserves, Israel must ensure that the new investor is in line with Israel's national interests and its relations with the United States, especially in a scenario where the buyer is a Russian or Chinese company.

Regional peace deals and Israel's Energy Sector

The second half of 2020 also brought with it a series of historic normalization agreements between Israel and its regional neighbors – the UAE, Bahrain and Sudan – with additional countries in the Gulf rumored to sign similar agreements soon. While these agreements are not expected to drastically alter Israel's energy sector or relieve its various export constraints, they will open up an important maritime route for Israel's oil imports during emergencies, encourage regional cooperation and make it easier for international energy companies to operate in Israel's waters.

In the upcoming years Israel might begin to receive some oil from the UAE, both in the form of direct imports and by serving as a transit state for Emirati oil travelling between the Red Sea and the Mediterranean Sea through the Eilat Ashkelon Pipeline (EAPC).³ In October 2020 a memorandum of understanding (MOU) was reportedly signed between EAPC and a consortium of UAE and Israeli semi-private holding companies (MRLB, Lubber Line Capital, and AF Entrepreneurship) to provide oil from the UAE through Israel.⁴ While this deal won't lower fuel prices for consumers in

3 Israel has already been receiving oil from South Sudan (through Sudan) since at least 2013, but the recent agreement may increase these volumes as well.

4 Amiram Barkat. "Agreement signed to operate Israel pipeline for UAE oil", *Globes* (October 20, 2020). <https://en.globes.co.il/en/article-agreement-signed-to-operate-israel-uae-oil-pipeline-1001346340>

Israel's domestic market (which are mostly determined by taxes, VAT and marketing fees, not by the actual cost of oil), it can increase transit revenues for the Israeli government (reportedly, up to \$700m every year) and will help strengthen the diplomatic ties between Israel and these countries. This does, however, come with a potential environmental cost in the shape of markedly increased tanker volume in the gulf of Eilat (Aqaba), substantially increasing the possibility of an oil spill that will cause damage to marine life and to the beaches in Eilat.

In addition to environmental risks, there may be indirect political implications for Israel if the new oil transit deal with the UAE comes at the expense of the routes offered by Egypt. Currently, Emirati oil seeking the shortest route to the Mediterranean Sea can go through Egypt's Suez Canal or the Suez-Mediterranean Pipeline (SuMed) which is partly owned by Egypt, Saudi Arabia and the UAE. If the new deal between Israel and the UAE takes away traffic from Egypt, this will result in a loss of valuable transit revenue for Egypt which may create political tensions with Israel, even if the loss is not significant.

In terms of security of supply, the agreement with the UAE and Sudan opens the possibility of importing oil from another maritime route during an emergency, and this has important security implications. Today, most of Israel's oil passes through Turkey, either through the Baku-Tbilisi-Ceyhan pipeline (BTC) that transfers oil from Azerbaijan through Georgia and into Turkey, or through oil tankers from Russia in the Black Sea that pass through the Bosphorus Straits on their way to Israel. If the Turkish maritime route is interrupted for political or technical reasons, or if the BTC pipeline is sabotaged as part of the ongoing conflict between Azerbaijan and Armenia over Nagorno-Karabakh, temporary imports of oil from the UAE or Sudan via the Red Sea could prove to be critical until the disruption is resolved.

Beyond purchasing oil, Israel can benefit from exporting cleantech products and renewable energy technology to Sudan and the Arab Gulf states – diversifying away from just weapons and surveillance systems which Israel often uses as a crutch when building foreign trade relations. About 13% of the oil that the UAE produces is marketed to the local population, which enjoys subsidized electricity, fuel and water, and is thus more wasteful in how it consumes it. Israeli technologies that help streamline energy and water use, lower costs for desalinated seawater, and increase the efficiency of renewable energy, will help the UEA "release" some of its oil and gas for export, thus strengthen its economy. This goal also aligns with the targets set forth by several Arab Gulf States to diversify their economy beyond energy products, as a way to reduce their vulnerability and exposure to the volatile global oil market.

Lastly, the agreement with the UAE removes a geopolitical barrier that for decades had impeded on Israel's ability to attract major international energy companies to invest in it. Companies such as Exxon, Chevron, Total and BP have traditionally refrained from exploring Israel's land and economic waters for fear of an Arab boycott. Instead, they turned to mostly barren searches in Lebanon and Syria's waters. The Israel-UAE agreement gives companies confidence in entering the Israeli market, and this may also have a bearing on Chevron's decision whether to sell the Israeli gas reserves that came under its control after taking over Noble Energy.

Conclusions

The three major events of the past year that have affected Israel's energy sector (the slump in global energy prices, Chevron's takeover of Noble Energy, and the normalization agreements with UAE/Bahrain/Sudan), did not drastically alter Israel's energy projections and constraints, but rather accelerated ongoing trends. As such, a number of recommendations are in place:

1. As global and European energy prices continue to fall, Israel's target of exporting its gas to distant regions will be put on hold. It is becoming increasingly apparent that the gas finds will mainly remain a regional source for energy. As such, Israel should focus on utilizing gas for domestic consumption in sectors other than electricity (petrochemicals, heating, transportation) and encourage its neighbors to do the same.
2. While Chevron's entry into the Israeli market brings with it many economic opportunities, Israel should keep a close eye on Chevron's plans regarding the future development and ownership of the gas fields. In the event that Chevron wishes to delay further development of Leviathan, or prefers to sell its Israeli assets altogether, Israel must ensure that the new investors are in line with Israel's national interests and development goals.
3. Israel's deal to transit UAE oil through its pipeline holds political and economic benefits for both sides. The Israeli government must conduct a comprehensive strategic assessment before finalizing the oil transit deal with the UAE, considering both risks and opportunities. Notwithstanding, Israel should be aware of the environmental risks included in the deal. The substantial increase of tanker movement that this deal entails in the small bay of Eilat can turn even a small oil spill into a potential environmental disaster. Israel should enforce strict protocols and monitor this activity. In addition, the Israeli government should consider the potential competition it is creating for Egypt which could lead to a decline in transit revenue to its neighbor and may be a source of political tensions.

Tax benefits under special tax regimes for the shipping industry¹

Ofir Kafri

Introduction

Special tax regimes for the shipping sector exist in various countries in the international tax system. These tax regimes are a type of subsidy offered by the respective state to its maritime sector. The operation of these regimes is intended to assist in attaining objectives such as an increase in shipping operations, refurbishing of commercial fleets, increasing human resources in the area and the like.² Processes occurring in the global shipping sector such as international competition, the move to using flags of convenience (FOC) and the increased use of government subsidies, have put pressure on various countries to allocate assistance that also include tax benefits to their shipping industry.³

Studies that have examined the use of tax instruments in the international shipping sector support the importance of selecting efficient tax instruments that suit the objectives that have been established. Lessons from the international system show that the local and international environments and their mutual influences on the tax regime must be closely studied prior to putting a new one in place as well as while it is in effect. Research shows that in certain cases tax benefits for the shipping sector only partially achieved their objectives or even failed, because of, among other reasons, misalignment. For example, it has been claimed that the use of a tonnage tax to significantly strengthen human resources in the British shipping industry did not succeed. It was asserted that the tonnage tax intended to bolster the gross tonnage increase of the fleet from 5.6 million tons to around 12 million within six years. In contrast, the increase in the number of jobs in the same period

- 1 This paper is based on academic research focusing on 'Special Tax Regimes for the Maritime Sector in the International System'. It is not intended to present complete legal information, and should not be seen as offering legal advice or used as such. Because of space limitations, the paper does not include all the legal issues and complexities in this field.
- 2 It must be noted that there are cases in which government subsidies are allocated to private shipping companies in order to safeguard or develop a strategic fleet meant to help the state in an emergency, e.g., the U.S. Maritime Security Program (MSP), Maritime Administration, U.S. Department of Transportation. <https://www.maritime.dot.gov/national-security/strategic-sealift/maritime-securityprogram-msp>
- 3 ITF (2019), "Maritime subsidies: Do they provide value for money?", International Transport Forum Policy Papers, No. 70, OECD Publishing, Paris.

benefitted seamen coming from countries outside of the European Union.⁴ Another example is the use of a tonnage tax as a means of strengthening or maintaining the number of ships registered in a country. In this context, it has been claimed that in certain cases, the broadening of the tonnage tax in the international system weakened to some extent the effect of this tax instrument in achieving the above objective.⁵

The tax instrument mix, which is used to attain objectives, is varied and changes at times from state to state. These tax regimes tend to present benefits such as tax credits, tax exemptions, reduced taxation relative to other sectors, etc. Tax regimes may comprise taxes that are specific to the maritime sector, such as a tonnage tax, and types of taxes that are not unique to the sector such as company tax, employer tax, income tax and value added tax.⁶

This paper will present examples of tax instruments that states use in the maritime sector. In addition, tax benefits given in special regimes to the maritime sector will also be discussed. Likewise, examples of the conditions set by the governments for awarding tax benefits, and the participation in the special tax regimes will be presented. To show examples of the range of methods and instruments, issues in special tax regimes for the shipping industry that exist in Australia and Singapore will be offered. Lastly, a partial list of the policy recommendations that may perhaps assist in states' decision-making processes related to the use of special tax regimes for the shipping industry will be presented.

4 For additional reading about the problems in supporting maritime human resources in Britain using a tonnage tax, see: Gekara, V. (2010), "The stamp of neoliberalism on the UK tonnage tax and the implications for British seafaring", *Marine Policy*, Vol. 34, pp. 487–494; Leggate, H. and J. McConville (2005), "Tonnage tax: Is it working?", *Maritime Policy & Management*, Vol. 32:2, pp. 177–186.

5 For additional reading about the decreased effect of tonnage tax in the international system and other problems, see: Bergantino, A. and P. Marlow (1998), "Factors influencing the choice of flag: Empirical evidence", *Maritime Policy and Management*, Vol. 25:2, pp. 157–174; Marlow, P. and K. Mitroussi (2008), "EU shipping taxation: The comparative position of Greek shipping", *Maritime Economics & Logistics*, Vol. 10, pp. 185–207; Marlow, P. and K. Mitroussi (2011), "Shipping taxation: Perspectives and impact on flag choice", *International Journal for Shipping and Transport Logistics*, Vol.3:4, pp. 349–364.

6 For additional reading about tonnage tax models, implications and results of using it, see the following sources: Leggate H. and J McConville (2005), "Tonnage tax: Is it working?", *Maritime Policy & Management*. 32:2, 177–186; Marlow, P., and Mitroussi, K. (2008), "EU shipping taxation: The comparative position of Greek shipping", *Maritime Economics & Logistics*, 10(1–2), 185–207.

This paper relates to test cases of states in which special tax arrangements for the maritime sector exist, and does not deal with general state tax regimes that also affect the maritime sector. Due to lack of space, only the main examples drawn from the test cases will be presented, and the complete benefits and existing conditions in each case will not be discussed.

Tax instruments, types of benefits and limitations included in tax regimes for the maritime sector

As noted above, states use a range of tax instruments as part of their tax regimes for the maritime sector. The combination of types of taxes used by states can differ from state to state. The following presents some instruments and benefits that are used, classified for convenience according to capital taxes and company income tax, labor tax and energy tax.

