MARITIME STRATEGIC EVALUATION FOR ISRAEL 2022/23

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Section 2: The Russia-Ukraine War – Maritime Aspects

Russia's invasion of Ukraine in late February 2022 transformed the international agenda. Russia assumed that its military was infinitely more powerful than Ukraine's and would defeat it easily and swiftly, but it soon discovered that this was untrue. The articles in this section focus on the maritime dimension of the war, where the Russian Navy enjoys an absolute advantage over its Ukrainian rival but nevertheless has largely failed and has even retreated to a safe area east of the Crimean Peninsula. This section presents a discussion by experts at the Maritime Policy and Strategy Research Center, followed by six articles about the Russian Navy's performance during the war; the significance of the new maritime doctrine that it issued in July 2022 but seems disconnected from the reality exposed by the war; the application of the 1936 Montreux Convention, concerning Turkey's management of the Turkish straits during the Russo-Ukrainian War; the impact of the war on maritime trade in the Black Sea and globally; the complicated opportunities facing Europe in its desire to find alternatives to the energy it imports from Russia; and the lessons that Iran has drawn from the war.

The Naval Campaign in the Russia-Ukraine War: A Roundtable Discussion

Editors: Ayal Hayut-man and Ziv Rubinovitz

On October 23, 2022, researchers from the Maritime Policy & Strategy Research Center at the University of Haifa held a roundtable discussion on the naval campaign in the Russia-Ukraine war, which began on February 24, 2022. Presented here is a summary of the main topics discussed and the participants' comments.

An appendix to this discussion is a table of (general and naval) notable milestones during the Russia-Ukraine war so far, prepared by Ido Gilad.

Opening Remarks

Prof. Shaul Chorev, head of the Maritime Policy & Strategy Research Center, began by stating that the purpose of the roundtable is to analyze trends in the maritime campaign between Russia and Ukraine and discuss possible lessons regarding the nature of warfare in this context. Prof. Chorev noted that the maritime military operations carried out up to that point during the Russia-Ukraine war included amphibious operations, power projection from the sea using submarines, the closing of straits, UN-sponsored agreements regarding the supply of grains, Anti Access / Area Denial through mining, and more. The purpose of this discussion was brainstorming – not in order to determine right from wrong but to share various assessments and discuss them, to better understand the significance of these naval operations. In addition to the operations themselves, Prof. Chorev suggested discussing the large gap between doctrine and reality and its consequences. He offered the example of the publication of Russia's new naval doctrine in late July 2022, as combat was ongoing.[1] Prof. Chorev pointed out that such gaps between doctrines and reality on the battlefield can be observed when it comes to other navy doctrines as well. He mentioned the Israel Navy doctrine, which discusses its role as a force of a regional power, even though the Israel Navy is not ranked among the thirty-four leading naval forces in the world – as opposed, for example, to Egypt and Turkey which are included in this ranking.[2]

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1 Russia's new naval doctrine is discussed at length in Tzevy Mirkin's article in this volume.

2 Eli Sharvit and Dov Raz, "From 'Maritime Service' to Strategic Force: Some Thoughts on Naval Forces in 2048", *Ma'arachot*, 477 (2018), pp. 18-25 [Hebrew]. "Another aspect of the strategic context that must be taken into account is the use of naval forces as a fundamental factor in the State of Israel's concept of security, by projecting regional power", ibid., p. 23.

Presentations and Comments

Tzevy Mirkin described the sinking of the "*Moskva*", emphasizing the broad implications of this event. According to Mirkin, the sinking of the "*Moskva*", the Black Sea Fleet's flagship vessel, is probably the most significant blow Russia has suffered in its campaign in Ukraine, even compared to defeats on land, and especially given its symbolic significance. From its very first day, the "*Moskva*" became a symbol of the campaign and Russian military power, symbolizing a period that was perceived by many as the golden age of Russia's naval force. This defeat was even more humiliating given that Russia still does not perceive Ukraine as an equal military rival or even an independent state, which is the reason that Russia describes the war against Ukraine as a war against NATO.

According to Mirkin, the sinking of the "*Moskva*" is expected to affect the status of the Russian Navy, which has dealt with the sinking of smaller ships in the past, but never on this scale. As a result of this event, the navy's image was greatly damaged – a fact that is expected to affect internal power relations within the Russian army. This may also affect budget distribution. Mirkin noted that it is easy to write a doctrine stating the importance of building large ships, but when it comes to the actual distribution of funds, given the failure of the Russian Navy to defend this ship, the question as to why build more ships may arise.

Mirkin explained that although it is not the main reason, the sinking of the "*Moskva*" is one of the reasons Russia has been avoiding amphibious operations. The main reason is that it became clear very early on that Russia does not have enough troops to carry out such operations. Russia's entire marine force is made up of four brigades that do not have enough soldiers to capture Odesa. Furthermore, Russia tends to make use of marine forces to reinforce infantry forces; this was the case in Afghanistan, where paratroopers were widely utilized, as well as in Chechnya, where both paratroopers and marines were deployed. Similar actions were taken in the current campaign; when it became clear that Russia did not have enough trained forces on the ground, high-reputation units, such as paratroopers and marines, were used in infantry roles, contrary to their original purpose. The result was a great loss of personnel among marine forces, and of most of the experienced officers, especially in lower and middle ranks. According to Mirkin, this led to a situation in which there was no one to train new officers and as a result, Russia does not have enough men for amphibious operations, which became a lower priority – and now, after the sinking of the "*Moskva*", they are no longer technically possible.

At the same time, the Russian navy's involvement in the campaign was affected by the relationship between the ground forces and the naval forces' commanders. The ground

forces' unwillingness to allow naval admirals to take credit for success in combat led to the subordination of the marine forces to the ground forces.

According to Mirkin, it seems that there is no real connection between the new naval doctrine approved by President Putin on July 31 of this year,[3] and what is happening on the ground. As he noted, approval of a doctrine is a process that takes months, and it appears that the new naval doctrine was prepared before the war began. The doctrine itself does not mention the war, even in terms of the discussion of competence levels and so it seems that the publication of the naval doctrine was intended first and foremost to raise morale, but that its ties to reality are strictly coincidental, and not for the first time.

Ido Gilad presented key milestones in the naval campaign between Russia and Ukraine. Following Mirkin, Gilad noted that the state of the navy reflects the state of the Russian army in general: at the beginning, the Russian navy enjoyed objective advantages, emphasizing the order of forces and means, certainly compared to the Ukrainian navy, which received only about a fifth of the former Soviet Union's navy forces.[4] Significant Russian control of the Black Sea shores, including the Ukrainian shores, is evident in the Sea of Azov, Crimea, and Sevastopol, and consequently, on the western part of the coast – in the Gulf of Odesa (Figure 1), could be noted. Such physical and military data suggests that one could have assumed that Russia would gain a complete naval victory in the westernmost part of the Ukrainian coast. This is a relatively remote area, and the expectation from the Russian navy was that it would deepen Russia's grip on it; especially due to its deployment in Sevastopol as a forward outpost on the Crimean Peninsula. But in practice, the Russian blitz on February 24, 2022, failed, the attempt at a "knock out" did not bear fruit, and the use of "General Winter" (i.e., winter 2022) using oil and natural gas as weapons against the West, did not lead to significant outcomes. On the contrary, the Russian announcements, full of expectation, have not come to fruition, and all of the Russian forces, including the navy, are now digging in or even retreating.

As Gilad noted, in terms of the geophysical characteristics of the arena, Ukraine's coastline is 2,700 km long and makes up about half of its borders. The Ukrainian coastline can be divided into three main sub-regions – the Sea of Azov, the Crimean Peninsula, and the Gulf of Odesa – or into eight coastal strips. The estuaries of the rivers along the coast are used for maritime transport, and their control affects the entire Ukrainian trade and economy. The straits and Snake Island serve as a strategic stronghold that the Russian

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3 "The Russian Federation Naval Doctrine", was approved on July 31, 2022, and published on the Russian President's official website.

4 Black Sea Fleet (BSF) – Post Soviet Division, *GlobalSecurity.org*, Retrieved December 2022.

navy tried to take over at the beginning of the campaign, which it led on the (relatively distant) western front, but without success.

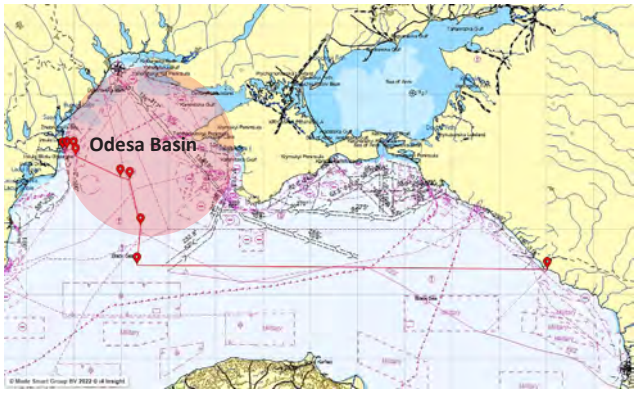

Figure 1: The Ukrainian coast, emphasis on the Odesa Basin, west of the Crimean Peninsula

When considering the specific timeline, other actors who joined the maritime activity should be noted: on the one hand, Turkey blocked the straits to Russian military vessels (in accordance with the Montreux Convention of 1936), but on the other hand, since July it has mediated the rescue of grain ships from the maritime blockade on shipping traffic to and from Ukrainian ports, which lasted for the preceding four months, a move which was named the "Grain Route". Iran also appeared on the scene by supplying explosive and unmanned aircraft, and probably also precision-guided missiles. Part of this supply is managed through the Caspian Sea.

According to Gilad, it seemed at the time that the Russian navy was withdrawing in face of the Ukrainian army, whose forces, mainly those on the ground, were diverting resources towards the Crimean Peninsula and represented a threat to the port of Sevastopol, which was attacked on October 29 by vessels and unmanned aerial vehicles operated by Ukraine. The Russian Navy's insecurity in Crimea and in particular in the port of Sevastopol led it to remain in more protected areas to the east of the Crimean Peninsula near and toward the port of Novorossiysk.

Shlomo Guetta added some general remarks. He noted that a few months after the war began on February 2022, it was still hard to see the forest for the trees, which made it difficult to form systemic insights. As he explained, perhaps only in a few years, after the dust settles, issues that are currently unclear will become clear – especially with publications by Western intelligence services or studies by analysts, based on intelligence data. As for the expectations from the Russian Navy, Guetta noted that it is not possible to know what had been written in the General Russian Command regarding its purpose and

tasks, but that impressions so far, lead to an estimation that the greater the expectations, the greater the disappointment.

As for the characteristics of the naval arena, Guetta noted the asymmetric characteristics of this war, in which the Russian navy holds great power in the Black Sea, compared to a rather inferior Ukrainian navy. This position led to hubris among Russian Black Sea Fleet commanders, which in turn led Russia to suffer significant losses – the most notable among these was the sinking of the "*Moskva*" cruiser. According to Guetta, this situation may remind us of other examples in which the inferior side gains unexpected advantages – such as the case of Israel in the Second Lebanon War, which did not consider some of the weapons that were in the possession of Hezbollah, a situation which led to overconfidence, as a result of which the INS *Hanit* was hit (fortunately there were only four casualties among the staff members).

Guetta added that western intelligence officials' and researchers' predictions, such as the prediction of an amphibious landing in the eastern sector (Mariupol) and the western sector (Odesa) of the Black Sea, did not come to be.[5] The option of a naval blockade from the Black Sea was also unfulfilled during the course of the war, due to diplomatic pressure. As Guetta explained, a blockade of this type, which threatens the world trade of food and other products, cannot remain confined to Russia and Ukraine, a fact that is important to remember.

Furthermore, Guetta noted the increasing use of unmanned airplanes and unmanned aerial vehicles. In the first months of the campaign, Turkish unmanned aircraft were the Ukrainian weapon of choice and in recent months, more and more Iranian unmanned aircraft have been spotted, raising the question of why a powerful country such as Russia needs the help of a smaller regional power in this area. There is even information according to which Iran will provide Russia with precision long-range surface-to-surface missiles of various types. Without underestimating Iran's capability, which should worry Israel, this seems to mean that Russia itself does not have significant capabilities when it comes to unmanned aircraft. As he noted, Iran's production capacity in this field also deserves attention and recently, it has come to light that Russia intends to locally produce hundreds of Iranian UAVs.[6]

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5 For example: H. I. Sutton, "6 Russian Warships And Submarine Now Entering Black Sea Towards Ukraine", *Naval News*, February 8, 2022; as well as: Walker Mills and Timothy Heck, "What Can We Learn about Amphibious Warfare from a Conflict that Has Had Very Little of it? A lot", *Modern War Institute at West Point*, April 22, 2022.

6 News agencies, "Report: Iran and Russia Agreed on the Joint Production of Iranian Drones on Russian Territory", Maariv, November 19, 2022.

As Guetta explained, in the future, in response to damage to surface vessels, the Russian navy may prioritize the submarine component – not only in terms of nuclear or nuclear-armed submarines but also on the conventional level, including improving the accuracy of cruise missiles and integrating the use of drones in submarines launchings. Furthermore, another aspect that has surfaced in recent weeks is a destructive weapon operated by the Ukrainians – an unmanned surface vessel. These were activated and caused damage to several Russian vessels in their own ports.[7]

Figure 2: An unmanned surface vehicle used by the Ukrainians against Russian navy vessels on November 2022[8]

In conclusion, Guetta predicted that historians or military researchers who will analyze the naval arena in this war will probably come to the conclusion that the Russian navy had no contribution whatsoever to the strategic aspect of the current campaign.