Benefits related to capital and corporate income may be, for example, a tonnage tax for companies that allows them to pay a reduced tax. Many states, e.g., Greece, Norway, and Japan, use different types of tonnage taxes. Additional benefits are different types of reduced corporate or business taxes for entities in the maritime sector and accelerated depreciation on ships and maritime equipment. In addition, states can reduce taxes on dividends, tax deferral in cases of selling of a ship and purchase of another one, reduction or exemption from value added tax on products related to ship operation and the like.⁷

Instruments and benefits that are used in the context of human resources are reduction or exemption from income tax for seamen, foreign earning deduction for seamen, tax benefits for social benefit payments and so forth. For example, Germany, Britain, South Korea and additional countries allowed tax deductions, in certain cases, on seamen's work. Countries such as France, Sweden and Holland reduced taxes or gave tax rebates on salary expenses and social benefit payments. Benefits related to the area of energy also exist in the shipping industry; e.g., reduction or exemption from fuel and electricity taxes, exemption from carbon emission taxes (in those areas where such taxes exist). Countries such as Greece, Australia and Portugal awarded exemptions from the excise tax on fuel for ships that operated according

7 Ernst & Young. Shipping Industry Almanac 2016; Ernst & Young. Worldwide Corporate tax 2019. https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/tax/hc-alert/eyworldwide-corporate-tax-guide-2019.pdf; Ernst & Young. Worldwide VAT, GST and Sales Tax Guide 2019. https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/tax/hc-alert/ey-2019-worldwide-vat-gst-and-sales-tax-guide.pdf

to conditions established by legislation. Sweden conferred exemptions from carbon emission tax to local commercial shipping operations.⁸

In some countries, limitations and conditions were imposed on tax regimes in the attempt to prevent misuse of benefits and harm to local and international maritime operations. These conditions were intended to help meet, among others, targets and local economic policy, agreements and international limitation, and prevent situations such as the use of the maritime sector for the creation of tax havens.⁹ There are many examples of tax benefit limitations. For example, a cap on tax benefits on the income of local seamen only, tax benefits for local corporations and so forth.¹⁰ In some countries in the international system, the limitations on tax regimes are relatively constrained. As a result, and because of other reasons, trends such as a surge to register ships in specific countries and an international race to the bottom in terms of tax benefits are created.

A special tax regime for the Australian maritime industry

Australia, in recent years, carried out reforms in its shipping sector, which included also changing the tax regime and that was intended to reduce blockages and deficiencies in the area.¹¹ The package of instruments and incentives that emerged following the reform included new tax legislation that can be seen, for example,

8 ITF (2019), "Maritime subsidies: Do they provide value for money?", International Transport Forum Policy Papers, No. 70, OECD Publishing, Paris. Page 9–11, 20, 33; Ernst & Young Shipping Industry Almanac 2016.

9 To read about international activities to reduce damage caused by international tax competition and problematic tax regimes, see: Organisation for Economic Co-operation and Development (OECD). Addressing base erosion and profit shifting. February 12, 2013. Organisation for Economic Cooperation and Development (OECD). Action plan on base erosion and profit shifting. July 19, 2013. https://read.oecd-ilibrary.org/taxation/action-plan-on-base-erosion-and-profitshifting_9789264202719-en#page1

10 One can see examples of limitations and conditions that were imposed by states on tax benefits given to the maritime sector in the following sources: Ernst & Young. Global Oil and Gas Tax Guide 2019. <https://www.ey.com/eng/tax-guides/global-oil-and-gas-tax-guide-2019>; Ernst & Young, Shipping Industry Almanac 2016.

11 For additional reading on the reasons for the reform, see the following sources: Australia. Parliament of Australia Senate. Farrell, Sen Don (ALP). BILLS – Shipping Reform (Tax Incentives) Bill 2012, Shipping Registration Amendment (Australian International Shipping Register) Bill 2012, Coastal Trading (Revitalising Australian Shipping) Bill 2012, Coastal Trading (Revitalising Australian Shipping) (Consequential Amendments and Transitional Provisions) Bill 2012, Tax Laws Amendment (Shipping Reform) Bill 2012 – Second Reading. 18 June 2012.

in the Shipping Reform (Tax Incentives) Act 2012.¹² Likewise, changes were made regarding the maritime sector in the 1997 Income Tax Assessment Act.¹³ The reform was intended, among others, to increase competition in the international arena, to safeguard the state's shipping industry, and to increase the number of jobs in the industry. Australia used regulatory and tax changes to increase the number of ships flying the Australian flag, which was shrinking. In addition, it acted to create conditions for revitalizing the state's commercial fleet, increase the scope of investments in the area, and upgrade and increase the sector's human resources. In contrast to other countries, it chose a model that does not also use a tonnage tax but rather other tax instruments, because, so it claimed, the method it chose is more structured, cost-effective to operate since it uses the existing tax regime, provides certainty to the taxpayer and follows the law.¹⁴ The government published an analysis of the scope of approvals that it issued in 2012–2019 to those eligible for the central tax benefits allowed as part of the reform. The data show lack of use or limited use of the tax benefits. The tax exemption benefit was an exception, relatively speaking, as in 2019, 25 exemptions were issued to ships.¹⁵

The change in tax legislation focused on the some of the following central benefits. Four of these benefits require that their beneficiaries meet certain conditions and limitations set by law.¹⁶ One of these is an exemption from income tax according to conditions established by law regarding activities conducted on passenger ships and cargo ships. The core activities include, for example, loading and unloading cargo from a ship and so forth. Likewise, an exemption was possible for activities ancillary to the core activities but this covered a relatively minor range of activities, with

12 Australia. Shipping Reform (Tax Incentives) Act 2012. No. 53, 2012. Compilation date: 5 March 2016. <https://www.legislation.gov.au/Details/C2016C00434>

13 Australia. Income Tax Assessment Act 1997. Subsections 40-102(4) and 40-285(5), sections 40–362 and 51–100 and Subdivision 61-N. Act No. 38 of 1997. Date of Assent 17 Apr 1997. <https://www.legislation.gov.au/Series/C2004A05138/Amendments>

14 Australia. Parliament of the Commonwealth of Australia. Tax Laws Amendment (Shipping Reform) Bill 2012. Revised Explanatory Memorandum. 2010–2011–2012. Pp 5–8, 14.

15 Australia. DITRDC. Consolidated Information on Certificates and Notices. Last Updated: 3 January, 2020. https://www.infrastructure.gov.au/maritime/business/tax_incentives/certificates_issued.aspx

16 Australia. DITRDC. Eligibility Requirements for Certificates and Notices. https://www.infrastructure.gov.au/maritime/business/tax_incentives/eligibility.aspx. Australia. Shipping Reform (Tax Incentives) Act 2012. No. 53, 2012. Compilation date: 5 March 2016. <https://www.legislation.gov.au/Details/C2016C00434>

constraints.¹⁷ Getting an income tax exemption was made contingent on satisfying a process that determined conditions and constraints. For example, applicants had to get government approval for an exemption from shipping income tax attesting to the fact that they met a series of conditions related to, among others, operations conducted in Australia, and demands related to human resource training.¹⁸

The second benefit was the possibility of enabling accelerated depreciation of ten years per ship instead of twenty years, as was the law prior to the reform. The declared purpose of the benefit was to create an incentive to move to using new ships. According to the government, newer ships would decrease problems of safety and environmental pollution, and enable the integration of advanced technologies. This benefit was awarded after getting exemption approval for the ship from the government. A third benefit allowed the deferment of tax payments according to conditions established by the law about profits from selling a ship, which issued it a government certificate of approval for the tax benefit. This benefit was awarded in cases when a new ship was purchased using the profits from the sale of another ship (i.e., roll-over relief), which also required government approval to get the tax benefit. The purchase must be done within a period of time established by law and according to the legislated constraints. The main reason that this benefit was included in the reform, similarly to the accelerated depreciation, was to incentivize the purchase of new ships.¹⁹

A fourth benefit allowed a refundable tax offset on salaries and other payments as established by law, and that were paid to Australian seamen. This benefit was limited and contingent on meeting a number of conditions. For example, employing a seaman on a ship for a minimum period with government approval as determined by the Shipping Reform Law (Tax Benefits) 2012. The purpose of the benefit was

17 Australia. Department of Infrastructure, Transport, Regional Development and Communications. Shipping Exempt Income Tax Incentive. Last Updated: 18 October, 2018.

https://www.infrastructure.gov.au/maritime/business/tax_incentives/ShippingExemptIncomeTaxIncentive.aspx

18 Australia. Department of Infrastructure, Transport, Regional Development and Communications. Additional Requirements for a Shipping Exempt Income Certificate. Last Updated: 21 February, 2017. https://www.infrastructure.gov.au/maritime/business/tax_incentives/additional.aspx

19 Australia. Department of Infrastructure, Transport, Regional Development and Communications. Accelerated Depreciation and Roll-Over Relief. Last Updated: 21 February, 2017. https://www.infrastructure.gov.au/maritime/business/tax_incentives/AcceleratedDepreciationRollOverRelief.aspx

to enable Australian seamen to gain experience.²⁰ An additional benefit exempted Australian companies from withholding tax on payments for leasing a ship from a foreign entity, as defined by law. There are a number of conditions for this benefit such as the agreement being on a bareboat basis.²¹ The purpose of this benefit was to decrease leasing costs of foreign ships for Australian companies. These companies were forced to sign contracts that imposed the withholding tax expense on them. Likewise, the benefit was intended, according to the government, to open up work opportunities for Australian seamen.²²

Special tax regime for the shipping industry in Singapore

Singapore serves as an international maritime operations center offering a developed maritime industry services such as courier, logistics, financial, legal etc. companies.²³ In Singapore there is a tax regime that has a range of tax instruments related to many areas in the maritime sector beyond the shipping industry. The tax regime includes various tax benefits intended to strengthen the international competitiveness of the maritime industry. Below are several examples of the main tax benefits.²⁴

Singapore operates a tax benefit program called Maritime Sector Incentive – MSI. The program has a number of benefit tracks that address various areas in the maritime sector. For example, the track for getting a tax benefit called the Approved International Shipping Enterprise Award (MSI–AIS) is intended to encourage international ship owners and operators to establish their commercial operations base in Singapore. The MSI–AIS tax benefit enables these owners and operators to get an exemption on taxes on certain income as determined by law. For example, they can get an exemption from income from foreign ships operating in international

- 20 Australia. Department of Infrastructure, Transport, Regional Development and Communications. Tax Incentives–Australian Shipping. Seafarer Tax Offset. https://www.infrastructure.gov.au/maritime/business/tax_incentives/seafarertaxoffset.aspx
- 21 Bareboat basis is the leasing of a ship without crew and fuel. To read the dictionary definition of this concept, see: Cambridge Dictionary. Bareboat charter. Cambridge University Press. 2020. <https://dictionary.cambridge.org/dictionary/english/bareboat-charter>
- 22 Australia. DITRDC. Royalty Withholding Tax Exemption. Last Updated: 21 February 2017. https://www.infrastructure.gov.au/maritime/business/tax_incentives/RoyaltyWithholdingTaxExemption.aspx
- 23 Lam J.S.L. (2016) Strategy of a transshipment hub: The case of Port of Singapore. In: Lee P.T.W., Cullinane K. (eds.) "Dynamic shipping and port development in the globalized economy". Palgrave Macmillan, London. pp. 12–38.
- 24 For further details about the paragraphs relevant to the maritime sector that appear in Singapore's income tax law, such as paragraph A13 (Exemption of shipping profits) and paragraph F13 (Exemption of international shipping profits), see: Singapore Income Tax Act (ITA). Current version as at 22 Nov 2020. <https://sso.agc.gov.sg/Act/ITA1947>

shipping lanes according to the conditions established by law. The program has additional tracks such as the track that offer benefits when leasing a ship, the Maritime Leasing (MSI–ML) award. There is another track, the Shipping-Related Support Services (MSI–SSS) award, which confers benefits for operations defined as supporting the maritime sector, e.g., courier and logistics companies, shipping agencies and more.²⁵

There are a number of additional benefits such as withholding tax exemption. This benefit on interest and certain payments related to purchase financing arrangements or the construction of a ship is given to businesses determined to be eligible. The benefit is contingent on a series of conditions and constraints.²⁶

Another benefit is related to companies operating Singapore-registered ships. These companies are eligible for tax benefits on income from operations that occurred outside of the port of Singapore, as delineated in paragraph A13 of the Singapore Income Tax Act. The tax benefit is awarded in cases such as transport of cargo and passengers on ships, towing or maritime rescue operations, profit from selling a Singapore-registered ship and others.²⁷ Likewise, Singapore offers certain benefits to the maritime sector under the Goods and Services Tax Act, which tariff is equivalent to value added tax.²⁸

- 25 Maritime and Port Authority of Singapore. Maritime Sector Incentive. <https://www.mpa.gov.sg/web/portal/home/maritime-companies/setting-up-in-singapore/programmes-to-support-your-maritime-business/maritime-sector-incentive>
- 26 Maritime and Port Authority of Singapore. Withholding Tax (WHT) Exemption. <https://www.mpa.gov.sg/web/portal/home/maritime-companies/setting-up-in-singapore/programmesto-support-your-maritime-business/withholding-tax-exemption> Inland Revenue Authority of Singapore. Payments That Are Not Subject to Withholding Tax. Payments for the Charter of Ships. <https://www.iras.gov.sg/irashome/Other-Taxes/Withholding-tax/Non-residentcompanies/Payments-That-Are-Not-Subject-to-Withholding-Tax/#title5>
- 27 For further details about the operations and situations that make companies eligible for tax benefits, according to the conditions laid out, see the following source: Inland Revenue Authority of Singapore. Specific industries – Shipping Companies. <https://www.iras.gov.sg/irashome/Businesses/Companies/Working-out-Corporate-/Income-Taxes/Specific-industries/Shipping-Companies>
- 28 Inland Revenue Authority of Singapore. GST-registered businesses – Specific business sectors. Marine and Shipping. <https://www.iras.gov.sg/irashome/GST/GST-registeredbusinesses/Specific-business-sectors/Marine-and-Shipping>; Inland Revenue Authority of Singapore. GST Guide for the Marine Industry. 25 Oct 2019. https://www.iras.gov.sg/irashome/uploadedFiles/IRASHome/e-Tax_Guides/eTax%20Guide_Guide%20for%20the%20Marine%20Industry_Second%20Edition.pdf

Discussion and significance for Israel

Over the years, the state of Israel awarded certain tax benefits to the Israeli maritime sector.²⁹ For example, operations that were conducted under the auspices of legislation such as the Law for Encouragement of Capital Investments 1959, which formed the basis for awarding benefits to Israeli ships by the Ministry of Industry and Commerce (MIC), as part of the tax benefit track that included reduced corporate tax, accelerated depreciation and reduced capital gains tax.³⁰ In addition, in Israel, government support that is not through tax benefits is also available. This support comprises a total of 20 million shekels, for a period of four years, and is intended to support employment of Israeli seamen in Israeli ships (carrying an Israeli flag or Israeli owned), thus requiring that Israeli seamen be employed.³¹

Israel is considering a tax change in the area of shipping along the lines of tonnage tax legislation. The proposed income tax law (Vessel Operation Income Tax by Tonnage), 2018, notes that passage of the aforesaid legislation will bring the law into line with that used around the globe. In the opinion of the Israeli government, the proposed tax regime may help prevent the move of Israeli ships to operations as part of foreign companies. Furthermore, the benefits may motivate foreign shipping companies into becoming Israeli ones, and will advance the establishment of new companies in the industry, as well as strengthen industries ancillary to shipping. It has been claimed that this will bolster international competitiveness and support for maritime training, as well as maintain environmental protection.³²

Some central issues must be considered when discussing the special tax regime for the shipping industry before creating it and also while implementing it. Below is a list of a number of issues arising from test cases in other countries that used tax regimes

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- 29 To get an impression of the legislative activity, see the following examples: Income Tax Ordinance [New Text], 1961, paragraphs 5, 70–74, (amendment no. 22) 1975 (amendment no. 132) 2002, paragraph 130A (amendment no. 142) 2004, etc.; the Law for the Encouragement of Industry (Taxes) 1969; The Knesset's Economic Affairs Committee, protocol no. 137, proposed Exemption from Tax for Seamen and Vessel Owners Law 1994, June 1994; Income Tax Regulations (Percentage of Depreciation for Ships), 2001.
 - 30 For further reading, see the following source: The Encouragement of Capital Investment Law, 1959. <https://main.knesset.gov.il/Activity/Legislation/Laws/Pages/LawPrimary.aspx?t=lawlaws&st=lawlaws&lawitemid=2000780>
 - 31 Government decisions, Airport Authority and Improvement of the Competitiveness of Israeli Shipping, government decision no. 3373 of 11 January 2018.
 - 32 For further details about the reasons and objectives of Israel in promoting this law, see the following source: Proposed Income Tax Law (Vessel Operation Income Tax by Tonnage), 2018, 18 July 2018. https://www.nevo.co.il/law_word/law15/memshala-1251.pdf

in this area.³³ The list does not exhaust all the aspects that should be related to when discussing the tax regime but can be a good basis for the examination.

1. It is better for the state to determine what goals it is trying to achieve through the instruments, e.g., tax benefits, that are available to it in terms of the maritime sector and other related factors. Setting goals will allow it to assess the effectiveness of the instruments in achieving the targets and evaluate the changes, to the degree required, that will promote the desired results. A national goal, in the case of Israel, may be, for example, to maintain and strengthen Israel's commercial maritime connectivity that may be called upon in emergencies, through a fleet under Israeli control.
2. An investigation into what is the appropriate tool or the best combination of tools to achieve the goals set by the government should be conducted. Sometimes, instruments that are not tax benefits are more effective and a better means for attaining goals.
3. If tax benefits are to be used, then it should be determined which are the correct eligibility features that should be set that will help meet their intended purpose. Determining the tax benefit features must be done after examining legal, financial, commercial and other aspects that impact the maritime sector's operations. Misidentifying the appropriate features may lead to undesirable results, as noted above.
4. An important issue is the examination of the cost of tax benefits to the state, versus the expected gain. In addition, the other affects of tax benefits on the maritime sector and other factors should also be examined. Sometimes the tax benefits may cause undesirable results that will impact efficient operations negatively.
5. After the tax benefits become effective, the state must examine the level of their success, and adjustment them accordingly. Conducting an impact study on the maritime sector tax regime may help. Similarly, the predicted data, which were used as the basis for the decision to implement tax benefits and determine their features, should be examined to see whether they are appropriate and if not, a new examination should be conducted.
6. Regulatory, economic and other changes in the local and international maritime sector may affect the success of tax benefits over time. Nevertheless, there is also a danger that subsidies, including tax benefits, will create unwanted distortions in the maritime sector. Such changes and possibilities mandate a reexamination of the benefits, and if necessary, they must be modified.

33 An example of recommendations, some of which may help achieve higher quality goals when using subsidies in the maritime sector: ITF (2019), "Maritime subsidies: Do they provide value for money?", International Transport Forum Policy Papers, No. 70, OECD Publishing, Paris. Page 7–8.

Logistic Corridors between the Indian Ocean and the Mediterranean – Existing trade routes, planned ones and China possible future involvement

Ehud Gonen

Introduction

This chapter surveys the main trade routes (both existing and planned) that connect between the Indian Ocean and the Mediterranean. It describes the main overland routes, the ports that they connect to and the political and economic challenges they involve.

The main conclusion presented is that in the existing political situation in the Levant there is greater feasibility for projects that are contained within the borders of a single country while the feasibility of large cross-border projects is relatively low. Nonetheless, the rise of Iran as a regional power and the formation of a Sunni-Israeli alliance in response increases the chance of creating routes from the Gulf region by way of Jordan to the port of Haifa (Israel).

Similarly, and despite the ‘boom’ in infrastructure investment in western Asia as a result of China’s Belt and Road Initiative, it appears that in the foreseeable future China will not be involved in investment in overland cross-border logistic projects in the Levant (such as railways) due to the political risk involved. On the other hand, China is deeply involved in investment in the region’s seaports.

The factors influencing the trade routes

The main trade route between Asia and Europe is of course the Suez Canal and it is one of the most important trade routes in the world. Approximately 10%–13% of global trade passes through it (Hellenic Shipping News, 2019; Reuters 2020). The efficiency of seaborne trade makes the Suez Canal the most economically alternative for long-distance trade between China and East Asia on the one hand and Europe on the other.¹ At the same time, there are discussions among the various players and countries in the Levant region regarding additional options for establishing trade routes (some of which are new while others are a revival of old routes) between the Indian Ocean (its northwestern extension, namely the Red Sea, and its northern

1 In recent years, there has been discussion of another route between Asia and Europe along the northern coast of Russia.

extension, namely the Persian Gulf) and the Mediterranean. These overland routes would achieve several goals for the countries involved and in principle they can be divided into three categories:

1. **Financial gain:** There is a massive flow of trade between Asia and Europe. Even a small fraction of revenue derived from such trade for logistic and transshipment services represents a major source of income. In addition, a major trade route is accompanied by trade-related economic development such as financial services (banking, insurance and legal services), development of manufacturing industry, etc (Hall et al., 2011 pp 81).
2. **Political leverage over users of the trade routes:** In view of the economic dependence of most countries on trade, such as the import of energy and food products, the control of trade routes creates political leverage that can be translated into a higher international status and economic growth.
3. **Diversification of independent trade routes as a component of national security:** We have already mentioned the leverage attained by the owners of trade infrastructure over its users and therefore it is reasonable to assume that countries which feel constrained or threatened if their trade routes are controlled by a competing country or non-state organization will seek to diversify their trade routes, including the development of independent routes. In the Mediterranean region, the maritime trade routes converge to a number of chokepoints, namely the Strait of Hormuz at the entrance to the Persian Gulf, the Bab el Mandeb Strait at the southern entrance to the Red Sea and the Suez Canal that connects between the Red Sea and the Mediterranean. The convergence of sea routes in the Middle East to a number of chokepoints, some of which are located in political unstable areas, constitutes a potential risk to the flow of international trade and a risk to the supply chain.