Ido Gilad added that, in his opinion, there is no need to guess the Russian Navy's objective since clearly, its role was to lead the southern front. Shlomo Guetta agreed but said that if this was the case, the navy did not meet this objective. Tzevy Mirkin pointed out that the main attack on the southern front was carried out through the ground forces from Crimea – an attack that was successful because of Ukrainian authorities' betrayal, and not due to the superiority of the Russian army. As he explained, the problem is that Russia itself did not understand what the navy's role was in this campaign and the ground forces generals did not want the navy to get the credit for their achievements.

Mark Shipton discussed the following question: Has the Russian navy gone through a process of adaptation regarding the continuously changing operational reality during

7 "Funds Raised for the Second Surface Drone for Ukraine in Lithuani", *Мілітарний*, November 19, 2022.

8 Ibid.

combat? As he noted, within this context, it is necessary to differentiate between the nature of war, which has remained unchanged throughout history and is an act of violence derived from political needs and human nature, and the characteristics of warfare, which are constantly changing as a result of technological and cultural development.[9] Shipton recalled Michael Howard's claim that history proves that, in most cases, military organizations do not accurately predict the characteristics of future warfare.[10] In this context, great military thinkers, such as Sun Tzu and Carl von Clausewitz, have emphasized the importance of adaptation as an essential attribute of military forces during combat.[11] This is also true in modern times. As Shipton explained, Murray and Farrell argue that war educates armies by forcing them to improve and sometimes even change their tactical and operational concepts; one of the most important traits of military organizations is the ability to quickly adapt to the tactical, strategic, and political conditions of war.[12] Shipton added that when discussing the question of whether the Russian navy underwent an adaptation process given the change in operational reality, several levels must be distinguished: a strategic level, a doctrinal level, and a tactical level. On a tactical level, adaptation did in fact take place; a key example of this is the confrontation with remotely manned aircraft (UAVs) and Ukrainian drones, especially the TB2, which proved to be a distinct threat to the Russian navy's ability to achieve its goals.[13] In this context, Shipton noted that the air defense systems on board Russian vessels operating in the Black Sea were unable to provide an adequate response to this threat. The solution, in this case, was the installation of a short- and medium-term air defense system – the TOR M2KM, which proved to be somewhat effective in dealing with this specified threat.[14]

Prof. Chorev pointed out that whenever there is a hit, it is explained as a technological problem, but one must ask if it is not also an operational problem; as he noted, it is important to understand that large vessels in asymmetric coastal warfare are at a disadvantage. Mark Shipton agreed but pointed out that if more modern vessels such as the *Admiral Gorshkov* or the *Steregushchy* class frigates with more advanced air defense

9 Carl Von Clausewitz, *On War*, London: Routledge (1968).

10 Michael Howard, "Military Science in an Age of Peace", *The RUSI Journal*, 119, no. 1 (1974): 3–11.

11 Sun Tzu, *The Art of War*, Translated by Thomas Cleary (1991).

12 Williamson Murray, *Military Adaptation in War: With Fear of Change* (Cambridge: Cambridge University Press, 1991); Theo Farrell, "Improving in War: Military Adaptation and the British in Helmand Province, Afghanistan, 2006–2009," *Journal of Strategic Studies*, 33, no. 4 (2009): 567–594.

13 Tayfun Özberk, "Ukrainian TB2 Attacks on Russian Vessels May Mark a First in Naval Warfare", *Sheperd Media*, May 6, 2022; Kateryna Panasiuk and Mykyta Vorobiov, "The Drone That Won Ukrainian Hearts", *CEPA*, August 29, 2022.

14 Howard Altman and Tyler Rogoway, "Ground-Based Tor SAM System Seen Strapped To Russian Black Sea Warship", *The Drive*, June 7, 2022.

systems such as the 9K96 Poliment-Redut were used in theater,[15] then the results might be different.

Figure 3: A Vasily Bykov-class corvette with a TOR M2KM battery

Shipton offered another example of tactical adaptation – the growing shortage of naval standoff missiles against land targets, such as the 3M14 Kalibr cruise missile. This hampers the ability of the Russian navy to maintain a continuity of land strikes. The solution was to convert coastal missiles that exist in large quantities for attacks against land targets, in this case, P 800 Oniks missiles – Yakhont in the export version – powered by Bastion P batteries.[16] As Shipton explained, it is important to note that these missiles are not designed to operate effectively in a continental domain – the relatively small warhead and the lack of navigation and homing capabilities like those of TERCOM (Terrain contour matching – navigation based on topographic maps) makes these missiles particularly vulnerable to electronic warfare (EW).

A third example offered by Shipton was the ongoing attacks of Ukrainian forces against relatively small Russian navy patrol boats – mainly the Raptor class patrol boats, by unmanned aircraft and anti-tank missiles used by infantry. These attacks led to the loss of more than half of the patrol boats' order of battle forces in the Black Sea area,[17] and damaged the ability to defend port entrances and the Russian navy in general. The answer,

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15 Matteo Natalucci, "Russia Wraps up Trials of Poliment-Redut SAM System on Project 22350 Frigates", *Janes Defense News*, February 20, 2019.

16 Ashish Dangwal, "After Hypersonic Weapons, Russia Uses Bastion-P Missiles To Break Ukraine's Resistance, Destroy Its Morale", *The Eurasian Times*, March 24, 2022.

17 David Axe, "Russia's Black Sea Fleet Started the War with Eight 'Raptor' Patrol Boats. It Might Have Three Left", *Forbes*, May 9, 2022.

in this case, was the use of captured Ukrainian patrol boats,[18] such as the Gyurza-M. Meanwhile, the question of the operational effectiveness of such a move arises in view of the inadequate command and control systems, communication, and the ability to logistically support the technical operation of these vessels.

Figure 4: Bastion-P coastal missile batteries

Figure 5: Ukrainian Gyurza-M patrol boat captured by the Russian army. It is evident here that the Ukrainian patrol boat is now flying the Russian navy flag

18 Matthew Moss, "Russia Presses Captured Ukrainian Gunboats into Service", *Overtdefense*, May 26, 2022.

Shipton concluded by saying that the Russian navy showed limited adaptation during the war and that this adaptation was confined to the tactical level, without any systemic, doctrinal thinking, or aspects of integrated multi-domain operations. In Shipton's estimation, this adaptation process is purely reactive instead of proactive; additionally, this process is most likely managed through a "bottom-up" process, by applying military hardware that does not fit the operational needs. The Russian army, and thereby also the navy, failed to quickly recognize the characteristics of warfare that included the extensive use of the Anti-Access-Area Denial (A2AD) strategy by the Ukrainian army, based on unmanned drones and anti-ship coastal missiles. Throughout the fighting, the Russian navy was unable to adapt its strategic thinking or the patterns of its operational activity to the type of war actually taking place.

Alex Grinberg added a few comments regarding the discussion on the sinking of the "*Moskva*". He noted that it was sunk by a Ukrainian "Neptune" anti-ship missile, a fact that the Russians are trying to conceal. He added that it is important to remember that even if this is asymmetric warfare, Ukraine still has marines, missiles, vessels, unmanned aerial vehicles, and air defense. As he explained, Ukraine was the center of the Soviet Union's air defense, and these capabilities were maintained, leading to a lack of activity by the Russian Air Force in Ukrainian skies. Furthermore, the Ukrainians instigated deep reforms in their army, navy, and intelligence forces, the results of which are evident on the ground. The methods of command and warfare adopted by Ukraine are completely Western and quite different from the Russian methods. Although the Russians regard this campaign as a war against NATO forces, this does not 'translate' and will not translate into drawing conclusions in the maritime domain.

Grinberg added that it should be understood that the lack of coordination and integration between forces is deeply rooted in the Russian army; even in the Red Army, there was no real doctrinal discussion, only "manifesto" documents that praised the army's capabilities. As a result, a field commander who wishes to remain alive can improvise on a tactical level, but it cannot go further than this. The concept of coordination between different army forces was not developed or studied at any stage. After the sinking of the "*Moskva*", efforts were made to cover up what had happened but there was no attempt to learn lessons. Additionally, concerning the unmanned aerial vehicles obtained from Iran, Grinberg noted that it seems that such a capability has simply not been established in Russia, and it is difficult to suppose that this will change in light of the current organizational culture. Even if Russian leaders would have theoretically decided to carry out army reforms, it would be impossible to do so without fixing the entire Russian system, which is plagued by widespread corruption and lack of accountability. As opposed to the command in NATO armies and in Israel which is based on the autonomy and responsibility of soldiers

and junior officers, which largely reflects the character of Western and Israeli societies; it would be impossible to instill values of independence and personal responsibility in soldiers without considering the issues relevant to the rest of society.

As he explained, as of today, it can be determined that Russia's Black Sea fleet has completely lost its former capabilities, and it is clear that even nine months after the beginning of the war, the Russian navy is not involved in combat in Ukraine. Since September 2022, the Russian navy in the Black Sea has suffered further losses following a Ukrainian attack on the strategic Russian naval base of Sevastopol. Furthermore, according to Grinberg, the Ukrainian attack deserves special consideration since it is an attack carried out entirely by a large number of unmanned vessels.

Discussion

Prof. Chorev pointed out that another issue that has not yet been discussed is the diplomatic-signaling role, such as in the case of withdrawing the submarine fleet and raising the level of nuclear alert – an issue that is under the authority of the highest political officials in Russia, although in the Russian navy – as in other countries – the operation of the submarines is the navy's responsibility. Tzevy Mirkin noted that it was too early for any final conclusions, but an interim conclusion may be that Russia relied significantly on the nuclear threat to prevent aid to Ukraine, but this did not bear fruit, as aid to Ukraine increased significantly over time.

Another topic that Prof. Chorev brought up was what naval warfare means in a world of information networks. As he noted, Russia managed to conceal the sinking of the "*Moskva*" for several days, something that would certainly not have been possible on land. This raises the question, what can be learned here about the ability to hide information in a marine domain?

Tzevy Mirkin added that all the discussions on the campaign between Russia and Ukraine return to a fundamental problem: a perception of admiration for the ability, cunning, resources, and Russian military capability. In a country that is in general crisis, every area is affected. As he explained, all of the famous Russian weapon systems were developed in the 1980s and early 1990s and no new weapon system was developed after 1992. Furthermore, it is not clear how the new submarines built by Russia in recent years differ from 1980s submarines. Russia needs Iran's assistance because it does not have electronic capabilities. Certain scientific fields were eliminated in the USSR in the late 1940s, during the struggle against "bourgeois science", and the Soviet Union (and later Russia) was never able to bridge the gap created as a result. Additionally, Russia has suffered from a brain drain since the 1970s; and problems of corruption and inefficient administration

must also be considered. As Mirkin explained, the main result of the war could be damage to the idea of Russian power – leading to the understanding that Russia holds power in terms of territory and length of its borders alone.

Prof. Chorev pointed out that despite these problems, in the 2014 campaign, Russia achieved distinct success. Mirkin replied that this success was due to the fact that no one was fighting Russia and that Ukraine did not receive any outside support. Russia assumed that this would be the case this time as well, which testifies to its intelligence capabilities – that is to say, Russia does not understand any of its neighboring countries, and still sees them as semi-colonies. Additionally, in 2014 Russia was also defeated in Mariupol by volunteer battalions; and when encountering real opposition, its level of success was significantly lower. Furthermore, in 2008, a whole Russian field army needed four days to push the Georgian army from positions in South Ossetia, and their communication and reporting systems did not work properly – this could not be considered a success. Even in the current campaign, the high percentage of losses among battalion and division commanders is due to the fact that they have to physically reach the front to understand what is happening there.

Mark Shipton pointed out that it is necessary to distinguish between military power in terms of numerical and qualitative aspects and how military power is used. In his opinion, following the war, future studies of military power will focus more significantly on the way in which military power is used during combat (doctrine, the degree of multi-armed integration, command and control capabilities, and tactics), as dramatically affecting the ability to achieve operational goals and objectives.

In response to Mirkin, Ido Gilad said that there are several levels that need to be distinguished: strategic, operative, and tactical. Furthermore, Israel's power is certainly not comparable to Russia; for this reason, when Israel looks at Russia; its perspective is different and is mainly influenced by regional considerations, such as the importance it attaches to Russia's actions on nearby fronts like Syria and Iran. At the strategic level, it is also impossible to ignore Putin's "achievements" which led, for example, to global inflation and the way he managed to use the energy threat.

Mirkin said in response that the energy threat did not lead to the prevention of aid to Ukraine as it was intended. Gilad replied that this is apparent in hindsight but that it is important to understand what Putin's Russia originally wanted to achieve. Mirkin replied that the question is not what Russia wanted to achieve, but how successful it was in achieving its goals. As he explained, the Russian media has been reporting on European citizens freezing to death in the winter, and there are people in Moscow who believe this. Gilad noted that Russia apparently managed to sabotage the Nord-Stream pipelines and

succeeded in blocking Ukraine's ports, although it must be said that this was done with the help of Ukraine itself, which mined its ports and the sea routes to them for defensive purposes.