The construction of infrastructure for trade routes is primarily influenced by three types of factors: geography, politics and technological-logistic considerations, which are related to the economics of trade. From a **geographic** perspective, the movement of trade is influenced by the terrain and topography of the land, such as mountain ridges, deserts, swamps, etc., while the sea routes are influenced primarily by the location of straits. There are also **political** factors that are critical in the movement of people and goods. Closed borders between states that are enemies; areas with a low level of personal safety due to terror and piracy; and administrative restrictions on movement or alternatively the encouragement of trade are among the factors with a significant influence on the movement of people and goods. However, political constraints—unlike mountain ridges or rivers—are a manmade obstacle and can

apply differentially to people of different nationalities or religions and to different types of goods. **Technological and logistic** factors also play an important role. Technology allows the construction of infrastructure that facilitates the movement through hard terrain and also the creation of new passages, such as the digging of tunnels through mountain ranges, the expansion and deepening of straits, bridging over wide valleys, etc. At the same time, technology also makes it possible to build means of transportation with greater capacity (such as ships, trains, etc.) and that are more efficient and lowers the cost of trade through economies of scale.

The advantages in creating overland connections between the Indian Ocean and the Mediterranean, alongside the surge in investment in infrastructure created by China's Belt and Road project (see below), which has also attracted local partners, have created an expectation in the Levant region of land corridors being built between the Indian Ocean and the Mediterranean.

China's Belt and Road Initiative

In 2013, China announced the Belt and Road Initiative which is meant to connect China to Eurasia and East Africa by means of physical infrastructure. The initiative includes a land component consisting of logistic corridors in Central Asia and Western Asia (since essentially there has been no significant land trade through Central Asia since the days of the Mongols and the ancient Silk Route) and the expansion of maritime connectivity by means of a network of seaports between China and Europe, including in the Mediterranean. Although the academic literature, the media and the public often treats the initiative as a single unit, it is in fact two separate frameworks: (a) the 21st Century Maritime Silk Road and (b) the overland Silk Road Economic Belt. These two initiatives were announced separately by President Xi of China: the Economic Belt Initiative was announced in September 2013 in Kazakhstan and the maritime Silk Route was announced in October 2013 while the Chinese President was visiting Indonesia (State Council et al., 2015). The two initiatives are each of interest to different players inside China: the Silk Road Economic Belt Initiative involves the building of logistic corridors that include rail lines, energy pipelines (natural gas and oil) and highways (including tunnels, bridges, etc.). It is instrumental in economic development within China and primarily the development of the western provinces, as well as regional development of the West and Central Asia.

In contrast, the Maritime Silk Road primarily involves the building and operation of seaports, as well as the accompanying industrial zones. The industrial zones often include industrial parks that are built and managed by the Chinese and house factories of Chinese manufacturers. In addition, there are Chinese investments in

heavy infrastructure, such as mines, energy facilities, etc. The core of the initiative is to ensure sea routes for the export of Chinese goods (both from China and by Chinese companies operating abroad, primarily in the aforementioned industrial parks) and also the import of energy products and inputs by China. For this reason, the Maritime Silk Road initiative is more relevant for the broader commercial and business sectors in China (Gonen, 2018).

The Chinese initiative has led to a wave of infrastructure investment throughout Eurasia, and there are many additional plans for investment throughout the Middle East.²

Chinese companies operate the following container terminals in the Mediterranean (COSCO, 2020; Hutchison Ports, 2020; Israel Ports Company, 2015):

1. Alexandria (Egypt): two terminals owned by the Hutchison company of Hong Kong (Dekheila and Alexandria) and a planned third terminal (Abu Qir).
2. Port Said (Egypt): The COSCO company controls 20 percent of the Suez Canal Container Terminal (SCCT), which is the main transshipment port on the Suez Canal, together with CMA CGM.
3. Haifa (Israel): concession held by the Shanghai International Port Group (SIPG) for the operation of the Hamifratz Port starting from 2021 and for a period of 25 years.
4. Piraeus (Greece): the COSCO company.
5. Saloniki (Greece): the Terminal Link company, a subsidiary of the China Merchant Port Holding company.
6. Kumport (Turkey): China Merchants Port Holding company.

Furthermore, in the context of the Belt and Road Initiative, both China and Chinese construction and operating companies have been mentioned as being involved in the building of overland trade routes in the Middle East (for further details on Chinese involvement—if it exists—see the description of the routes below).

2 In the context of the building of infrastructure, a differentiation should be made between direct investment (FDI) and the export of services. FDI consists of investment that leaves the source countries for the target country and includes ownership over the assets and infrastructure at a rate of over 10 percent of the asset's value and a major say in its management. On the other hand, the export of services involves the building of infrastructure by a foreign company only in the role of subcontractor. This is a service provided for payment and when completed the subcontractor has fulfilled his function; it is not an owner of the asset nor does it have any influence over its management.

Trade and transportation routes between the Indian Ocean and the Mediterranean

This section describes the main potential trade routes between the Indian Ocean and the Mediterranean (some of which are new and some of which have existed for many years), including a description of the initiators of the route, its advantages and disadvantages and the risk in the development of the routes as perceived by the players in the region. It is worth emphasizing that maritime trade is significantly more efficient than overland trade and it is not being suggested that land transportation projects will replace the flow of trade through the Suez Canal. What is being suggested is that the overland projects will provide diversification and flexibility in trade routes and the creation of excess capacity in view of potential barriers that may arise at one of the chokepoints described above, as well as providing logistic services to in-land destinations.

From a geographical perspective, the overland routes can be divided into two categories: routes that connect the Red Sea to the Mediterranean and routes that connect the Persian Gulf to the Mediterranean.

Suez Canal (Egypt): The original canal was inaugurated in the mid-19th century. When President al Sisi came to power in Egypt in 2014, a project to expand the Suez Canal was announced that would include a doubling of its width (though not along its entire length) with the goal of allowing more and larger ships to use the canal. The expanded canal was partially opened in August 2015. Alongside the expansion of the canal, the project included the establishment of industrial parks alongside it. The expansion of the canal was funded by Egyptian internal sources, including a loan from its citizens and the voluntary collection of gold jewelry in the streets. This is a national project that was financed independently, an important achievement for Egypt. The expansion of the canal was accompanied by the building of transshipment ports and industrial parks in order to provide employment to Egypt's huge and relatively young population and in order to take advantage of Egypt's position along the canal, which is a major global trade artery, while providing additional export, logistics and port services.

Apart from the element of self-reliance, the Chinese Tianjin Economic-Technological Development Area (TEDA) company³ built and invested in an industrial park outside the city of Sokhna at the southern end of the canal. In the context of national infrastructure development in Egypt, it is worth also mentioning the building of the

3 For further information see. <http://www.setc-zone.com/eng/zatdsysjmhqz/index.shtml>.

new administrative capital of Egypt which will be located in the area between Cairo and the Suez Canal.

Europe Asia Pipeline Company (EAPC) – Formerly Eilat Ashkelon Pipeline Company (Israel): During the 1960s, a joint project was carried out by Iran (pre-revolutionary Iran under the rule of the Shah) and Israel which included oil terminals at the cities of Eilat and Ashkelon and a pipeline between them. Over the years, the Company's energy infrastructure was expanded to allow for the two-way flow of oil, the enlargement of the Company's storage and the expansion of its activity also to natural gas.

All of EAPC's activity is confidential according to law and is not subject to public scrutiny (*Law for Oil Conveyance and Storage by an Operator*, 2017). Israel and Iran are currently in a process of international mediation—at least officially—with regard to the profits from the project (Harris, 2013).

Connection of a rail line to the city of Eilat (Israel): The idea of connecting the southern city of Eilat to the Israeli national train grid was already proposed in the 1950s and is brought up for public discussion in Israel every few years. Such a rail connection would make it possible to transport goods by rail from the port of Eilat on the red sea to Israel's Mediterranean ports and from there to Europe and also in the opposite direction, thus circumventing the Suez Canal. In theory, this can already be done today using trucks (and indeed there are sometimes containers that are transported overland from the port of Ashdod to the port of Eilat in this manner); however, this occurs only on a small scale and transportation by truck is not feasible on a large scale.

From an engineering perspective, this is a massive project but nonetheless feasible. Such a rail line would be about 300 km in length from Eilat to the city of Dimona and from there the goods would be conveyed by existing rail lines to the port of Ashdod or Haifa. The rail line would pass through the Arava desert region which is part of the Great Rift Valley, an almost completely desolate strip of land about 200 km in length through which the rail line would reach the southern Dead Sea area, which is about 400 meters below sea level. From there, it would climb 1200 meters to Ramat Arad (at the heights of 800 meters). Such a project would also involve moving the port of Eilat from its present location (see below).

It is not within the scope of this chapter to discuss the project in detail. We would only mention that a project of this scale would naturally have both positive and negative impacts of various types (for a more detailed discussion, see Feitelson et al.,

2013). If and when Eilat is connected to the Israel Railways system it will apparently have a huge positive impact on the development of the Arava and Negev regions, as well on regional commerce; however, it will also have an adverse effect on the economic and demographic fabric of Eilat, and will have far-reaching implications for the marine environment in the Gulf of Eilat. It is also worth mentioning the possible geostrategic implications for relations between Israel and Egypt.

The current port of Eilat is quite small and is meant to meet only the local needs of the Israeli economy. Israeli trade with the ports of Asia travels through the Suez Canal on the way to Israel's Mediterranean ports. Eilat's port cannot handle the flow of global trade and from a geographical perspective, namely due to mountain ridges surrounding Eilat, there is no room for the logistic yards that such a large port would require. The quarrying of the hard granite mountains around Eilat in order to build a logistic yard would be difficult and costly. The upshot is that if it is decided to make the port of Eilat into a major port it must be moved northward to the area of Nahal Arava, located on the border with Jordan, and it will be necessary to build a canal port, such that a ship will enter an excavated canal and its cargo will be transferred by cranes from both sides. From an environmental perspective, such a project will destroy the coral environment due to the suspension of sand in the water. From an economic and demographic perspective, the project would transform Eilat from a tourism and marine center into a port city, since massive ships and trains cannot coexist with tourism.

From an economic perspective, the basic analysis points to the high cost of construction due to the topographic obstacles, which require the establishment of a double rail line and uninterrupted railway traffic in order to justify the financial investment. Such railway traffic will feed into the Israel Railways system which is already overburdened. For example, cargo trains do not currently travel during the daytime in order to leave the routes open for passenger traffic, primarily during rush hour. Thus, such a project will place a burden on the existing railway infrastructure in the Center of Israel at the expense of passenger traffic.

While the business sector in Israel of course supports the project and both Prime Minister Netanyahu and Minister of Transportation Miri Regev have spoken of its necessity, the connection of the port of Eilat to the railway network has political, social and environmental implications that will likely delay its implementation for many years. The main political implication is competition with cargo traffic through the Suez Canal. The new Suez Canal is the flagship project of President al Sisi and the project could be interpreted as an Israeli provocation. The revenues from the Suez Canal are estimated in 2019 to be 104.6 billion Egyptian liras (\$6.65 billion) which

represents about 10 percent of the Egyptian government's total revenue (Reuters, 2020). In other words, the building of a rail line might be interpreted as an economic threat to Egypt, as a provocation to the Egyptian President personally and as a threat to Egypt's state revenue, even if overland transportation would not constitute a major threat to the flow of cargo through the Suez Canal. The peace treaty signed between Israel and Egypt in 1977 is one of Israel's main strategic assets and it can be assumed that Israel does not want to endanger it (Halevi, 2014).

The second issue is social-demographic and is related to the character of the city of Eilat, which is currently a tourist city whose main revenue is generated by hotels. It offers recreation on the coast of the Red sea, diving among corals, sailing and numerous other attractions in a desert atmosphere. It has a population of about 50 thousand and it is visited by over 2.5 million tourists annually, much of which is domestic tourism (ISR Ministry of Tourism, 2020). Becoming a regional hub port that is part of one of the world major trade route would mean transforming Eilat into a logistics center. Tourism and water sports cannot coexist with the traffic of massive ships and the continuous arrival and departure of train traffic.