At this point, Prof. Chorev wished to focus the discussion on the military-naval aspect, which also holds open questions. As he noted, specifically, one must ask: in the current combat route – an asymmetric campaign on the coast and an attempt to occupy territory – is the navy's role limited from the outset, and should expectations be correspondingly low?

Tzevy Mirkin replied that before the war began, Russia concentrated forces from three fleets in the Black Sea: the marine forces that were positioned in the Black Sea were brought over from the Baltic Sea and the Pacific Ocean; This was done due to local conflict, and even with this concentration of forces, the level of success in the naval arena was very limited. Russia was unable to carry out any amphibious operations and lost its skilled marine order of forces. Furthermore, after the sinking of the "*Moskva*," the navy retreated to a defensive position. This is expected to affect the distribution of resources and budget later on because the Russian navy became a de facto coast guard.

Ziv Rubinovitz noted that the sea was ultimately a secondary arena in the current campaign. Prof. Chorev said that this is an important issue to address when it comes not to a remote island like the Falklands, but to coastal combat that is mainly decided on land. This is also relevant in the context of the Israeli Navy, which is currently discussing the question of landing.

Alex Grinberg agreed with most of the points made by Prof. Chorev but added that Russian conduct has failed on all of these levels. He added that historically, Russian intelligence has always failed to assess strategic situations because it is required to provide a picture that matches the positions of Russian leadership.[19] Russia intended to conquer Ukraine and was not preparing for war but planned to install a puppet regime. In this sense, Russia is a country with no strategic planning, which is now trying to improvise to get out of the situation in which it found itself. Grinberg added that the Russian sabotage of Nord Stream was tactically successful but strengthened the conclusion in the West that it is necessary to find a substitute for Russian gas.[20] Regarding the involvement of foreign navies, he said that it is important to set boundaries for Russian operations in other arenas, such as the

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19 Christopher Andrew ,"Intelligence Analysis Needs to Look Backwards Before Looking Forward", *History and Policy* ,June 1, 2004.

20 Sergey Vakulenko, "Shutting Down Nord Stream Marks The Point Of No Return For Russian Gas", *Seeking Alpha*, September 8, 2022.

Mediterranean Sea because the lack of boundaries will encourage Russia to take more aggressive actions.

In view of the damage to the two gas pipelines in the Baltic Sea, Prof. Chorev brought up the vulnerability of the underwater communication cables and wondered if there is not a weakness here for Israel that should be examined.

Shlomo Guetta said that if it is possible to speak in terms of a tactical, operative, or strategic achievement, then the Russian naval forces apparently failed and did not achieve their goals on all three levels. He explained that it is not yet possible to determine what conclusions can be drawn from this for the future, but from past experience recommended basing conclusions on future insights to be analyzed and presented by Western intelligence services, and the British and German intelligence services in particular.

Regarding the specific issue of an Israeli landing option, Guetta said that we should stop basking in the operational success of the Awali landing in Operation Peace for Galilee (the 1982 Lebanon War), which was carried out on an unthreatened coast. In his opinion, in a case of a landing on the Lebanese or Syrian coasts today, there is no assurance that threats against vessels will be completely eliminated. Such a threat could, of course, manifest with the use of dedicated coastal missiles, as well as rockets and surface-to-surface missiles with accurate warheads, unmanned and armed aircraft, and vessels. Additionally, the use of naval mines on potential landing coasts should not be ruled out. Guetta added that a hit to a landing craft with hundreds of soldiers and armored vehicles would be disastrous and would offer the enemy an opportunity for a "victory image". Furthermore, he suggested that in regard to the possibility of hitting underwater communication lines, we need to observe and analyze the capabilities of the concrete naval enemies Israel is facing – that is to say, Hezbollah and Iran – in this regard, including threats to the infrastructure of Underwater gas pipelines. He also noted that in addition to this, regarding gas drilling production facilities in the middle of the sea, there is no doubt that the naval enemy has the capability.

In response to Mirkin and Grinberg, Ido Gilad stated that Russia has proven maritime operational capabilities, and while it is important not to exaggerate them, it is also important not to ignore them, but to assess each case independently.

Prof. Chorev emphasized that this document should discuss lessons learned, and allows not only for conclusive statements but also for questions, requiring us to follow the developments in combat from doctrinal, technological, and organizational aspects and allowing for continuous discussion.

Appendix: Table of Prominent (Naval and General) Milestones in the Russia-Ukraine War

Ido Gilad

Date	General Event/Naval Event
Mid-March 2021	The Black Sea: an extensive naval maneuver (6 submarines, the *Moskva* frigate – Slava model, other vessels and aircraft).
The end of October 2021	Extensive vessel maneuver.
Late 2021	Reinforcement of 6 landing ships (from the Northern and Baltic fleets).
December 2021 – January 2022	Reports of an extensive naval maneuver and concentration of vessels in the Black Sea.
February 24, 2022 – the onset of the "Special Military Operation"	The onset of the invasion in Ukraine (four axes of progress): from the north – from Belarus toward Kyiv; from the northeast – toward Kharkov and Sumy; from the southeast – toward Luhansk and Donetsk; from the south – mainly from Crimea toward Kherson. The Snake Island incident led by the "*Moskva*", intentions to land in Odesa + blockade of Ukrainian ports.
February 26, 2022	A successful amphibious landing in Mariupol versus a failed landing in Odesa. Naval mining in the Gulf of Odesa + probable drifting to Romania + Dardanelles (Ukrainian!? / Russian?).
February 28, 2022	Turkey announces strict sailing in the straits – according to the Montreux Convention (only military vessels registered in the Black Sea are allowed to pass north).
March 7, 2022	Artillery hit to a Russian patrol ship that later returned to Sevastopol.
The end of March 2022	Announcing the end of the special operation and focus on taking control over the Don Bass districts (Southeast). The Kyiv district was abandoned – emphasis shifted to the southern front – to isolate Ukraine from the sea up to the Moldovan border (in the west), a total of 2,782 km of coast. Deputy Commander of the Black Sea Fleet – Admiral Paliy was killed in Mariupol. A signal for a possibility (!) of integrating a (tactical) nuclear threat from Russia.
April 13–14, 2022	The attack on the flagship "*Moskva*" – Slava class (a Russian governmental symbol) by the NEPTUNE (Harponsky – compatible with KH-35) missiles involving drones.
April 21, 2022	A Russian takeover of the coast of the Sea of Azov.
April 30, 2022	Attacking infrastructure and seaports (Odesa) with cruise missiles – 30 were launched from Crimea.
The beginning of May 2022	Drone hits of 'Raptor' guard boats and the 'Serena'-class landing craft.
May 12, 2022	A hit near Snake Island by a supply tanker "*Bobrov*."
May 15, 2022	Launching 4 Russian caliber missiles from submarines (!?) in the Black Sea – toward infrastructure targets in the Lviv area.
June 17, 2022	Coastal missile hits a tug boat.
July 8, 2022	Turkey brokered the opening of a shipping corridor to export grain.
July 9, 2022	Airstrike on the Russian Navy at Crimea Saki Air Base.

Date	General Event/Naval Event
July 31, 2022	Publication of an updated Russian naval doctrine (noting the Mediterranean, Black and Caspian seas as areas of special importance – some of them are therefore relevant to the combat area on the front of the special operation being conducted in Ukraine). Annual Navy Day celebration.
July 31, 2022	A drone hit of the naval headquarters in Sevastopol.
Late July 2022	The concentration of surface vessels in the Adriatic Sea (including 2 Udeloi ships) in front of the American aircraft carrier *'Truman'* and 3 Italian Navy surface ships.
August 17, 2022	The impeachment (?) of the Black Sea Fleet commander and the appointment of Vice Admiral Sokolov.
August 30, 2022	Attack on the Russian naval headquarters in Sevastopol with a Ukrainian unmanned aerial vehicle (UAV).
September 21, 2022	Expanding the mobilization of the reserves (30,000) + announcing the feasibility of using nuclear power. Integration of Iranian drones (Mohajer-6.(?
September 26, 2022	Locating a Ukrainian unmanned aerial vehicle (UAV) in the Sevastopol area.
Late September 2022	Evacuation of K submarines from Sevastopol. Underwater damage to the Nord Stream pipelines (in the Baltic Sea). Annexation of four Donbas (eastern) districts to Russia (15% of Ukraine's territory).
Mid-October 2022	Attacks of exploding drones made in Iran, an expression of the serious threat as a result of the tightening alliance between them.
October 21, 2022	Ukraine's claim of intentions to blow up the dam on the Dnieper River.
October 25, 2022	Fear of a use of a 'dirty bomb'. Putin's claim that a special operation requires a 'special measure.'
October 28, 2022	Crimea bridge explosion (a symbol of Russian rule).
October 29, 2022	An attack by 7 unmanned aerial vehicles (of the model located in early October) in the Crimean area of at least two Russian Navy ships in Sevastopol, including the destroyer *Admiral Makarov* (replacing the *Moskva* -the flagship of the Black Sea Fleet, which was sunk in April). During the attack, 9 unmanned aerial vehicles were also synchronized from the air. The targets were inside and outside the port. In response, Russia announced its withdrawal (for two days) from the shipping corridor agreement for the export of grain (which was originally valid until November 15, 2022). Turkey mediated this agreement and saw to its implementation, which means turning food into a weapon in Russia's hands, and Russia's possible damage to vessels and civilian shipping movements in the Black Sea.
November 8, 2022	An attack in Novorossiysk using drones. In practice, of a fuel terminal south of the military port itself.

Legend:
Maritime events before the operation
General events on land
General events with Turkish involvement
General events with Iranian involvement
Maritime events

The Russian Navy and the War in Ukraine

Ido Gilad

Up until the onset of the war in Ukraine (on February 24, 2022), Russian President Vladimir Putin perceived Russia's maritime strategy to be a significant factor affecting the Russian global hold. A greater maritime domain meant a decisive factor in the country's economic and social advancement. The Russian Navy in precise has a great executive control over this domain. In the Black Sea arena Russian Navy had been considered as the stable and powerful force, especially compared to the Ukrainian Navy, which was considered weaker.

The Russian Navy's involvement in the war in Ukraine (defined by Russia as a "special operation"), intended in its initial planning stages and along the first phase of combat (which lasted for roughly 50 days), to be an integral part of the Russian campaign. The fleet's strengths led to a successful contribution to the campaign on the "southern" front, which became part of the overall campaign. In this context, the Russian navy was expected to play a central role in defeating the Ukrainian navy.

The Russian Navy's advantages were essentially based on a superior alignment of forces in the face of its Ukrainian counterpart's shortcomings. When the former Soviet Black Sea fleet was divided up (after negotiations lasting until 2007), Ukraine received only approximately a fifth of the naval vessels in question. Additionally, the Russian navy on the "southern" front relied on renewed control of the Port of Sevastopol (after the annexation of Crimea by the Russian Federation in 2014). This control of the Crimean Peninsula thus extended the considerable Russian control over eastern territories on the Ukrainian coast, especially in light of the Russian control of the Kerch Strait – a chokepoint connecting the Black Sea to the Sea of Azov. A bridge built by Russia over this strait (opened in 2018) was a symbol of Russia's sovereignty over Crimea, and another step on the road to realizing its ambitions to take complete control of Ukraine. After the initial attack in 2022, the Russian Navy was tasked with completing the Russian takeover of the entire Ukrainian coast, particularly in the west, from the Gulf of Odesa to the estuary of the Danube in the south (on the Moldova-Romania border).

The Russian naval forces' successful advancements in combat were halted after 50 days mainly due to the surprising sinking of the Slava-class "*Moskva*" cruiser, the Black Sea Fleet's flagship vessel (on April 13, 2022). Until the sinking of the "*Moskva*", the Russian navy dominated the Black Sea, particularly through a naval blockade. This blockade resulted in an almost complete stoppage of commercial shipping activity from and to Ukrainian ports. This move affected the global food and raw materials market and has additional global implications, including energy-related issues – which soon affected

the increase in global market prices, transportation, shipping insurance, inflation, and the world economy. In this context, additional political and military implications such as restrictions on navigation in the Turkish Straits, as well as the involvement of other international forces (such as Iran), became evident.

The port of Odesa (in western Ukraine), being the home port for the Ukrainian Navy, was one of the blockade's key targets and under threats of a Russian attack, including attacks on civilian infrastructures. The Ukrainian fear of a Russian takeover of the city of Odesa and its port led to defensive measures on their part. These included the scuttling of a Krivak-III class frigate in order to prevent its capture by the Russian Navy.

It is therefore evident that in the first phase of combat, the expectation from the Russian Navy was to serve as a forward vanguard force in the maritime and coastal context at the west of the "southern" front as part of the overall campaign. The completion of the takeover of this western area by Russia could have allowed it the potential for decisive control over most of the Ukrainian coastal areas: the Crimean Peninsula coasts (since 2014), as well as the western shores of the Sea of Azov. Russian control of these areas, even before the beginning of the campaign in Ukraine, offered it a hold, in practice, on about two-thirds of the Ukrainian coastline (about 2,700 km, see Figure 1). The completion of Russia's takeover of the entire coast was therefore planned to be realized through the navy: in the maritime context (at first) and the coasts of the Gulf of Odesa and the western arena as a whole (as a continuation of this). It seems that the responsibility of handling this area was entrusted mainly to the Russian Navy at the very beginning of the campaign; this is partly related to the Russian Navy advantage of being based in the nearby port of Sevastopol.

The dominance of Russian naval activity has, as mentioned, largely been undercut since mid-April following the sinking of the "*Moskva*" cruiser. After this event, a Russian understanding was formed that the Russian navy does not have sufficient ability to respond to the determination of Ukrainian forces, which are equipped with technological means and relied on Western knowledge. In this context, the commander of the Black Sea Fleet was dismissed (in mid-August), while his deputy was killed (earlier in late March). Furthermore, the main naval force retreated toward Russian shores in the eastern Black Sea, particularly to the port of Novorossiysk and to the protectorate southeast of the Crimean Peninsula. This move intensified as the Ukrainian forces advanced and threatened from the Ukrainian coast, toward the center of the Crimea region, especially on the western coast, near the port of Sevastopol.

Thus, the Russian Navy, together with land forces and additional Russian army forces, found themselves withdrawing (since the end of summer 2022) in face of Ukrainian

attacks aided by the West (mainly indirectly and directly as well). However, it is clear that nothing is yet determined regarding the results of the campaign in question, and that we do not yet know when it will end.

Figure 1: Map of the Ukrainian coast, the "southern" Russian front[1]

Background

Putin's reign, up until the attack against Ukraine (on February 24, 2022), was characterized by the Russian president's efforts to promote Russia's position of power in the world in general, including in various maritime domains. It is possible that Putin's childhood in the port city of Saint Petersburg, which was founded (in the 17th century) by Tsar Peter the Great – founder of the Russian Navy, shaped Putin's (psychological?) belief in the great importance of the sea for Russia, and in the power of the Russian Navy in particular. Great ambitions shape the Russian maritime policy, which works well with Putin's economic worldview. This is a distinct foundation when it comes to Russia's strategic strength, securing the regime's stability and continuity, and in the context of the freedom of action it has in the international arena.[2] Putin has identified a number of constitutive moves related

1 Source: Map of Ukraine with Cities, Wikimedia common, update March 6, 2022

2 Richard Connolly, and Michael Kofman, "What Putin Learned from the Soviet Collapse: To Preserve Its Global Ambitions, Russia Is Managing Its Economic Limits", *Foreign Affairs*, December 29, 2021.

to the maritime domain and has sought to leverage these to bring about the utilization, development and enhancement of the economic infrastructures at sea. A few of these projects were supported by Putin personally, though some of them were only partially implemented (on a civil or military level). Among the clear examples of development, we can refer to the development of the Northern Arctic Ocean, which can be seen as a high priority resource when it comes to Russia's maritime interests. This intention expresses an aspiration to bring about the utilization and extraction of natural resources from the sea. This is in view of global climate change, which, in recent years, has accelerated, causing a decline in ice sheets. This is how the opportunity to capture the 'Northern Sea Route' also known as the "Russian Suez Canal" was seized. The development of this route was planned to be implemented in two main stages: the immediate and first was based on the takeover of the shipping route with a fleet of Russian icebreakers (approximately 50 vessels), some of which are nuclear powered. Several vessels intended for this purpose are still under construction. Pursuing this course of action involves high costs. The second phase is meant to be implemented later and will be based on the expected melting of the glaciers, which will allow over-exploitation of the resources in the area, alongside the usage of the northern shipping route as a resource in itself, connecting East Asia to Northern Europe (with relative savings compared to the use of the existing route – through the Suez Canal). Both phases involve the establishment and enhancement of the Russian infrastructure along the coasts of the Arctic domain, which has been under vigorous development in recent years. The northern front, with an emphasis on the Arctic Sea, was also defined as "vital" in the updated Russian Naval doctrine (published in late July 2022, around the celebration of Russian Navy Day).[3] The development of this domain included the infrastructural-energy integration of floating power plants (with nuclear propulsion) that had been placed or were intended to be placed in the area and to enable its full function. Among the other projects implemented in the Northern domain is the laying of the pipeline system for supplying gas to Europe ("Nord-Stream 2") on the ocean floor, even though this system was sabotaged at the end of September 2022, as a consequence of the war in Ukraine.[4] The peak of military training activity and weapon tests in the northern arena is attributed to the "Umka-21" maneuver that took place in March 2021, during which an attack was conducted by three Russian submarines at the same time.[5]

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3 Official Internet portal of legal information Electronic passport of the Federal State Mass media registration certificate No. FS77-47467 information Service No. FS77110096. Retrieved December 8, 2022.

4 Matthew Sparkes. "Nord Stream gas pipe explosions were sabotage, say investigators", *NewScientist,* November 18, 2022.

5 TASS, "Arctic Exercise Umka-2021 Shows Russian SSBN Can Deliver Massive Strike", *Naval News*, April 10, 2021.

Russian military power has been somewhat modernized in recent years, although this development has proved to be limited in the context of the war with Ukraine. Such developments were partially based on previous operational experience of Russian forces over the years (for example: in Afghanistan 1979-1989, Chechnya 2000, Georgia and Abkhazia 2008, Ukraine, including Crimea 2014, Donbas and Luhansk 2014, Syria 2015, Armenia 2021). However, this experience proved to be of only limited significance in its implications for the current campaign in Ukraine. It is possible that the Russian experience in the previous military operations, many of which were carried out without significant interference or intervention on the part of other countries, gave Russia even more motivation to begin the current move against Ukraine. In addition to this, it is possible that the American withdrawal from Afghanistan in August 2021, interpreted by Russia as a weakness on the part of the United States and the West, added to and contributed to the Russian move in Ukraine.

Differences in development and equipment in the various branches of the Russian army were evident even before the campaign in Ukraine began. The Navy, as a strategic force that was supposed to enable the implementation of the global-economic moves in the spirit of the aforementioned Putin initiatives, was developed in parallel to the investment in aviation and space forces and was therefore equipped, or at least so it was claimed, with platforms and warfare means. Putin has demonstrated personal involvement and concern for some of these processes and has led them. On July 31, 2022, Putin claimed as part of Russian Navy Day, that supersonic "Zircon" missiles "will be operationally integrated by the navy in the near future".[6] The integration of these missiles is also expected to be included in the Russian nuclear submarines' weapon arsenal. Thus, the fleet was equipped with long-range precision cruise missiles (LACM) and ground-guided missiles (RS-SS-N-30A Sagaris). Some of these were installed on ground platforms, submarines and first-line surface vessels. The High Command in Moscow and in the Naval Headquarters in St. Petersburg made sure to establish an Anti-Access/Area Denial (A2/AD) ground infrastructure and holding centers on the various coasts. Thus, for example, the Russians gained control of the eastern Mediterranean Sea on the Syrian coast, during which defense measures against adversaries were integrated as well, based on establishing control in the Tartous port, the Khmeimim air base to the north, and in the other outposts that Russia maintained on the Syrian coast. In addition to this, counterattack capabilities of LACM missiles were developed by submarines and field units from the Caspian Sea and the eastern Mediterranean. 'Kalibr' missiles were incorporated in project 21631 of M-Buyan corvettes as well, as in project 22800 of Karakurt corvettes. Project 06363

6 Official Russian Internet Portal of Legal Information, Ibid.

improved Kilo submarines were also fitted with these missiles, as well as Project 885/ Project 08851 Yasan/Yasan-M missile-armed submarines.[7]

As part of its modernization attempts, Russia has aimed to promote the integration of advanced weapons. Some of these were even used in pioneering combat operations in the war in Ukraine. This is how a hypersonic missile from the Kinzhal system was launched for the first time (on March 18) against the Ukrainian forces' depot of land to air missiles (SAM).[8] It has been claimed that this accurate hit resulted in ten deaths. Since the beginning of the war, Russia, and Putin himself in a number of cases, have voiced threats (and warnings) about Russia's possible use of nuclear weapons. It should be noted that beyond these measures that have long been at its disposal, Russia has, in recent years, led an effort to promote plans to modernize its nuclear weapons with the intention of incorporating them into a variety of land, air, and naval launchers.[9] This was probably the case in the construction of Borei class-A submarines (Project 955A) with nuclear propulsion that were in relatively advanced development stages and could carry Bulba missiles. The *Belgorod* (K-329) and the *Khabarovsk* (project 09851) submarines were also designed to carry Poseidon autonomous nuclear torpedoes.[10] On March 22, 2022, the President of the United States, Joe Biden, revealed Putin's possible intentions to also use chemical and biological means.[11]

In conclusion, it should be emphasized that the annexation of the Crimean Peninsula (2014) significantly improved Russia's military naval and coastal position in the Black Sea. Russia gained the potential to widely deploy controllers in Crimea as well as to improve coastal systems and control the Sea of Azov. As mentioned above, the Black Sea Fleet benefits from a relatively accelerated development; intended to allow Russia to impose a naval blockade, in order to increase Russian control and maritime access to and from Ukraine, although the implementation of this move proved to be limited on a political, economic and practical level.

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7 James Hackett, Nick Childs, and Douglas Barrie,"If New Looks could kill: Russia's military capability in 2022", *IISS*, February 15, 2022.

8 Gareth Jennings, "Ukraine Conflict: Russia Employs 'Hypersonic' Missile for First Time", *Janes*, March 21, 2022.

9 Maxim Strachak, "Year 2021 in Review: The Results of Russia's Nuclear Weapons Modernization", *Eurasia Daily Monitor,* 19:6, January 25, 2022.

10 Thomas Nilsen, "Russia's Nuclear Submarine Construction Reaches Post-Soviet High", *The Barents Observer,* January 6, 2022; Thomas Nilsen, "World's Longest Nuclear Submarine Handed Over to the Russian Navy", *The Barents Observer*, July 8, 2022.

11 Natalia Zinets and Pavel Polityuk, "Russian Strikes Turning Mariupol into 'Ashes' as West Plans More Sanctions", *Reuters*, March 22, 2022.

The Campaign in Ukraine

The naval combat in Ukraine reflected Russia's original intentions. The entire range of activities that Russia has engaged in since the beginning of the campaign in Ukraine on non-naval fronts, has even been defined as war crimes against the citizens of Ukraine and seems to be inconsistent or reflect specific discretion. It is possible that this situation was due to either the campaign complications in the 'field' or miscalculated orders.[12]

The coastal and maritime control of the Black Sea and the Sea of Azov is a product of Russia's continuous long-lasting takeover of the area. This also has some influence on the Mediterranean as a whole, which has been under permanent Russian grip in recent years (for example: in Syria and Libya, and the development of civilian and semi-civilian outposts such as power plants in Egypt, Turkey and Algeria, as well as intentions in regard to Port Sudan). Alongside the investment in infrastructure, the deployment of military vessels, for example in the Adriatic Sea, has been renewed since July 2022.[13] Although over time it will be necessary to rely on technological aid and armaments delivered from the North Sea regions, since the passage – if only for supplies from the Black Sea – is blocked at the Turkish Straits, and the Mediterranean Sea – with an emphasis on Tartous – lacks sufficient infrastructure for the maintenance and supply of submarines, for example.[14] On the other hand, the presence of NATO fleets in this maritime area, with an emphasis on the Black Sea, including those based in countries such as Romania, Bulgaria, and even Turkey, which are members of the alliance, also affects the balance of forces in the entire maritime arena.

On the maritime level, the preliminary Russian takeover of more than half of the Ukrainian coast (which is over 2,700 km long) has, as mentioned, since 2014, surrounded the Crimean Peninsula, and since 2018 the Sea of Azov area. The inauguration of the longest bridge in Europe – the Kerch bridge (19 km) above the strait of the same name – connecting the Black Sea to the Sea of Azov – granted Russia full control over the passage of vessel traffic under the bridge, in the strait. Since the beginning of the war in Ukraine, the Sea of Azov, including Mariupol, its main port city, has been subjected to Russian offensive activity from the sea as well, similarly to the rest of the eastern Ukrainian coast.

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12 James Holmes, "The Question The World Is Asking: Is Vladimir Putin Rational ?", *19fortyfive*, March 12, 2022.

13 *Decode39*, "The Russian Threat in the Med: Italy's Chief of Defence Speaking", August 22, 2022.

14 Ibid, as well as in Colleen Graffy, "Who will control the Black Sea?", *GIS*, October 11, 2022; H. I. Sutton, "Russia Forced to Reduce Navy In Mediterranean As Ukraine War Drags On", *Covert Shores*, August 24, 2022.

It is worth noting here that Russian control of the Sea of Azov prodives full control over the (currently) exclusive navigation outlet, which connects the Caspian Sea with the Sea of Azov via the Volga and the Don Rivers (Figure 2). The Caspian Sea (in Russian zone) as well as the Sea of Azov and the Black Sea were defined as "vital" and "important" areas (respectively) in the revision of the Russian naval 2022 doctrine.[15]

It should be taken into account that Iran's involvement in helping Russia will increase the scope of maritime activity in the Caspian Sea routes as a whole, as well as in those of the Volga-Don, as a channel for transferring supplies to Russia. The war-oriented naval activity has an impact on the shipping traffic there, and this may also affect the continuation of shipping in the Black Sea and Mediterranean routes (while passing through the Turkish Straits). Not surprisingly, Putin himself inaugurated the Kerch Bridge, which due to its importance was significantly sabotaged (on October 8 2022), although navigation in the strait was not blocked as a result.