Thus, it would appear that a project to connect the port of Eilat to Israel's national railway system would be a problematic venture and an expensive—though feasible—engineering endeavor. Such a project is also feasible from the perspective of internal Israeli politics and does not require international coordination as do cross-border projects. Nonetheless, it is strategically problematic for Israel's relations with Egypt and if it is carried out will completely transform Eilat – from a tourist city to a logistics center and there will be huge implications for the local population as well as for the marine environment in the northern part of the Gulf of Eilat.

An Aqaba-Ma'an-Irbid-Haifa railway connection

The port of Aqaba is Jordan's only access to the sea. The Jordanian coast is only about 26 km long and there is a shortage of coastline for the building of infrastructure.⁴

Jordan's population is largely concentrated in the northwestern region of the country, about 400 km from the port of Aqaba. In other words, cargo that is handled at Aqaba has a long overland distance to travel either to or from the country's population and

4 An exchange of territory between Jordan and Saudi Arabia, which was carried out within the framework of a 1965 agreement, gave Jordan additional waterfront.

industrial centers. The port of Aqaba also exports phosphates which are brought there by a slow rail line that connects the city of Aqaba to the city of Ma'an.⁵

The Jordanian railway network is in a rundown condition and most transport of goods is by truck. From a historical perspective, the Hijazi railway line cuts across Jordan from North to South but is not operational. According to media reports, Jordan has completed a feasibility study for expanding the old—though still active—railway line from the port of Aqaba to the city of Ma'an. According to the reports, the building of the railway line will be financed by the Saudis. The city of Ma'an is located on the historic Hijazi rail line and there are plans to rehabilitate it (Jordan Times, 2019).

From a geographic perspective, the most attractive option for logistically serving Jordan's large population centers in the northwestern part of the country is from the port of Haifa which is only 70 km from the border crossing between Israel and Jordan near the city of Beit Shean (the Sheikh Hussein Bridge). Israel recently inaugurated a new railway line to the city of Beit Shean and there is work being done to connect it to the border crossing. (The new railway line is also following the route of the branch of the Hijazi train). From the border crossing, it is only 30 km to the city of Irbid and 70 km to the capital of Amman, as opposed to 400 km and 330 km, respectively, from the port of Aqaba.

In other words, by building a railway line of only a few dozen kilometers to the northwestern part of the country, it is possible to logistically serve the large population centers in Jordan from the port of Haifa on the Mediterranean and by means of a modern railway system. This will eliminate the need for goods traveling between Jordan and Europe (such as fresh agricultural produce) to traverse the Suez Canal. Not only is the route much shorter but it also saves the cost of passing through the canal,⁶ the cost of transshipment at the port of Aqaba and the overland transport of goods for about 400 km between the port of Aqaba and the northwestern region of Jordan (Frantzman, 2018).

5 During the Iran-Iraq war, Iraq's ports on the Persian Gulf were closed. As a result, all of Iraq's trade flowed through the port of Aqaba. This was a period of prosperity for the economy of southern Jordan through which trucks carrying goods traveled for hundreds of kilometers by way of the desert. In peace time, when Iraq's ports are operating normally, the transport of goods between the port of Aqaba and Iraq is too costly, and certainly in the case of trucking (as opposed to rail transport).

6 The cost of passing through the canal for a medium-sized ship can be up to \$250 thousand.

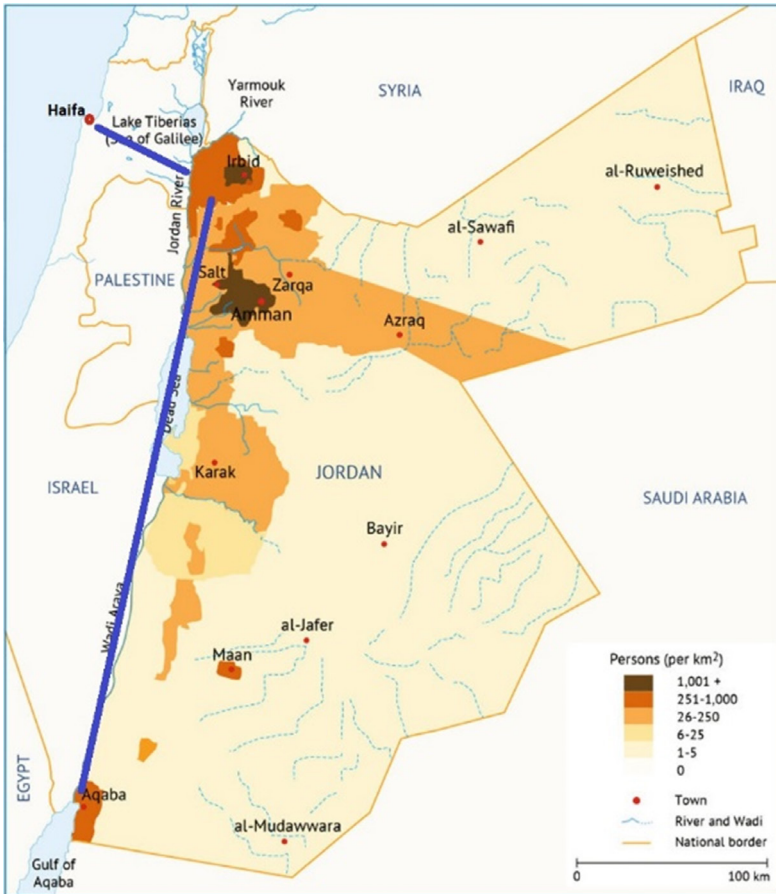


Figure 1: The distance for overland transport from the ports of Haifa and Aqaba to the Irbid area in Jordan (author's modifications of the original picture – Almuhtady et al., 2019)

In addition to the possible railway connection between Israel and Jordan in the area of Beit Shean, Israel is conveying water to Jordan in this location in compliance with the 1996 peace treaty between the two countries. Furthermore, a gas pipeline is currently being built from Israel's gas fields in the Mediterranean to Jordan in the same route. The sale of the natural gas is by way of an Italian mediate company (Reed, 2014; Cohen and Barakat, 2014).

The overland corridor from Haifa to Jordan and the Persian Gulf states

A discussion of the overland corridor that connects Haifa on the shores of the Mediterranean and Jordan must also take into account the countries located beyond Jordan, to the East and to the South, namely Saudi Arabia and some smaller states

(the UAE and Bahrein) which are located on the Persian Gulf. There are numerous reports in the media of a warming of relations between Israel and the Sunni world, thus strengthening the alliance against (Shiite) Iran, the common enemy. In this context, it is of course worth mentioning the normalization agreements between Israel and the UAE (the Abraham Accords) and between Israel and Bahrein, which were signed in September 2020 at the White House.

In addition, there are friendly relations between Israel and Oman and Prime Minister Netanyahu visited the Omani Sultanate in 2018 (Government of Israel, 2018). These developments would not have been possible without the explicit approval of Saudi Arabia, the dominant player in the region.

Saudi Arabia is surrounded geographically by three straits: the Strait of Hormuz in the East, the Bab el Mandeb Strait in the South and the Suez Canal in the North. Saudi Arabia is experiencing rapid infrastructure growth which includes a railway network on a more or less East-West axis and the development of ports on the Red sea. These projects are also partly a reaction to the Iranian threat on its eastern shores and the shift of economic activity westward, partly due to national programs for the diversification of the country's economy away from the traditional dependence on oil exports (Saudi Vision 2030). Nonetheless, in addition to the Saudi move westward, the country is definitely interested in diversifying its trade routes, with the goal of providing alternatives to the sea route that passes through the aforementioned straits. This includes an overland route to the Mediterranean by way of Jordan, by means of connecting the road systems (and rail lines in the future) of Saudi Arabia and Jordan at the Al Hadithah border crossing and from there using the Jordanian transportation system in the direction of the port of Haifa.

The UAE and Bahrein are in an even more difficult position, in that their sea trade is by way of the Strait of Hormuz which is under Iranian control. Thus, they would definitely be interested in the diversification of their trade routes to the west by way of a land corridor to the Mediterranean.

A railway connection, as described above, between the port of Haifa on the Mediterranean eastward to Jordan's population centers and from there to the city of Irbid and the capital city of Amman and southward in the direction of Aqaba on the basis of the historic Hijazi rail line, as planned by Jordan, on the one hand, and in the direction of Saudi Arabia, on the other hand, will connect the Indian Ocean and the Mediterranean. Such a connection makes a lot of sense economically and essentially will connect the cities of Jordan to two ports – in the South, a port on the Red Sea- Aqaba, and in the West, a port on the Mediterranean- Haifa.

However, the establishment of long-distance trade routes across the Middle East would create significant security challenges to protect the routes against terror and crime.

The possibility of using the port of Haifa to serve northern Jordan is feasible and has been discussed for many decades. As described, Israel and Jordan are connected through the supply of water and in the near future through the supply of gas. Nonetheless, and despite the economic and commercial advantage of transshipping goods by way of the port of Haifa to Jordan, there is no significant movement of goods along this route. There are two main reasons for this:

The first is opposition on the Jordanian street to any ties with Israel. In this context, it is worth mentioning that the Palestinian minority in Jordan makes up about 30 percent of the population and therefore there is opposition to consuming goods that arrive by way of Israel. The second is that by local Jordanian procedure, containers are prohibited to be transported through the border crossing between Israel and Jordan and the goods must be transferred "back to back" from one truck to another. The transfer of the goods between trucks is time-consuming and does not allow for trade on a large scale. This situation is the result of both security considerations and Jordan's desire to maintain as much economic activity in the port of Aqaba as possible, in addition to the fact that the King's power base is located in the South of Jordan, where Aqaba is located (Ehud Gonen, 2020).⁷ For these reasons, and despite the large-scale plan for reviving the railway network in Jordan, including from the city of Aqaba northward, Jordan is not apparently planning a connection to the border crossing with Israel at this stage. This is despite the fact that this would be a short connection of only a few dozen kilometers that would reduce the costs of Jordanian trade.

Overcoming the political issues of a trade route between Israel and Jordan can be accomplished by the mediation of a foreign operator, as in the case of the gas pipeline between Israel and Jordan (which as mentioned is mediated by an Italian company) or by means of a partnership with companies from the Arab countries that would operate the old port of Haifa (the current government owned port), which is currently in the process of privatization. Press reports have mentioned the interest of a Dubai company in being part of a consortium that would purchase the port (Ben Gedalyahu, 2020). A partnership with a Dubai company in the port of Haifa may blunt the public opposition in Jordan to trade by way of Israel.

7 Gonen, E. (2020). Interview with prof Professor Asher Susser.



Figure 2: Summary of the discussed trade routes

Trade between Jordan and Syria has often been disrupted in recent years due to the closing of the border crossing between the countries due to the civil war in Syria. Nonetheless, the border crossings between Jordan and Syria at Nassib and Alramatha were opened in 2019 and it appears that Jordanian traders prefer this route to the Mediterranean by way of ports in Syria and Lebanon over the route to Haifa. This is in spite of the superior logistical infrastructure in Israel and the lack of political stability in Syria and Lebanon.