Figure 2: The shipping route connecting the Caspian Sea with the Sea of Azov and the Black Sea through the crossing of the Volga and Don rivers and the canal connecting them. In the picture is gate number 14 of the Volga-Don Canal

15 Official Russian Internet Portal of Legal Information, Ibid.

The Completion of Russian Hold or Control over Most of the Ukrainian Coast

As mentioned, the Russian control of the Ukrainian coast extended from the Don-Bass areas in the Russian sphere of influence adjacent to the Sea of Azov, approaching the Ukrainian coast on the Crimean Peninsula. These two sections of the Ukrainian coast make up about two-thirds of its total length, while the third part to the west is the Gulf of Odesa (Figure 3), and the coastline between the two deltas of the (northern) Dnieper and (southern) Danube rivers on the Moldovan border. The Ukrainian coast can be divided into three sub-areas as described above or alternatively into 8 segments made up of different shore segments.

The city and port of Odesa (in the west) dominate not only the sea to the southeast but also serve as an outlet for the Dnieper River north of Odesa, which leads to the important port city and shipyard, Mykolaiv.

The assembling of Russian naval forces on the eve of the outbreak of the campaign in Ukraine was probably intended to obtain naval and coastal control in this (more distant) western region. This is in view of the Russian Navy's advantages, since it has deployed forces in the Black Sea (since the end of December 2021).

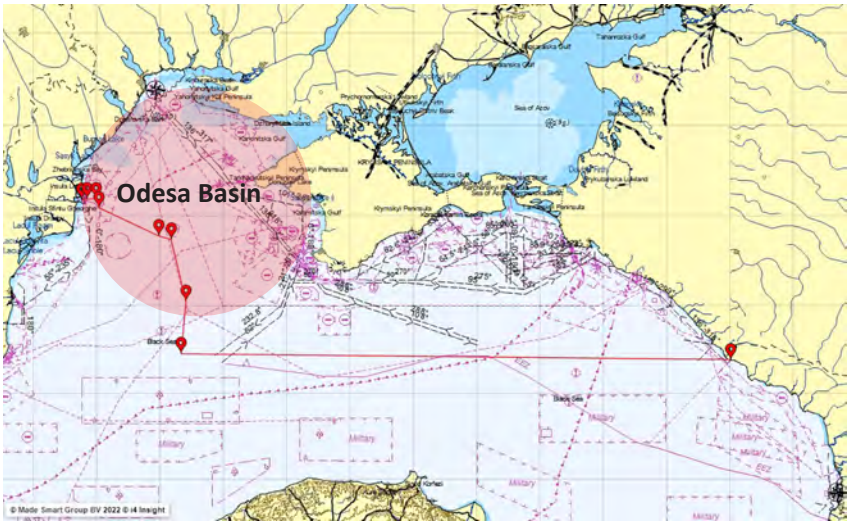

Figure 3: The Ukrainian coast, with emphasis on the basin of Odesa west of the Crimean Peninsula[16]

16 Source: "Russia – Ukraine War: Impact on Shipping", *North, Industry News*, November 29, 2022.

The planned Russian control of the Ukrainian home port in Odesa and the maritime and coastal areas adjacent to it was supposed to be a symbol of the occupation of the Ukrainian government – since it is the home port of the opposing navy (which may serve as an analogy to Kiev – the country's capital).

The Russian deployment toward the western Ukrainian coast was therefore expected to lead to the finalizing of its control over the entire Ukrainian coast, up to the estuary of the Danube River. The implementation of this hypothetical situation was supposed to give Russia a strategic advantage in the entire Black Sea area, serving as a gateway from/to the eastern Mediterranean to the Indian and Pacific Oceans (via the Suez Canal) and the Atlantic Ocean (via the Strait of Gibraltar). However, the freedom of military navigation in the straits was limited by Turkey, which also maintains control regarding the safety of navigation and the transportation of cargo – with an emphasis on dangerous goods and cargo being shipped in these straits.

To the extent that the Ukrainian coast as a whole would have been under 'extensive' Russian control, there would have been the potential to establish the Russian borders in relation to the entire 'southern' front, vis-a-vis its (physical) neighbors in the Black Sea: Moldova and Romania, but also Bulgaria and Turkey.

For this reason, Russia made sure to demonstrate its control in the western Black Sea arena, as part of a pioneering act at the beginning of the campaign, while taking advantage of the navy to operate from its forward base in Sevastopol. This move included attempts at a Russian takeover of the Ukrainian outpost on Snake Island in the south of the basin in question (near the estuary of the Danube, on the Romanian border). That is to say, an outpost with strategic control over the navigation at a crucial junction in the southwestern area of the Black Sea, which would have improved the Russian hold in the front even more.

Additional naval actions that Russia initially took in order to deepen its control in the area also included ground attacks, firing Land Attack Cruise Kalibr Missiles (LACM) from surface vessels as well as submarines.[17] Along with these, naval maneuvers were carried out by a group of participating forces of first, second and third line vessels – which included 6 landing crafts, air means, stationary means on the coast, along with other hybrid weapons used by the navy, as well as the Russian army (including conventional weapons, cyber weapons, subversion and more). However, despite the concentration of

17 H. I. Sutton, "Russian Submarines Launching Kalibr Cruise Missiles At Ukraine", *Covert Shores*, April 21, 2022.

means for a naval landing in the Odesa area at the beginning of the campaign,[18] the move itself was not yet realized.

Characteristics of the "Southern" Naval Campaign

A striking aspect of Russian activity on the "southern" front against Ukraine, in relation to the other combat fronts, is the fleet's combined naval and coastal capabilities. The Sea of Azov, the Black Sea and the Straits were defined as "important" to Russia, in the Russian naval doctrine, as (obviously) related to the very existence of the campaign in Ukraine.[19] This intention was therefore mainly attributed to the description of the activity near the shores of the Black Sea, the Sea of Azov, the central river basins which are centers for extensive maritime trade, such as the Dnieper and Dniester, the Volga-Don which also allows sailing to the Caspian Sea, and the Kerch and the Bosphorus Straits. The aforementioned Snake Island offers control over the Danube estuary in the southwest of the Black Sea. Even though the Kerch Bridge was attacked in early October, so far no significant effect of this event has been noted in regard to shipping activity in the strait. This situation may change, and if it does, civilian vessels may be damaged and shipping traffic may be disrupted. Such a precedent was set when Russia announced a change in its policy (on October 29), and its withdrawal (which lasted in practice for only two days) from the shipping arrangement concerning the 'grain export corridor' (implemented through Turkish mediation since the beginning of July 2022 – Figure 4). This change (and the pushing up of the end of the above arrangement period, originally scheduled for November 15) was due not only to the damage to the Kerch Bridge but also to the Ukrainian attack (on October 29) on the port of Sevastopol. Putin accused Ukraine of "exploiting" the 'grain corridor' route when carrying out that attack, which was based on unmanned platforms; vessel and aircraft activity was synchronized and resulted in damage to Russian platforms both inside and outside the port (see details below). However, after two days the grain corridor was reopened.[20]

Located along the entire Ukrainian coast (some 2,700 km long) are central ports and trade cities, which allow for the export of Ukrainian grains, raw materials and products, by way of maritime trade, including the shipyard industry itself, which manages the production of civilian as well as military vessels (dating back to the Soviet period). It

18 H. I. Sutton, "Evidence of Russia's Planned Amphibious Landings in Ukraine", *Covert Shores*, March 1, 2022.

19 Official Russian Internet Portal of Legal Information, Ibid.

20 "Russia Says It's Suspending Participation in Grain Deal With Ukraine", *New York Times*, October 29, 2022; "Beacon on the Black Sea", United Nations, Black Sea Grain Initiative Joint Coordination Centre, Retrieved December 18, 2022.

seems that the Ukrainians have been able to develop unmanned vessels as part of mainly self-manufactured weapons, as a response to the current needs, especially because the Ukrainian Navy is relatively small it did not possess many weapons at the beginning of the war. To this was also initially added the blockade of Ukrainian ports as well as the fear of a Russian takeover. The use of unmanned vessels, which due to their relatively small dimensions can be launched from a variety of positions and locations, is an alternative solution that has been successfully implemented, both for ports' closure and in view of the lack of other manned solutions in the possession of the Ukrainian Navy.

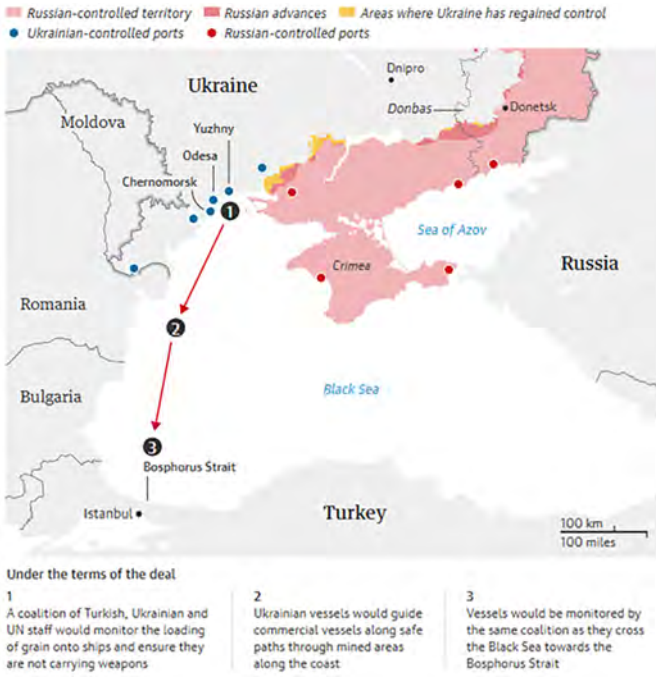

Figure 4: The grain corridor rout agreement as formulated in July 2022 between Russia, Ukraine, Turkey, and the UN[21]

Such an unmanned Ukrainian vessel was used in the western area of the Crimean Peninsula as early as September 26, 2022. On October 29, the Ukrainians used at least 7 similar devices, which attacked vessels in the Sevastopol area, and probably damaged the flagship of the Black Sea fleet, the "*Admiral Makarov*" destroyer (that replaced the "*Moskva*", which as mentioned, was sunk in April). A landing craft and another vessel, probably civilian, were also damaged. This attack is unique not only in the combination

21 Source: "Russia, Ukraine Sign Major Grain deal to Ease Food Crisis", *IAS Score*, July 29, 2022.

of unmanned (sea and air) means, but also in the ability to synchronize their attack both outside and inside the port.[22] This move can be summed up as Ukraine's impressive identification of operational needs. It should be noted that on November 8, 2022, another attack was carried out in the Novorossiysk area, which was also attributed to an anti-aircraft missile that hit a coastal energy transportation terminal near the port.[23]

Figure 5: An unmanned Ukrainian vessel[24]

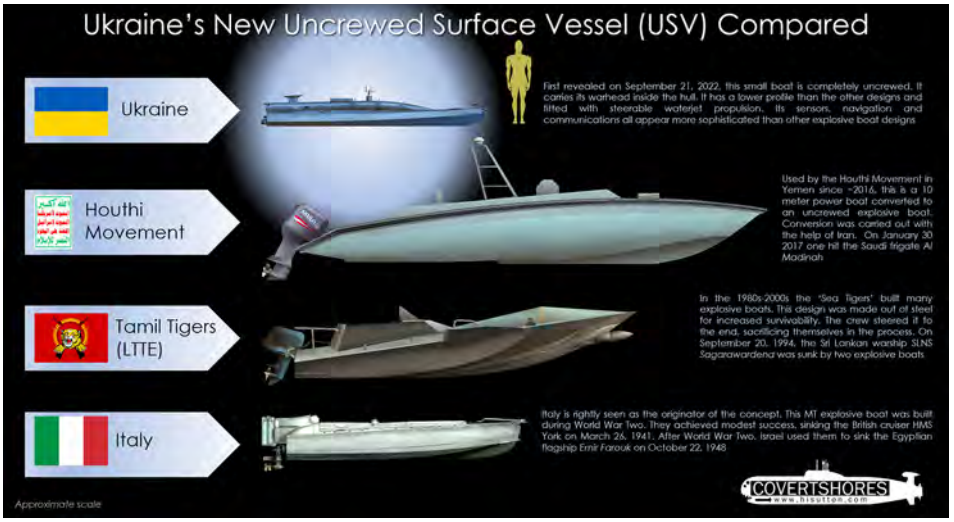

Figure 6: A comparison between the Ukrainian unmanned surface vehicles and other unmanned surface vehicles [25]

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22 H. I. Sutton, "Why Ukraine's Remarkable Attack on Sevastopol Will Go Down In History", *Naval News*, November 17, 2022; H. I. Sutton, "Ukraine's New Drone Boats That Will Change Naval Warfare, Explained", Video.

23 H. I. Sutton, "Ukraine's Maritime Drone Strikes Again: Reports Indicate Attack on Novorossiysk", *Naval News*, November 18, 2022.