The border crossings from Iraq to Syria (the Shiite crescent) are marked in green; the border crossings between Saudi Arabia and Jordan are marked in black. The existing rail lines are marked by solid lines; planned rail lines are marked by dotted lines.

An oil pipeline from Iraq to the Mediterranean

Connecting the large oil reserves in Iraq by means of a pipeline to a port on the Mediterranean will enable the flow of oil while circumventing the Suez Canal and shortening shipping times to Europe. A pipeline has a relatively high capacity (which

is of course dependent on the diameter of the pipeline, the type of pumps, etc.). There are three main historic routes for oil pipelines in the region that's depart from Kirkuk (Iraq): the Kirkuk-Haifa line (Israel), the Kirkuk-Baniyas line (Syria) which branches off from it and the Kirkuk-Ceyhan line (Turkey).

The Kirkuk-Haifa oil pipeline: During the British dominance of the Levant following the First World War, a 940 km oil pipeline was built from the city of Kirkuk in Iraq to the refineries at the Bay of Haifa on the Mediterranean. The pipeline's route connected Iraq and Mandatory Palestine by way of Jordan. Pumping stations were built along the length of the pipeline and airports were built alongside it, most of which are still in use today. The pipeline was in operation during a period of 13 years (1936–1948) until the establishment of the State of Israel. There are no plans to build a new pipeline along this route.

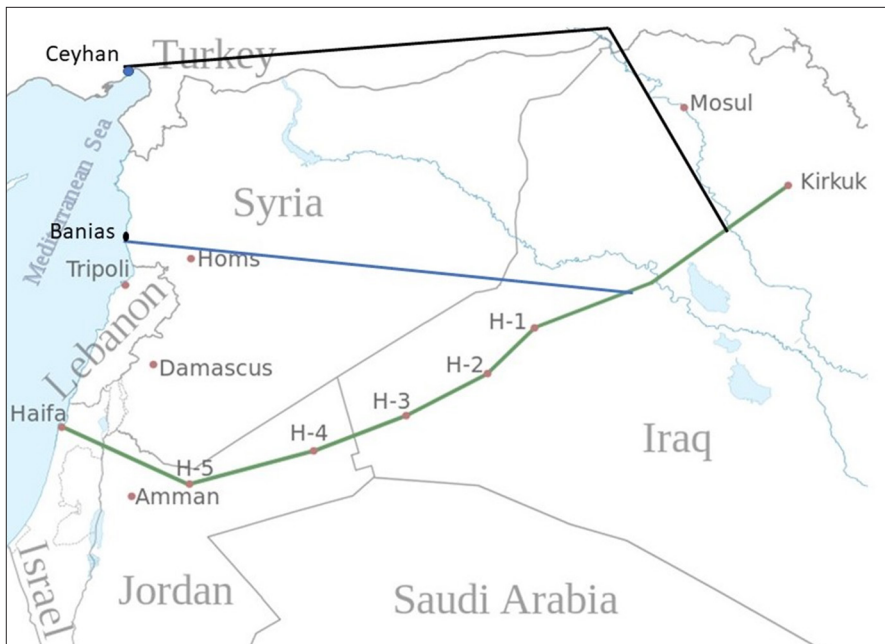


Figure 3: The oil pipelines from Iraq to the Mediterranean – the Kirkuk-Haifa line (Israel), the Kirkuk-Baniyas line (Syria) that branches from it and the Kirkuk-Ceyhan line (Turkey). (Source: the author)

In 1952, a branch of the pipeline was added that connects the city of Haditha in Iraq to the port city of Baniyas in Syria (the Kirkuk–Baniyas pipeline). This branch operated until 2003. Syria, which is ruled by the Alawite Baath party, supports Iran

and therefore it was not willing at times of political tension in the region, to provide Iraq with access to export its oil to the Mediterranean sea through its territory. A subsidiary of Gazprom, the Russian gas company, won a tender to rehabilitate the Syrian portion of the pipeline; however, it does not appear that the pipeline will be rehabilitated but rather it will be reconstructed. If this does occur, it can be assumed that the Russians, who have a significant presence in Syria and engineering capabilities for building a long-distance energy pipeline, will be the ones to implement it.

The **Kirkuk-Ceyhan pipeline** was built in the 1970s and circumvents Syrian territory. The pipeline is active despite repeated attacks on it as the security situation deteriorates in Iraq and on the southern border of Turkey.

The Shiite Crescent

The Shiite crescent is a land corridor that Iran is trying to establish based on a Shiite continuum or the presence of local pro-Shiite groups from Iran to the Mediterranean coast of Syria and Lebanon.

The motivation for building this corridor is primarily based on a military strategy to provide logistic support to Shiite militias that are loyal to Iran in Syria and Lebanon (Hezbollah) and to allow for the movement of military forces along this route and perhaps in the future to establish a naval base or a port on the Mediterranean coast in Syria or Lebanon. Such a corridor will cross the border between Iraq and Syria, primarily in the area between the city of Qam in Iraq and al Bukamal in Syria or south of there in the area of the city of Rutba in Iraq.

This corridor would achieve the strategic objectives of Iran and would allow it to "paddle their feet" in the Mediterranean. More than being an overland logistic corridor for purposes of trade, this is a geostrategic initiative to fulfil Iran's aspirations for religious and national expansion. Iran supports President Assad in the civil war in Syria (which began in 2011) and it is possible that part of the war's endgame from the Iranian perspective is a permanent presence on the shores of the Mediterranean.

Discussion and Conclusion

Following is a table summarizing the main routes discussed above between the Red Sea and the Mediterranean, both existing and planned, including the initiators and the sources of financing:

Route	Initiator and sources of financing	Comments
Expanded Suez Canal	An Egyptian initiative that is self-financed and self-built. There is Chinese involvement in the projects alongside the canal (industrial parks and parallel rail lines).	Long-distance sea transport is more efficient, cheaper and cleaner in terms of ton per km than any other type of transport. The Canal will remain the main trade route between the Mediterranean and the Indian Ocean for the foreseeable future.
An Israeli rail line to Eilat	An Israeli initiative, apparently with Chinese involvement in financing and construction.	Development of the southern part of Israel. Develop regional trade and the Asia-Europe trade. Serious demographic and environmental consequences for the city of Eilat.
Haifa-Irbid rail connection	The Israeli portion will be implemented by Israel (and has almost been completed). The Jordanian part will have international financing probably involving Japan, the World Bank and Saudi Arabia (Gonen, 2018) ⁸	Economically efficient for Jordan and profitable for Israel. The political opposition in Jordan means that the project will remain on the drawing board and there is no actual planning to implement the project. It will provide connectivity to Saudi Arabia and the Gulf State countries.
Aqaba-Amman rail connection	A Jordanian initiative financed and supported by the Saudis and others.	
Iraq-Syria oil pipeline	An Iraqi-Syrian pipeline being built by Russia.	Political friction between Iraq and Syria and an unstable security environment (potential for sabotage) limit the feasibility of the project for the foreseeable future.

1. **The growing presence of China in the Levant region as part of the Belt and Road Initiative:** It appears that the involvement of China in trade and logistic infrastructure in the Levant region at this stage is focused primarily on the domain of seaports. Despite the discussions and the various media reports, it is reasonable to assume that there will not be any major Chinese investment in cross-border overland trade routes in the Levant at this stage. This is apparently due to concerns about political instability in the region. It is possible that China will be involved in logistic projects that do not cross borders (Evron, 2019).
2. **The rise of Iran:** The rise of Iran as a regional power has led to the creation of a regional alliance of Sunni countries together with Israel. This alliance was formally established with the signing of the Abraham Accords between Israel and the UAE in 2020. From the viewpoint of trade routes, it appears that the rise of Iran is pushing Saudi Arabia to diversify its trade routes and to transfer infrastructure to the seaports on the Red Sea in the west of the country, in an effort to circumvent the Strait of Hormuz. In addition, it appears that there are Iranian efforts to

8 Gonen, E. (2018). Interview with Japanese diplomat stationed in Israel.

establish a land connection between Iran and the Mediterranean, perhaps including a future naval base on the Mediterranean in one of Syria's ports. These efforts have met a determined military response from Israel.

3. The rehabilitation of Syria and Lebanon: There is deep Russian involvement in Syria, which includes a naval base and an air force base, as well as a long-term leasing of land at these locations by the Russians (for further details on the Russian presence, see Gilead, 2019). It appears that the Russians will try to collect "payment" for rescuing Bashar el Assad from the revolt against him that started in 2011 by means of, among others, economic compensation, such as royalties from infrastructure use and from energy assets in Syria. Pursuant to paragraph (a) above, it does not appear that any major Chinese investment will be made in Syria in the foreseeable future, since the country is under strong Russian influence and Syria represents a higher political risk profile than China is willing to deal with. Nonetheless, it is possible that there will be Chinese involvement in the financing of the rehabilitation of the port of Beirut following the explosion that destroyed large parts of it (on August 4th, 2020). This is the kind of investment that is in line with Chinese involvement in the region, as surveyed here.
4. The US has not been mentioned in this document and that is not without reason. It appears that the US and American companies are not active in logistic infrastructure in the Levant.
5. There appears to be a low potential for the implementation of cross-border projects in the current political situation in the Levant. Projects that are contained within the borders of a single country (such as the Suez Canal and EAPC) operate without any disruption and there is a high probability that such projects will be implemented in the future (such as connecting Eilat to the Israel rail system). However, the coalition of Sunni countries against Iran, which has been forced to include Israel, raises the chance of large projects involving trade routes in the Sunni-Israel space. This includes the connection of Saudi Arabia, the Persian Gulf states and Jordan to the network that also includes the port of Haifa, although these large-scale projects face political obstacles that arise from the continuing conflicts in the Middle East and the major security challenges involved.

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An Examination of the Coastal Life Rescue Services in Israel – Does Israel Need a lifeboat service?

Ariel Eshed

Introduction

During the past decade, an average of 30 individuals have drowned on Israel's beaches each year. This number does not include about 20 drownings in natural and artificial ponds and pools throughout Israel. There are three layers of security and rescue on Israel's shores: The navy, which operates out of three bases (Haifa, Ashdod and Eilat) is responsible for guarding the international coastline of the Mediterranean and the Gulf of Eilat. Internal security, enforcement of public order and rescue are the responsibility of the Maritime Police Branch of the Israel Police, which operates out of five bases – Haifa, Tel Aviv, Ashkelon, Eilat and Sea of Galilee. Finally, rescue services on the official beaches are operated by the local councils. This article will examine the question of whether Israel should add another layer to its rescue services in the form of a lifeboat service.

It is difficult to compare sea rescue organizations between countries as the structure and role of those organizations vary between different countries¹ therefore the comparison will be made to a parallel coastal rescue organization, which focuses only on sea rescue – the Royal National Lifeboat Institute (RNLI).

The article consists of four chapters: an introduction; an analysis of the coastal rescue services in Israel and of the demand for those services; a parallel chapter on the situation in Britain (which was chosen as a reference country); and a conclusion with recommendations.