24 H. I. Sutton, "Ukraine's New USV Compared", *Covert Shores*, September 22, 2022.

25 Ibid.

The Black Sea / the Significance of Ports and Infrastructure for Russia – Background

The location of the ports and infrastructure along the Ukrainian coast reflects the importance of Ukraine's accessibility to the sea throughout the year. Being aware of these factors, Russia planned that its actions in the 'southern' front would lead to territorial-coastal continuum. The expectation from the Russian navy to gain control over the entire western basin began on February 24 on Snake Island. Although operation on this island was a practical expression of the beginning of the campaign, in practice, the western coastal hold did not reach full realization for Russia, neither on Snake Island nor in the western region of the Ukrainian coast in general.

The beginning of the 'special operation' (as named by the Russians) during the winter (end of February) of 2022, probably intended to take advantage of the 'General Winter' factor. Apparently, the aim was to add pressure and influence on the consumers of Russian energy in Europe. In Russia's estimation reducing its supply of gas at the peak of consumption season was expected to provide in exchange some criticism and opposition to Russia's actions in Ukraine. Even though this assumption proved to be wrong during the previous winter, the main consequences were economic. The implications for the current winter are not yet clear, however predictions are not optimistic. Russian influence on maritime traffic was also evident, with an emphasis on trade in the Black Sea and the Ukrainian ports, allowing all year-round activities in terms of the weather. Such availability has been affected by other circumstances, for example, Russia's (temporary) withdrawal from the Grain Corridor Deal.

The Black Sea, as well as the Russian naval and coastal units deployed in it, has, in recent years, been nurtured by President Putin. His (personal) involvement also contributed to the equipping of the naval forces there, and to holding demonstrations of force (maneuvers) in which he participated. Thus, the Russian national interests that prioritized the Black Sea Fleet rightly established an expectation from this fleet for more control and influence in the region, and even more so in the context of the campaign in Ukraine.[26] This expectation was disappointed by the time the two fleet flagships: the "*Moskva*" cruiser and probably also the "*Admiral Makarov*" destroyer were sunk and damaged (respectively) during the fighting.

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26 Ido Gilad, "The Russian Navy – Central Trends in 2019 and their Implication in the Middle East", in Shaul Chorev and Ehud Gonen (eds.), *Maritime Strategic Evaluation for Israel 2019/20* (Haifa: Maritime Policy & Strategy Research Center, University of Haifa), p. 3.

Additional possible background tying Russia and Putin personally to the Black Sea, might refer to the assets he has accumulated in the city of Sochi, the capital of the "Russian Riviera" on the Black Sea coast. This region in where Putin arranged for the hosting of the Winter Olympic Games there (2014). He has often spent time and hosted extensive political activities there in recent years. (It is possible that his personal fondness for the Black Sea can be seen as a parallel to another coastal area – of the northern Baltic Sea, in St. Petersburg, which also influenced him and is where he grew up).

Maritime Aspects of the Campaign in Ukraine

The Geostrategic Maritime Aspect

Russia's naval/coastal move was part of the overall campaign in Ukraine from the start. This fact caused Ukraine to hasten and raise arguments against Russia (as early as February 26), and turn them into an appeal to Turkey (a member of NATO), to exercise its right under the Montreux Convention (1936).[27] The treaty permits Turkey in times of war, or if Turkey recognizes a threat that could badly affect navigation, safety or security – to prevent sailing in the Turkish Straits, and in regard to military vessels categorically. Turkey's response did indeed lead to its exercise of control preventing the passage of military vessels. This caused the Russian fleet in the Black Sea to remain there, in effect blockaded. Without being able to reach the Mediterranean Sea for supplies, or vice versa – to gain assistance and reinforcements from other vessels that had to enter the Black Sea.

On the other hand, Turkey became an intermediary between the parties at war regarding the regulation of shipping in the 'grain corridor', the formation of which has made it possible since July 2022 to export grains from Ukraine. The Turkish involvement proved to be important again at the end of October, when Russia announced that it was withdrawing from the said arrangement, alleging that it had been violated by Ukraine while taking advantage of the shipping corridor in question to attack Russia with unmanned vessels on October 29. Two days later the deal was resumed.

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27 Articles 20 and 21 of the 1936 Montreux Convention indeed refer to "In time of war" states in which the Turkish government as the coastal state will have entire discretion regarding granting the right of passage to military vessels and submarines in a floating state in a case in which "should Turkey consider herself to be threatened with imminent danger of war". Note: The threat of blocking shipping on the part of Turkey may probably be relevant even not in times of war, and even subject to "security" whims that can be a reason (even if a false one) for which a delay or stoppage of the passage of security vessels or carriers of dangerous material will be imposed, even if ostensibly, And subject to 'civilian' reasons of sailing safety, load, etc.

Turkey's appearance on the scene points to the significance of its unique position and importance which determines the traffic regime in the Straits (in practice). This demonstrates the complex bilateral relations between the parties. The stoppage of military vessel navigation in the straits has implications, as mentioned, regarding shipments related to military cargo as well. A previous Turkish threat to block the straits to Russian military vessels should be mentioned here as well. This took place in December 2015, following the downing of a Russian Sukhoi 24 in Syria by Turkish forces, and a Russian threat to retaliate against Turkey as a result.

The damage to merchant fleet vessels in the Black Sea during the first days of the campaign (a tanker, two bulk carriers, and a merchant ship flying different flags: Turkish, Japanese, Moldavian, and Estonian) led to the halting of trade traffic to Ukraine (also for insurance coverage reasons). On February 26, a Russian merchant ship was also detained by the French Navy in another maritime area – the English Channel, as part of the sanctions announced by the European Union on Russia.

International Reactions and Involvement

International reactions were significantly expressed on an economic level in the international arena in the context of global inflation – due to the disruption in the supply of raw energy and its products as well as raw materials and their products, including food from Ukraine (itself). The global shipping implications for the crisis were evident in more than just the response to local damage to the abovementioned ships raising different national registration flags. On a global level, an obvious need for countries to organize and promote their own interests is evident – these needs are mainly economic but also political. An alternative solution was required for the supply of energy and its transportation from alternative sources, for example through Turkey. Thus, it has become necessary to utilize alternative sources of energy in the sea as well, and transport them through the sea or by sea from Turkish ports in the Black Sea – using tankers, or alternately through the network of gas pipelines in the Black Sea (from east to west). It should be mentioned that a gas pipeline – albeit in the North Sea – was sabotaged as a consequence of the overall campaign. Three explosions hit the "Nord Stream" pipeline transporting gas from Russia to Northern Europe (at the end of September 2022). This act was allegedly attributed to Russia but noy yet determined.

The relationship between Iran and Russia continues to fuel the crisis in Ukraine, by supplying of unmanned aircrafts and possibly guided missiles. Iran may benefit from the assistance it provides to Russia in the maritime domain. Among these benefits are the maintaining of navigation and shipping in the Caspian Sea, from and to the Black Sea toward the Mediterranean. Russia has been maintaining the navigation on this

sailing route thus far, however in this context, the Iranian involvement may raise more consequences, even beyond the operative ones as indicated.

The Operative Maritime Aspect

As mentioned, the southern front of the Russian attack on Ukraine was expected to include maritime activity. In addition to the moving of naval forces as part of the preparations, which will be mentioned below, Russia also relied to a large extent on infrastructures that it had previously held on to in the Black Sea, such as in Georgia and the Crimea, which it occupied about eight years earlier. The inauguration of the bridge (2018) over the chokepoint in the Kerch Strait, at the time, was accompanied by the naval conflict between the Ukrainians and the Russians – who then attacked a group of three second-line vessels of Ukraine. These were confiscated, as their teams were imprisoned in Russia for about a year. Even though the Kerch Bridge was damaged by Ukraine on October 8 (Figure 7) and harmed Russian sovereignty and the project that Putin personally supported (and even inaugurated), no lasting effect on shipping traffic in the strait was evident afterward.

Figure 7: The Kerch Bridge explosion on October 8[28]

As for the moving of naval units to the Black Sea prior to the "special operation" – with an emphasis on first-line vessels, were included three Kilo-class submarines in which Kalibr naval missile launches were used as well – it became evident that vessels were also

28 H. I. Sutton, "Attack On Kerch Bridge: Initial Geolocation Of Damage", *Covert Shores*, October 8, 2022.

concentrated in the Mediterranean Sea, including three Kilo submarines, two Salva-class *Gorshkov* and *Udloy* cruisers. Furthermore, a force of six landing craft and auxiliary vessel forces were positioned there as well.[29] The Russian naval outpost at the Syrian port of Tartous has been used as a hub for the deployment of naval units and missiles in a coastal position. At the Khmeimim air base (on the Syrian coast) Tu-22M3 BACKFIRE-C aircraft armed with Kinzhal supersonic air-to-sea missiles were deployed. On March 20, it was also reported that a nuclear-powered 'Akula' submarine had arrived in the Mediterranean Sea.[30] Accumulating naval forces of the Russian Navy into the Black Sea has therefore begun (since the end of December 2021) and gained a relatively large number of vessels. The Russians claimed that this was a planned maneuver, and these various vessels were meant to participate in it.

A peak in the Russian naval presence could be identified during March 2022 when some 15 Russian vessels were present in the Gulf of Odesa (on the southwest Ukrainian coast) split between three secondary task forces (Figure 8).

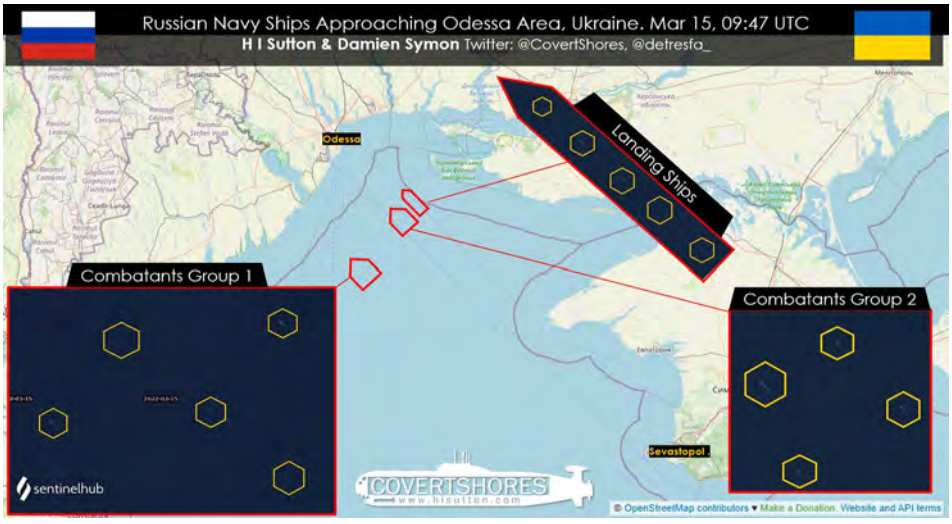

Figure 8: The layout of Russian vessels in the Gulf of Odesa in March (March 16, 2022)[31]

29 H. I. Sutton, "Russian Navy Make Significant Pre-Positioning Moves", *Covert Shores*, February 17, 2022; as well as in a YouTube video (which he edited), "Russian Navy Build Up in Mediterranean: What You Need to Know".

30 "Russian Navy Akula class submarine deployed in the Mediterranean Sea", *itamilradar*, March 20, 2022.

31 H. I. Sutton, "Russian Navy Landing Ships Seen Approaching Ukrainian Coast Near Odessa", *Naval News*, March 15, 2022.

The first defining naval event, the sinking of the "*Moskva*" cruiser, occurred on April 14 and was characterized as a game changer on the naval operational level. Apart from the political consequences that followed, in view of the involvement of other participants (such as Turkey, which manufactured drones that were probably part of the attack, alongside information from other foreign parties which were involved and influenced the course of action). It seems that additional operative consequences were related to the Russian naval forces' change in naval operations.

Another significant event (on October 29) apparently included damage to the *Admiral Makarov* frigate and at the operative level was a demonstration of Ukraine's tactical implementation of combat-related lessons. It is possible that Ukraine identified weaknesses and corrected them during the campaign, and partially implemented these corrections in the case of the sinking of the *Moskva* cruiser (in which the use of missiles and drones was combined). The next step included a more complex launch in which vessels and unmanned aircraft were used in a synchronized manner, as in the attack on the *Admiral Makarov* frigate. In addition, incidents of attacking unmanned vessels by smaller drones were noted as well.

Furthermore, significant Russian infrastructure elements have been developed and established in recent years in the area. The most prominent are the outposts in Tartous port, the Khemimim airfield and the Syrian coast as a whole (since 2015). All serve as an infrastructural-logistic and operational base for the benefit of Russia and its naval activities in the entire Middle East arena. They are intended to be seen as related, thus affect the Black Sea arena as well.[32] It is worth recalling that the east Mediterranean basin was identified as "important" in the 2022 Russian naval doctrine update. This is logical given the holding onto the Syrian coast along with the ongoing campaign in the Black Sea.