Background

According to the World Health Organization, drowning is the third cause of traumatic death worldwide and accounts for 7 percent of total traumatic deaths. In 2014, 372,000 people drowned worldwide while in 2016, for example, about 320,000 died, most of them children and men. Ninety percent of drownings worldwide occur in the developing World. In Africa, for example, there are twenty times more drownings than in Western Europe. These figures are not precise since countries

1 The Unique Role of the U.S Coast Guard. 2020. <https://www.military.com/join-armed-forces/coast-guard-mission-values.html#:~:text=The%20Coast%20Guard%20is%20the,Port%20Security%20and%20Military%20Readiness>

report on drownings in different ways. Thus, for example, there are countries that do not define a death caused by a flood as drowning, and there are countries that count suicide by drowning as drowning and those that do not. Apart from loss of life, these drownings have an economic cost, since 45 percent of the victims are part of the workforce in their country. In the US alone, the economic cost of drownings is \$273 million per year and for the entire world it was estimated to be \$146.9 billion in 2014.^{2,3}

The regulatory situation in Israel

The total length of Israel's coastline is about 319 km; of which 196 km is on the Mediterranean, 56 km is on Sea of Galilee, 14 km is on the Red Sea around Eilat and about 53 km is on the western side of the Dead Sea, not including the evaporation ponds of Dead Sea Works sites. Of these, only 19 km (6 percent) are defined as open to public bathing and they are organized into 155 official beaches. Most of these are only open for a period of six months during the year.^{4,5}

Apart from the official beaches, there are 162 km (53 percent of the coastline) that are not permitted for public bathing at any time, since they are in use by the Navy or by infrastructure facilities (Israel Electric Company, Israel's ports, etc.). Another 126 km (41 percent) have no status, that is, they are not official beaches for public bathing and have no supervision, although the public has access to them.⁶

Life rescue services in Israel as already mentioned, there are three layers of security and rescue on the coasts of Israel. The outer layer is the naval arm of the IDF. This includes a number of flotillas, where Flotilla 7 (patrol squadrons equipped with Fast rigid patrol boats) and the port Security Unit (Called in Israel – Snapir and equipped with semi-rigid boats) are the relevant ones with respect to rescue at sea. It is unnecessary to describe here the number of boats, the size of their crews or their deployment since the task of rescue at sea and assistance to ships in distress is not part of their mission. The mission of Flotilla 7 is to prevent terrorist activity from

2 World Health Organization – Drowning. 2020.
<https://www.who.int/news-room/fact-sheets/detail/drowning>;

3 RNLI – Estimating the Global Cost of Drowning. 2015.
<https://rnli.org/-/media/rnli/downloads/15452-cost-of-drowning-report.pdf>

4 Israel list of official beaches. <https://www.gov.il/he/Departments/news/beaches-list-2019>

5 Iliia Elihu, (2017); Rescue services on the beaches in Israel. The Knesset research center Israel.
https://fs.knesset.gov.il/globaldocs/MMM/c1bccf17-846b-e711-80d6-00155d0a6d26/2_c1bccf17-846b-e711-80d6-00155d0a6d26_11_9468.pdf. page 4.

6 *ibid.* page 6.

the sea while the Port Security Unit focuses on guarding the ports. In the US, for example, these tasks are the responsibility of the Coast Guard.⁷ Nonetheless, there are extraordinary events, which are usually far from Israel's coast, in which the navy has taken part in rescue operations. This was the case in 2005 when a Syrian bulk carrier sank 56 km west of Nahariya and two Israeli missile boats joined French and American boats in the search for survivors.⁸ In 2005, a patrol boat saved three fishermen whose boat had sunk in a storm in the Bay of Haifa⁹ and in 2016 the navy's control center directed a commercial vessel and an air force helicopter in the rescue of two individuals from a yacht that sank in the Bay of Haifa.¹⁰

The second layer of defense and rescue is the Maritime Police Unit of the Israel Police. This unit, which until 1977 was called the Coast Guard, is equipped with about 10 Hornet-type boats (semi-rigid fast rescue boats) and a number of smaller rubber dinghies and Jet-skies (PWC – personal watercraft). Its mission is defined as enforcing the law and maintaining order along Israel's coasts, as well as rescue operations at sea. In order to carry out these missions, the Unit has five operational bases: Haifa, Tel Aviv, Ashkelon, Eilat and Sea of Galilee. Each base is under the authority of the district in which it is located and professionally they report to the commander of the Maritime Police, who is based in the National Headquarters in Jerusalem. Each base includes about two Hornet-type boats and a number of PWC's. According to the police bylaws, the Maritime Police are responsible for rescue on non-official beaches (which constitute a majority of Israel's beaches) and for the location and rescue of bathers who have gotten too far from shore, whether intentionally or that they were carried away. In the Mediterranean, the distance between the Haifa station and the Tel Aviv station is about 90 km and the distance from the Tel Aviv station to the Ashkelon station is about 50 km. The maximal speed of a Hornet, which is the main boat of the Maritime Police, is 40 knots. In other words, the first boat will reach an event that takes place between Tel Aviv and Haifa in about 40 minutes.

Following are the bylaws of the Israel Police that specify their coastal duties, as revised in 2000:

Objective: To fulfil police duties along Israel's coast in general and the enforcement of the law relating to vessels in particular. Tasks:

1. To carry out rescue operations at sea when necessary (apart from on official beaches).

7 IDF web site. <http://navy.idf.il/Article/3808>

8 Ynet (21 April 2005). <https://www.ynet.co.il/articles/0,7340,L-3075442,00.html>

9 Yney (16 October 2005). <https://www.ynet.co.il/articles/0,7340,L-3155806,00.html>

10 Maritime Heritage watch website. <https://bit.ly/3jbRZ7T>

2. Enforcement of laws regarding the use of small boats operating at bathing beaches.
3. To assist in rescue operations carried out by other maritime organizations.
4. To prevent the entry or exit from Israel of people and vessels (apart from ships) not by way of the ports, which serve as border checkpoints.
5. To carry out maritime patrols in order to prevent smuggling by small boats of drugs, valuables and weapons.
6. Enforcement of the law regarding the licensing of vessels and their operators.
7. Maintaining public order on the coasts of Israel.¹¹

In addition to the Maritime Police, there are a number of diving units in Israel whose task is to locate and rescue missing persons in bodies of water. Two of them (Divers-North and Divers-South) are part of the Israel Police. The Israel Firefighters have divers as part of their Special Rescue Unit. The divers of the Firefighters are the only employed divers while those in the other units are volunteers. In certain circumstances, when these units are unable to locate a missing person, the navy's Unit for Underwater Works, which has more advanced equipment, is called in and given responsibility over the event. The two most prominent instances of intervention by that unit in civilian searches were in the location of the bodies of three drowned individuals during Passover 2017¹² and the location of the body of soldier, who drowned in the Sea of Galilee while on vacation in 2014.¹³ It is unnecessary to describe these units since they are not involved in rescue but rather in the location of bodies of those that were not rescued.



Figure 1: Divers-North in action in Sea of Galilee (photo by the author)

- 11 Israeli police general secretary orders (11 June 2000). https://www.police.gov.il/menifa/01.02.03.07_1.pdf
- 12 Ynet (18 April 2017). <https://www.ynet.co.il/articles/0,7340,L-4950067,00.html>
- 13 Walla (14 May 2015). <https://news.walla.co.il/item/2854363>

The third layer of rescue, and essentially the one closest to the coast is the lifeguards on the official beaches. Usually, this layer is the most active and it is here that most bathers are located. The rescue services on Israel's coast bring together a number of government and regional organizations: the certification of lifeguards is the responsibility of the Ministry of Labor; the operation of official beaches and their supervision is carried out according to the regulations of the Ministry of the Interior; and the lifeguards and other beach workers are employed by the local municipalities directly or are subcontracted by them. The lifeguards have rescue equipment that includes a loudspeaker system, life belts, a Hasake' (Local Israeli style stand-up large paddleboard), and on some beaches also PWC's that make it possible to extend the range for rescue.¹⁴

In addition to rescue equipment, the lifeguards have basic resuscitation equipment and all of them are qualified to provide first aid (Basic Life Support – BLS). One of the problems that has been raised by the Knesset Research Department (in a 2016 document that describes the situation on the coasts) is the fact that only some of the official beaches have direct communication between the second layer and the third, that is, between the lifeguards and the Maritime Police Unit. On the rest of the beaches, the lifeguard must call the Police hotline (100) in order to bring in the Maritime Police.¹⁵ It is estimated that today most of the beaches have cellular communication between the lifeguards and the Maritime Police with whom they are in constant contact; however, this communication is not subject to formal work protocols.



Figure 2: PWC of the Haifa Maritime Police (photo by the author)

14 see note 5.

15 see note 5, p. 13.



Figure 3: A *Hornet* boat of the Sea of Galilee Maritime Police (photo by the author)

Rescue activity in Israel

According to the report of the Knesset Research Center, the most up-to-date document on this subject, in 2016 the Maritime Police carried out 523 rescues of individuals, 461 cases of assistance provided to individuals and 206 searches for missing persons. The vast majority of the activity took place in the Sea of Galilee in which many bathers use inflatable toys and are carried away by the western winds that blow onto the lake during the afternoon hours, and require assistance in order to return to shore.¹⁶

The attempt to gather precise data on drownings and rescues on the various beaches in Israel is quite difficult since the various organizations relate to different events and to different periods. Thus, for example, Magen David Adom (MDA – Israel's first aid organization) relates to all events in which an ambulance was dispatched to a beach and on an annual basis, while the Ministry of the Interior relates only to events that resulted in death and its data relates only to the season when the beaches are officially open for bathing. Some of the organizations specify where the drowning occurred (the Mediterranean, the Red Sea, etc.) while others do not. And so on. However, *on the bottom line*, it is possible to create an overall picture in which the trend is clear, even if the exact numbers are not. The data are summarized in Table 1.

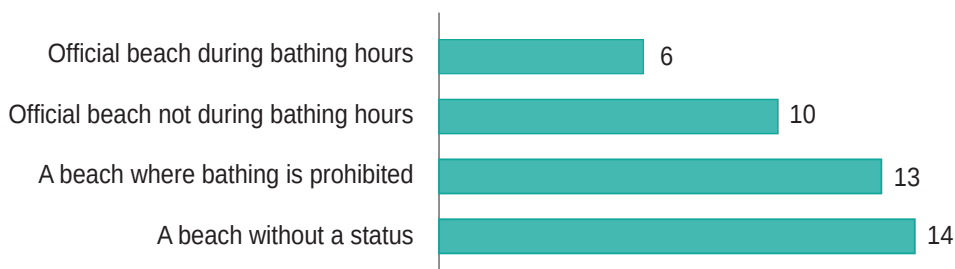
For the purposes of this discussion, drownings in public and private pools, as well as in rivers and streams, will not be considered since we wish to relate to drownings in the Mediterranean, Red Sea and Sea of Galilee only, as stated in the introduction, which occur at a rate of about 30 per year.

¹⁶ see note 5, p. 14.

Table 1: Number of drownings in Israel, 2015–19¹⁷

Year	Number of fatal drownings	Mediterranean	Pools and lakes	Number of rescues and cases of assistance to vessels by the Maritime Police
2019	46	27	19	617
2018	72	29	43	779
2017	39	30	9	866
2016	57	40	17	770
2015	30			652

It is worth mentioning that most of the drownings occur at non-official beaches or on official beaches but not during the official bathing hours: 14 percent when a lifeguard is on duty and the rest after the official beach hours or on a non-official beach. The distribution of drownings according to type of beach is presented in Figure 4.