The Russian presence in Syria alongside Iranian forces, which in recent years share and coordinate their mutual activities, might be the background for Iran's involvement in the campaign in Ukraine, including in the context of using unmanned explosive aircraft manufactured by Iran (as apparent since the end of October). The need for integrating the Iranian equipment in Russia's order of forces was due Russia's lacking of such measures beforehand. In addition, a supply of Iranian-made precision guided missiles to Russia was mentioned as well. Several reports also refer to the integration of Iranian experts

32 Ido Gilad, "The Activity of the Russian Navy in 2018 in the Middle East", in Shaul Chorev and Ehud Gonen (eds.), *Maritime Strategic Evaluation for Israel* 2018/19 (Haifa: Maritime Policy & Strategy Research Center, University of Haifa, 2019), pp. 104–105; Gilad, "The Russian Navy – Central Trends in 2019 and their Implication in the Middle East," pp. 8–9.

in the campaign alongside Russia. Thus, it is worth referring to the significance of Iranian involvement in the campaign, which entitles Iran to the status of a regional power.

The Tactical Aspect

The maritime aspect of landing operations initially included a concentration of second line vessels, including six Ropucha-class landing ships. The Russian landing from the sea in the Mariupol district met with some success, while the main objective of the planned landing in Odesa was not realized. Additional landing targets included the Kherson River and Mykolaiv Port alongside other locations, including Snake Island (Zmiinyi, on February 24). During this Russian activity, the deputy commander of the Black Sea Fleet, Admiral Andrey Paliy, was killed in Mariupol (on March 20).[33]

- The combination of sea mines, that were drifted toward the Romanian coast and even toward the Bosphorus strait, resulted, at least in part, from the activity of the Ukrainian side itself.
- The control of the Sea of Azov allows various and local forces of the Russian Border Guard, as well as landing forces, to operate in and from it. In this context, it is worth mentioning the 'apparently local' activity under the Kerch bridge (November 2018) which had international geostrategic implications, even though the parties involved at the time were relatively local (on both sides – Ukrainian and Russian).

Examples of Tactical Maritime Hits

- On March 16, it was reported that the *Vasily Bykov* corvette had arrived at the port of Sevastopol (about 140 miles from Odesa) after it had been hit 9 days earlier, around March 7, by Ukrainian Grad artillery fire.[34]
- Dozens of Marines from the Ukrainian 36th Unit were killed in Mykolaiv port.[35]

Tactical aspects that have been implemented since the sinking of "*Moskva*" and also incorporated a self-made Ukrainian missile (the 'Neptune'), as well as the equipping with U.S. made Harpoon missiles, a probably self-made unmanned vessel, as well as unmanned aircraft made by Turkey. On the Russian side, there were attempts to obtain vessels that had been confiscated from the Ukrainian Navy, and to integrate weapons that were in short supply and installed on various platforms and included fire protection systems.

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33 Ben Kesslen, "Top Russian Naval Chief Born in Kyiv Reportedly Killed in Battle", *New York Post*, March 20, 2022.

34 Tom Ough, 'We F------ Hit Them!' Ukraine Gets Revenge on Russian Warship that Attacked Snake Island Soldiers", *The Telegraph*, March 7, 2022.

35 Michael Schwirtz, "Russian Rocket Attack Turns Ukrainian Marine Base to Rubble Killing Dozens", *New York Times*, March 19, 2022.

In the area of active attack, land-based missiles were integrated into extended launch platforms, including the integration of Iranian-made means (unmanned aerial vehicles and precision-guided missiles) for the first time.

Conclusion

Russia's actions on the southern front initially integrated naval and coastal means. The Russian Navy was expected to provide an effective response in the west of its assigned area, i.e., the western arena (which is relatively remote from the front). The naval forces should have served as a potential solution to bridging these range gaps, taking advantage of their forward hold on the Crimean Peninsula with an emphasis on Sevastopol and its naval access. Russian control through its navy was supposed to provide great advantages for Russia to achieve full control of the northern Black Sea area, on military, political, and economic levels.

The Russian goal was to gain control of the entire Ukrainian coast – with an emphasis on the southwestern front, at the center of which is the Gulf of Odesa – this was the plan at the beginning of the campaign in the Snake Island incident. At the beginning of the campaign, the Black Sea, Mediterranean Sea and Caspian Sea fleets launched some of the first Russian military attacks on Ukrainian infrastructure. However, after 50 days of fighting in this area, the Russian fleet suffered a considerable blow due to the *Moskva's* sinking. It is clear that this was the beginning of the second phase of the naval campaign – which has since been characterized by the relative withdrawal of the Russian fleet.

The maritime/coastal area in question is unique in its geographical structure, since the area contains many dominating, or alternatively, dominated shipping hubs. There are bays, straits, peninsulas (Crimea), closed seas (Azov, Caspian), river estuaries (Dnieper, Dniester, Danube), and dominating islands (Snake Island). There are also strategic, military and civilian facilities (ports, terminals, energy assemblies, communication lines, etc.) located in this area. The naval combat arena in question is littoral (in general) – with a limited and relatively dense terrane (unlike the open sea). Hence, a combination of a variety of forces in the various complexes of activities (marine or coastal) is required to give these forces effective weight within the required response.

It is evident that the naval consequences developing amid the campaign and emerging, as a result, are internalized by both sides and are affected by the learning . The dynamic aspects of the events since the outbreak of the campaign until now are evident. It is worth noting that integration and self-development of weapons continue to emerge and are being adopted as unique solutions. The dynamic marine activity continues. An expression of this is evident in the Russian threat to withdraw from the "Grain Corridor" deal. This

means potential exposure of commercial vessels and commercial transport at sea, in the future, to threat and excessive risk from Russia. For its part, Russia demonstrates considerable aggression against infrastructure targets, including civilian targets. Shipping is included in this, even though damage to the export of food at the beginning of the campaign was and will continue to be a threat with global significance, which will probably lead Russia to sabotage this equation only in distinct extreme situations.

The combat in Ukraine is significantly expressed in the updated Russian naval doctrine (2022). This arena is divided into three levels of importance. The doctrine mentions "vital" areas for Russia – among which is the Caspian Sea. On the other hand, the Sea of Azov, the Black Sea and the Straits were defined as having "important", i.e., merely asecond degree of importance. The eastern Mediterranean, together with shipping routes along Africa and Asia, were also categorized as "important" regions in the updated naval doctrine.[36]

It follows that all the central points linked to the campaign in Ukraine are specified in the updated naval 2022 doctrine. Thus, they reflect the importance of both the area and the campaign in Ukraine for Russia. The status of the Caspian Sea and its maritime uses were emphasized in the doctrine as well. These may well indicate trends of strengthening ties with Iran, including in the maritime arena in question, if only as a result of various shipments, including weapon shipments, which may be used in the current war against Ukraine. However, the success of using these routes (as far as the Black Sea) may be an incentive for Iran to work to expand their distribution toward other destinations in the Middle East.

Potential Russian-Iranian cooperation in the maritime transport context may be based on the advantages of Russia's forward deployment in the region. In this context, it is worth noting the existing Russian hold on the Tartous port on the Syrian coast. It was defined in the 2022 naval doctrine as a "permanent base". However, despite the permanent hold on Tartous (since 2015), the infrastructure in place, while had been developed since then, has not yet become a full alternative in terms of the facilities and capabilities of providing infrastructure and the full techno-logistic service as attributed to the Black Sea. This gap is even more evident in view of the blockade imposed by Turkey on the passage of military vessels through the Turkish Straits.

In relation to Israel, the recommendation that has been raised in the past, to preserve coordination relations with Russia is even more significant in light of aspects that have a great impact on the maritime arena which emerged during the past year.[37] This

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36 Official Russian Internet Portal of Legal Information, Ibid.

37 Gilad, "The Russian Navy – Main Trends in 2019 and their Implications in the Middle East", pp. 22–23.

(multilateral) coordination could possibly be upgraded, for example, if Israel is regarded as an acceptable potential mediator, agreed upon by both sides (Russian and Ukrainian)

Among the main considerations in favor of continuing the coordination are:

1. The relevant clauses in the updated Russian naval doctrine (July 2022), according to which Russia continues to show, if only in theory, a great interest in the various maritime areas in the Middle East.
2. Russia continues to establish its grip on the eastern Mediterranean, with an emphasis on the Tartous port and the Syrian coast.
3. Russia continues to maintain, despite the campaign in Ukraine in the past year, coordination with key regional players, some of these efforts have even become more significant (such as coordination with Turkey), and others were strengthened even more as a result of the campaign and included the expansion of cooperation and alliances (with an emphasis on Iran). For this reason, beyond the coordination of positions and activity that was particularly evident in Syria, common interests were discovered and developed, including cooperation regarding the campaign in Ukraine, cooperation in the Caspian Sea, mainly in regard to maritime transportation and infrastructure development respectively, equipping and supplying weapon assemblies, and more.

Russia's New "Naval Doctrine" in the Context of the War in Ukraine

Tzevy Mirkin

On July 31, 2022, during a visit to Saint Petersburg, President Vladimir Putin signed Russia's new naval doctrine.[1] The ceremonial signing was held at the State Museum of History, located in the Peter and Paul Fortress, which was built in 1703, marking the beginning of Saint Petersburg's construction. The fortress was meant to defend the mouth of the Neva River but was mainly used as a prison for political prisoners.

The new doctrine replaced the previous one, approved in 2015. Although this signing took place about five months after the Russian invasion of Ukraine, it is not likely that the new doctrine was written as a result of the war. The preparation of such a document (which is 56 pages long), usually takes a long while, and before it was presented for the President's signature, it would have gone through several stages of approval at all levels of military leadership, as well as a process of coordination with non-military entities whose activities it affects, including those managing civilian shipping, the defense industries and the shipping industry. For this reason, it is more likely that most of this doctrine's preparation took place before the war began.

The main changes to the doctrine reflect Russian leadership's evolution when it comes to the perception of threat. The new version includes a classification of various naval categories, according to their level of importance for Russia. These categories were divided into three groups: "vital", "important" and "others". According to the doctrine, the "vital" category is "directly related to the state's development, to the protection of its sovereignty, to its territorial integrity as well as to the strengthening of its defense; and has a critical effect on the socio-economic development of the state". This category includes Russia's internal waters, its territorial waters, economic waters and the continental slope, the Arctic arena, including the Northern Sea Route, the Sea of Okhotsk, and the Russian part of the Caspian Sea.[2]

The "important" category relates to issues that "largely influence Russia's economic development and national security". This category is tied to the oceans and seas to which Russia has direct access (including the Black Sea and the Sea of Azov), the eastern part of the Mediterranean Sea, the Black Sea straits, the Baltic Sea, the Kuril Islands, and "areas

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1 A video of the signing ceremony Путин утвердил Морскую доктрину РФ и Корабельный устав ВМФ.

2 "The Russian 2022 Naval Doctrine", section 14.

of international shipping routes, including those along the coasts of Africa and Asia".[3] It is important to note that the Black Sea, which in the past six months has become Russia's main naval arena, is included only in the second level of importance to Russia.

Another change is the further emphasis on the definition of threat. Although the 2015 doctrine mentions various threats to Russia, the phrasing in the previous version is not as pronounced, and this topic is spread out among the various chapters dedicated to different geographical arenas. The new version specifically notes that "The independent domestic and foreign policy of the Russian Federation causes opposition from the United States and its allies, which strive to maintain their dominance in the world, including in the oceans".[4] Furthermore, it mentions "The United States's strategic policy for dominance of the oceans and its influence on international trends", as well as "the ambition of the United States and its allies to limit Russia's access to ocean resources and critical sea routes". Moreover, the "Claims of several countries to Russian territories located on the coasts" were defined by the authors of the 2022 doctrine as "major challenges and threats to Russia in the maritime context".[5]

The changes in the definition of threats are also reflected in the chapters dedicated to the various arenas. Thus, the chapter of the 2015 doctrine discussing the Atlantic arena, states that the "national naval policy" in this arena "stems from the existing conditions in the arena that are adapted to the North Atlantic Alliance alone, and create ineffectiveness when it comes to existing tools meant to ensure international security".[6] The 2022 doctrine states that "the national maritime policy in the Atlantic arena is determined taking into account the existence of NATO, whose activities are aimed to create direct confrontation with the Russian Federation and its allies".[7]

Regarding the Black Sea and the Sea of Azov, which are perceived by the Russians as part of the Atlantic arena, the 2015 doctrine stated that its main objectives are "the creation of a naval regime based on international maritime law that is convenient for Russia,[8] "the organization of navigation rules based on international law in the Kerch strait"[9] and "Improving the order of forces and the organization of the forces in the Black Sea Fleet, as well as developing their infrastructure in Crimea and on the coasts of the Krasnodar

3 Ibid, section 15.

4 Ibid, section 20.

5 Ibid, section 22.

6 "The Russian 2015 Naval Doctrine", section 51.

7 "The Russian 2022 Naval Doctrine", section 53.

8 "The Russian 2015 Naval Doctrine", section 57a.

9 Ibid, section 57b.

district".[10] The only change in the 2022 doctrine is the definition of the first goal as a "comprehensive strengthening of the Russian Federation's positions in the region" and the omission of the mention of the Kerch Strait, while the other goals remain unchanged.[11]

Similarly to the previous doctrine, the new doctrine refers to the development of shipping abilities as well. The chapter discussing this mainly repeats the previous version, especially in regard to the need to ensure "independence" in the field of shipping.[12] However, it was precisely this chapter that caused very significant reactions, perhaps even more noticeable than those that arose following any other chapter. This is related to subchapter 9, which describes one of the objectives as ensuring the capabilities of the Russian shipping industry to build large ships, including aircraft carriers.[13] Many interpretations considered this to be a statement of intent regarding the building of aircraft carriers. The government news agency "RIA-Novosti" reported that "the naval doctrine turned the construction of aircraft carriers into a priority when it comes to shipping".[14] The leading Russian economic newspaper "Vedomosti" commented on the new doctrine in an article titled "Russia's New Naval Doctrine Enables the Construction of Aircraft Carriers", in which it mentioned that neither the previous doctrine nor the government plan for the development of shipping, previously mentioned these type of ships.[15] However, it is important to emphasize that the doctrine does not mention the intention to build aircraft carriers but the need to ensure the ability to build large ships, including aircraft carriers. The meaning of this wording is an admission that Russia does not currently have such capabilities and the intention here is to create these abilities.