Figure 4: Drownings in 2016 according to type of beach¹⁸

Rescue in Britain

In Britain, a country with a long maritime culture and history, there are also a number of layers of rescue and coastal protection. As in Israel, the Royal Navy is responsible for the defense of Britain against various threats and there are maritime police units which are part of the various police districts and are responsible for maintaining law and order and guarding the coast. However, there are two additional organizations in Britain that do not exist in Israel: the Coastguard, which is responsible for rescue in Britain's territorial waters and along the coast (people that have fallen from coastal cliffs or become stranded in tidal areas, for example) and the Royal National Lifeboat Institute (RNLI). Most of the RNLI activity is coordinated by the Coastguard where the RNLI is active in the maritime range while the Coastguard has a helicopter wing

17 Table sources: see note 5, pp. 22–23. <https://www.mdais.org/news/271019>; <https://www.ynet.co.il/articles/0,7340,L-5614856,00.html>; Data from Israeli Police as for 17 August 2020.

18 see note 5, pp. 22–23.

that provides assistance when needed. In any case, even if the call goes directly to the RNLI, the Coastguard has responsibility for the commanding of the event.¹⁹

The RNLI was established in 1824 and since then has rescued more than 140,000 people. It is operated primarily by volunteers and operates on three levels: rescue at sea, which involves about 444 lifeboats at 238 stations along the coast of England, Scotland and Northern Ireland. The RNLI is also responsible for the training of lifeguards on the official beaches and for teaching children about water safety. For example, in 2018 alone, 756,378 children and youths attended some sort of lecture or training on the subject of water safety given by one of the organization's volunteers.²⁰

The RNLI is proud that apart from the station on the Thames River in London and in the Port of Portsmouth (which due to the high level of activity are operated 24/7 and by full-time employees), all of the others stations are operated by about 5,600 volunteers who live nearby, which is in addition to a salaried foundation workers that manages the organization and maintains the boats. The RNLI has set itself a limit of less than 10 minutes to dispatch a lifeboat from the time a call comes in and it has met that goal. For example, the national average for 2018 was 9.7 minutes.

The RNLI provides a number of rescue and prevention services. The most famous of them is the lifeboats themselves. There are a number of types of lifeboats, ranging from small rubber dinghies for assistance close to shore (a swimmer who gets carried away, vessels stranded on a sandbar close to shore, etc.) to the larger boats for assistance out at sea, which are capable of going out under any weather conditions. The RNLI has 82 lifeboats for the open sea (of five different types), four hovercraft (which operate primarily in areas where the high and low tides cover particularly large areas) and another about 330 rubber boats of four different types.

In addition to the operation of these lifeboats, the RNLI operates 248 bathing beaches, and provides consulting to several hundred more throughout the UK. In addition, it has a comprehensive educational program for children in kindergarten up to high school. Some of these programs only involve lectures while others involve hands-on teaching in pools and in the sea. All of the programs are grouped under the name "Respect the Water".

19 OTS News. 2019. Do You Know the Difference Between the Coastguard and the Lifeboats <https://www.otsnews.co.uk/know-difference-coastguard-lifeboats>

20 RNLI. 2018. Operational Statistics. https://rnli.org/-/media/rnli/downloads/20173445_ops_stats_report_2019_v6_lr_single_pages.pdf; Morris, High. 2017. 27 things you'd never know about Britain if it were not for Ordnance Survey. <https://www.telegraph.co.uk/travel/destinations/europe/united-kingdom/articles/ordnance-survey-facts-about-great-britain>

As mentioned, the RNLI operates 238 stations along the coasts of England, Scotland and Ireland (although Ireland is an independent country, the RNLI is also active there and includes Ireland in its annual figures). It is responsible for 31,368 km of shoreline, of which 19,267 is on the main island and Ireland.²¹ The RNLI has 15 stations on the smaller islands, such that if we divide the coastline of the main island and Ireland (19,267 km) by the number of stations on them (223), we obtain an average of 86.4 km per station. This is only an average and there are less populated areas in northern Scotland where the distance between stations is greater than in more populated areas.²²



Figure 5: A Shannon-type boat is urgently dispatched from the Hoylake station (photo: RNLI 2018)

Table 3: Number of drownings in Britain and Ireland, 2015–2019²³

Year	Number of drownings	Number of rescue operations	Successful rescue with certainty	Number of emergency dispatches of boats
2019	223+64	38,713	374	8,941
2018	263+79			8,964
2017	255+72	32,116		8,436
2016	265+94	20,538	558	8,851
2015	321+92	14,814		4,300

21 Different sources are liable to cite different distances based on whether one measures every small bay, or a straight line is drawn that circumvents them and other factors.

22 RNLI 2018, see note 19.

23 Table sources: RNLI 2018, see note 19; National Water Safety Forum. 2019. Reports and Data. <https://www.nationalwatersafety.org.uk/waid/reports-and-data>; Water Safety Ireland. 2020. Statistics. <https://watersafety.ie/statistics>; RNLI. 2016. Annual Report and Accounts. <https://www.green-park-jobs.co.uk/RNLI-FD/downloads/annual-report-and-accounts-2016.pdf>; Walker, David. 2016. Figures reveal 321 people died in accidental drownings in 2015. <https://nationalwatersafety.wordpress.com/tag/statistics>; *Irish Examiner*. 26.11.2019. 64 people have drowned in 2019 so far. <https://www.breakingnews.ie/ireland/64-people-have-drowned-in-2019-so-far-966587.html#:~:text=64%20people%20have%20drowned%20in%20Ireland%20so%20far%20this%20year,11%20Irish%20citizens%20drowning%20abroad>

Notes:

- Number of drownings – England + Ireland
- Not including suicides in bodies of water and bodies dumped in the water following a criminal act.
- Although the annual totals are exact, they are not always identical in their criteria over the years and therefore some of the cells in the table are blank.
- The RNLI does not specify how many people drowned and where (near the shore, in a lake or out at sea).

The table points to an interesting trend, namely that the number of rescue operations has increased over time and accordingly the number of drownings has declined.

Discussion and Conclusions

As we have seen, the collection of accurate data is not a simple task, neither in Israel nor in Britain and Ireland. In Israel, there is no organized gathering of data and each organization (Magen David Adom and the Ministry of the Interior) counts the events differently. In Britain as well, which is better organized in this area, there are differences in the criteria for calculating annual figures. Since the figures for Britain do not specify how many people drowned on the beach, how many drowned in a lake or river and how many went down with their boat out at sea, it is difficult to carry out an accurate comparison to Israel. Nonetheless, using all of the sources and the data that was gathered an overall picture can be arrived at.

Britain's population was 67,530,172 in 2019.²⁴ To this should be added the population of Ireland, i.e. 4,882,445.²⁵ In that year, the population of Israel was 8,519,377 (not including Judea and Samaria).²⁶ The average number of drownings in Israel in 2019 can then be calculated as one for every 185,203 individuals, while in Britain and Ireland the figure is one for every 252,308 individuals. In theory, the ratio of drownings in Israel is much higher than in Britain and Ireland, a fact that might justify the expansion of the rescue services in Israel; however, this statistic doesn't tell the whole story. First, while in Britain swimming lessons are part of the curriculum in the schools and as mentioned there are numerous educational activities in order to

24 World Meter. 2020. UK Population.

<https://www.worldometers.info/world-population/uk-population>

25 World Meter. 2020. Ireland Population

<https://www.worldometers.info/world-population/ireland-population>

26 World Meter. 2020. Israel Population

<https://www.worldometers.info/world-population/israel-population>

teach children about correct behavior in the water, in Israel there are sectors in the population that rarely go to the beach and their children do not learn how to swim. Unfortunately, most of the drownings occur among these sectors.

Furthermore, in 2017, the public in Britain owned 1,185,243 private boats of various types (which include only boats that require a license and not small sailboats, kayaks, etc.).²⁷ In Israel there were only 24,000 boats in that same year (2,900 of which are anchored in marinas and the rest on the shore).²⁸ In other words, there is a boat for every 57 people in England while in Israel the figure is one for every 339 people (which is a subject for a different study – namely, why are so few Israelis involved in water sports?). Also in England's European neighbors there are a large number of boats and every so often the RNLi provides assistance to European vessels visiting British waters. In any case, this statistic may explain, in my opinion, why the RNLi carries out so many missions in order to rescue vessels as compared to the Maritime Police in Israel. This figure also explains why most of the drownings in Israel occur near the shore rather than while boating (as mentioned, the vast majority occur either on a non-official beach or on an official beach when a lifeguard is not present).

If we compare the preparedness of the Maritime Police in Israel in the provision of assistance and rescue to vessels, then Israel's situation is no worse, and perhaps even better than that of Britain. Thus, the average distance between stations is similar (about 80 kilometers in both cases), the speed of the various vessels is similar and the fact that the Maritime Police in Israel is composed mainly of full-time salaried employees on call in the stations or on the boats at sea shortens the response time relative to the RNLi, which is largely made up of volunteers. While most of the RNLi stations have one lifeboat for rescue at sea under any weather conditions and one rubber boat for assistance near the shore, the Maritime Police in Israel have two boats for rescue at sea and a water scooter for assistance near the shore.

In sum, the character of maritime activity in Israel (sport and recreation) for most of the public involves bathing at a beach and to a much lesser extent activity far from shore, such as sailing in small boats. This is apparently the reason for the small number of rescues by the Maritime Police and the navy along the coast of Israel (apart from Sea of Galilee). In my opinion, the Maritime Police are well-prepared for their missions. It appears that the scope of maritime activity and the need for rescue

27 Statista. 2020. Total number of boats owned by household in the UK from 2015–2017 <https://www.statista.com/statistics/530382/boat-ownership-numbers-united-kingdom-uk>

28 Ynet (11 June 2019). <https://www.ynet.co.il/articles/0,7340,L-5523075,00.html>

services at sea in Israel do not justify the creation of an additional protective layer such as the Coast Guard or the RNLI.

If we wish to reduce the number of drownings each year, as Britain has done, and despite the increase in Israel's population, then as a country on the Mediterranean coast where recreational activity at the beach is deeply engrained in the culture, the State (i.e. the government and the local councils) need to invest more in the teaching of swimming for all and in water safety education for children and youth. In addition, the State needs to encourage the local councils, that have not yet done so, to reinforce the existing rescue framework: more lifeguards, longer bathing hours and a longer bathing season since people go to the beach both before Passover and after the High Holidays (which is the official season for the beaches in Israel).

Since the cost of creating and operating official beaches is high and the local councils are reluctant to open additional official beaches as a result, the State needs to provide budgetary assistance or to open beaches that it will operate rather than by the local councils. In addition, there is a possibility of declaring certain beaches as official only during the bathing season or even only on weekends. Furthermore, the possibility of paid parking at official beaches should be considered; this provides the local councils with the possibility of offsetting part of the cost of maintaining the beach, although on the other hand this might encourage bathers to use non-official beaches and thus endanger themselves and their families.

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The 'Maritime Strategic Evaluation for Israel, 2020–2021', reviewed the main changes in the maritime domain globally as well as regionally (East Mediterranean) The 'Maritime Strategic Evaluation for Israel' included action plans and policy recommendations for decision makers which, in the opinion of the authors, can help Israel strengthen the sea component of Israel's national security and promote the sea-related economy as a growth engine (blue growth) for the Israeli economy.

The report was written by researcher fellows from Maritime Policy & Strategy Research Center at the University of Haifa, and researches from the University of Haifa who have a unique knowledge of these subjects.