Despite all of the changes and the new wording in this document, the most striking characteristic of the new doctrine is the complete absence of the mention of the war between Russia and Ukraine, which since beginning in late February 2022, became the most significant influence on Russian strategic thinking, and the main factor influencing

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10 Ibid, section 57c.

11 "The Russian 2022 Naval Doctrine", sections 56-3.

12 "The Russian 2015 Naval Doctrine", section 75, "The Russian 2022 Naval Doctrine", sections 66a, 66b.

13 "The Russian 2022 Naval Doctrine", section 66i.

14 "Naval Doctrine Calls Construction of Aircraft Carriers the Preferred Objective of Shipping Industry" (Морская доктрина называет строительство авианосцев приоритетом судостроения), RIA-Novosti news agency website, July 31, 2022.

15 "Russia's New Naval Doctrine Allows for the Construction of Aircraft Carriers: During 30 Post-Soviet Years, no Such Ships were Built for the Russian Navy" (В новой морской доктрине России допустили строительство авианесущих кораблей: Все постсоветское 30-летие для российского ВМФ такие суда не строились), the *Vedomosti website*, July 31, 2022.

the country's strategic situation. The sanctions mentioned in this document (such as those against the defense industries and the shipping industry, as well as limitations on the supply of technologies in these areas) were all previously imposed, shortly after the annexation of the Crimean Peninsula.[16]

This fact supports the assumption that the doctrine has almost nothing to do with the war, and is a pre-planned updated version of the previous doctrine. However, its importance is not only in its content but also (and perhaps even more so) in the circumstances of its appearance.

The doctrine appeared after several events that became signifiers of the Russian navy's failure, first and foremost, the sinking of the flagship of the Black Sea Fleet, the "*Moskva*" cruiser, on April 14, 2022. As a result, the commander of the Black Sea Fleet, Admiral Igor Osipov, was dismissed, and there were even rumors of his arrest.[17]

Moreover, during the war, the navy only participated in auxiliary roles. Landing operations that seemed to be pre-planned were canceled, and the two marine brigades that were concentrated in this arena were used as infantry units in land operations and suffered heavy losses.[18] These developments damaged the reputation of the navy, which was presented during the past decade as a sign of the revival of Russia's military power. As a result, Russian leadership was forced to take steps to try and improve this situation. For example, it was decided to turn the signing ceremony into a demonstration of political leadership's support and trust in the Navy.

Under these circumstances, the signing ceremony was no less important than the doctrine itself. Usually, the signing of such documents (and the signing of official documents in general) is not televised or held in places like the State Museum of History in Saint Petersburg, but in one of the president's residences. Moreover, alongside the naval doctrine, the president signed the "Naval Service Regulations" – a document outlining the conduct of the entire naval force at the everyday level. The signing took place in the presence of the navy commander and the minister of defense and was even accompanied by honor guard soldiers in ceremonial naval uniforms.

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16 "The Russian 2022 Naval Doctrine", section 23d.

17 "The Black Sea Fleet has a New Commander" (У Черноморского флота сменился командующий), *BBC News Russian Service*, August 17, 2022.

18 "What do we Know about Russia's Losses During Ukraine's Counterattack?" (Что мы знаем о потерях России в ходе контрнаступления Украины), *BBC News Russian Service*, September 16, 2022.

It is also important to note that the issues emphasized in the media (such as the ones related to the possible construction of aircraft carriers and the deployment of naval bases in distant arenas), were not related to the Black Sea arena. In addition to the fact that the doctrine was hardly adapted to the situation created after February 24, 2022, its introduction was probably meant to divert attention from the navy's participation in this war. In other words, this is an event whose media significance exceeds its strategic one.

The Regime of the Straits (Montreux Convention 1936) and the Russia and Ukraine War

Glen Segell

This article examines the Regime of the Straits (the Montreux Convention 1936), governing the Turkish Straights that connect the Black Sea to the Mediterranean Sea. The regime it established is once again on the agenda following the military attack launched by Russia on Ukraine on February 24, 2022. Shortly after the onset of hostilities, Russia initiated a naval blockade of Ukrainian ports. The Convention prevented countries outside the Black Sea area from sending ships into the Black Sea to break the blockade. In July, an agreement brokered by the United Nations and Turkey was reached for limited exports of some products—specifically grain—through three Ukrainian ports as many countries worldwide rely on this grain, and without it, there would be hundreds of millions of starving people. However, the same agreement also prevents any ships entering the Black Sea to import goods to Ukraine as Russia is concerned that foreign weapons could be shipped there. The period from February to July 2022 was tense, leaving the question open of whether other states, especially NATO members, would contravene the Montreux Convention and send naval warships to break the blockade to alleviate the global grain shortage. The Agreement must be renewed every 120 days and so remains at the fore of international attention

Introduction

The seas, and especially narrow sea passages, are critical to ensuring maritime transport and preventing possible threats. One such significant maritime passage is the Turkish Straits, formed by the Bosporus and Dardanelles Straits. The Turkish Straits constitute the sole connection from the Black Sea to the Mediterranean Sea, and so to the rest of the world. The significance is that whoever controls that chokepoint controls the passage of all ships between the two seas. In this case, control has been granted to Turkey by international agreement.[1]

This article revisits the Regime of the Straits, often known simply as the Montreux Convention (1936).[2] It is an international agreement—signed by Australia, Bulgaria, France, Greece, Japan, Romania, Yugoslavia, the United Kingdom, the Soviet Union, and Turkey—governing the Turkish Straits, and it is still in effect. It gives Turkey control over access to key straits of the Black Sea—an agreement that is considered a big win for the

1 A map of the Turkish Straits.

2 United Kingdom Foreign, Commonwealth & Development Office, Convention Regarding the Regime of the Straits, Treaty Series No. 30, July 20, 1936.

country's foreign policy to this day. The Convention relates not only to the passage of ships but also to the security of Turkey and the other Black Sea countries (Bulgaria and Romania, who are European Union and NATO members, as well as Georgia, Moldova, Russia, and Ukraine). The regime it established is once again on the agenda following the military attack launched by Russia on Ukraine on February 24, 2022; the total blockade of Ukrainian ports by Russia between February and July 2022; the United Nations and Turkey brokered agreement to permit grain exports since July; and the ongoing blockade of imports into Ukrainian ports.[3]

Figure 1: The Black Sea corridor/straits/maritime chokepoint[4]

Five issues are under discussion: (1) the dilemma of Turkey wanting to be neutral in the Ukraine war but being bound by the 1936 Convention; (2) whether Russian and Ukrainian warships will be allowed to pass through the Turkish Straits; (3) whether the future passage of warships from other states will be allowed in the event of possible international military measures against Russia; (4) whether such ships could have established a naval humanitarian corridor between February and July to ensure the export of grain to prevent a global shortage due to the Russian blockade of Ukrainian ports; and (5) whether such ships could be used to enable imports to Ukrainian ports given the ongoing Russian blockade.

This article will examine these issues through six lenses: (1) the context of the current Russia-Ukraine conflict; (2) the Montreux Convention of 1936; (3) the geopolitical

3 Aditi Sangal, Meg Wagner, Adrienne Vogt, Melissa Macaya, Rob Picheta, and Lauren Said-Moorhouse, Ed Upright, Maureen Chowdhury, and Fernando Alfonso III, "February 24, 2022 Russia-Ukraine News", *CNN*, February 24, 2022.

4 The Turkish Straits Vessel Traffic Service (TSVTS).

dimensions of the Montreux Convention of 1936; (4) the terms of the Montreux Convention of 1936; (5) adhering to the terms of the Montreux Convention of 1936; and (6) revisiting the terms of the Montreux Convention of 1936. The conclusions explore whether the Convention can survive this conflict, whether it needs to be renegotiated as naval warships and technology have changed dramatically since its signing, and, if renegotiated, whether this may well challenge other similar international agreements.

The Context of the Current Russia-Ukraine Conflict

The Montreux Convention was aimed at providing some security assurances to Turkey and other countries on the Black Sea in the 1930s arising from the presence of foreign warships (the Convention uses the concept of "warship" instead of "military ship"). The ongoing geographical aspect is that the Straits are the only sea passage between the Black Sea and Mediterranean Sea, and thus constitute a chokepoint.[5] Maritime chokepoints are located throughout indispensable marine trade routes, and in case of global security problems, avoiding these chokepoints has often been suggested as a workable option. However, as these Straits are the only sea passage between the two seas, going through them is the only viable option for any maritime trade with the eight states on the Black Sea.

A recent crisis arose as Russia implemented a full naval blockade of Ukraine's Black Sea ports between February and July 2022 and since then a blockade of imports to Ukraine. Russia has permitted exports of grain following a United Nations brokered agreement.[6] At the onset of the conflict in February 2022, more than 100 foreign-flagged vessels and hundreds of mariners were stranded in Ukrainian ports. On July 22, the United Nations, the Russian Federation, Turkey, and Ukraine agreed to the Black Sea Grain Initiative, at a signing ceremony in Istanbul.[7]

The Russian military strategy aimed at cutting Ukraine off from its access to the sea to decapitate its economy, and between February and July, threatened world food security. At the height of the export blockade, world leaders expressed their anger at the situation at the World Economic Forum in Davos, Switzerland, in May 2022, calling it the

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5 Lewis M. Alexander, "The Role of Choke Points in the Ocean Context", *GeoJournal* 26 (1992): 503–509.

6 Bill Coombs, "Russia's War in Ukraine: The War at Sea", *International Centre for Defence and Security*, Brief, no. 6, June 21, 2022.

7 United Nations, "Updates from the Joint Coordination Centre", *Black Sea Grain Initiative Joint Coordination Centre*.

"weaponization of food".[8] The export of Ukrainian grain provides food security for more than 300 million people around the world. The six-month blockade of exports left millions of tons of grain sitting in Ukrainian grain elevators or the cargo holds of the foreign ships stuck in Ukrainian ports, and much of this grain spoiled.[9]

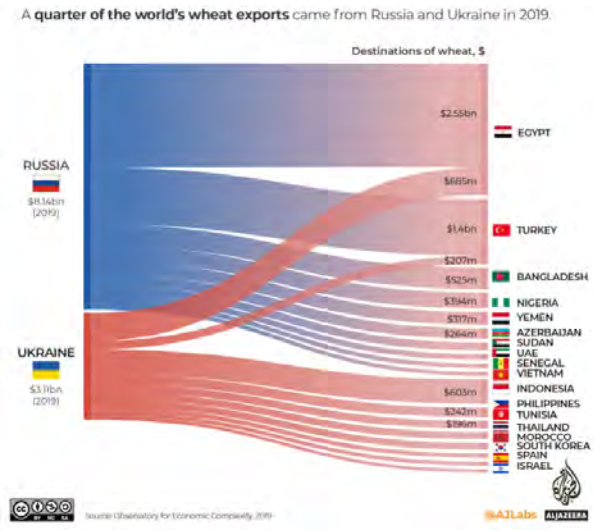

Figure 2: Russian and Ukraine Wheat[10]

The July deal allows the exports of grain, other foodstuffs, and fertilizer—including ammonia—to resume through a safe maritime humanitarian corridor, but from only three Ukrainian ports: Chornomorsk, Odesa, and Yuzhny/Pivdennyi. To implement the deal, a Joint Coordination Centre (JCC) was established in Istanbul, comprising senior representatives from the Russian Federation, Turkey, Ukraine, and the United Nations. According to procedures issued by the JCC, vessels wishing to participate in the initiative will undergo inspection off the coast of Istanbul to ensure they are empty of cargo, after which they will be permitted to sail through the maritime humanitarian corridor to Ukrainian ports to load. Vessels on the return journey will be inspected again at the Istanbul inspection area.[11]

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8 Phil McCausland, "Europe's Lost 'Breadbasket': How Russia's War in Ukraine Is Stoking a Global Food Crisis", *NBC News*, May 28, 2022.

9 Vladislav Davidzon, "Opening Up Ukraine's Sea Routes Is Tough but Critical", *Foreign Policy*, July 21, 2022.

10 Source: "Infographic: Russia, Ukraine and the Global Wheat Supply", *AlJazeera*, February 17, 2022.

11 United Nations, "Joint Coordination Centre for the Black Sea Grain Initiative", *Black Sea Grain Initiative Joint Coordination Centre*, Retrieved December 2022.

This six-month embargo on the export of Ukrainian grain by the Russian Black Sea fleet represented a serious global food security threat; and the ongoing blockade of imports, while aimed at preventing the flow of weapons, further cripples the Ukrainian economy causing suffering to its civilians. Frustrating the situation is the absence of laws, national or international, on such a situation. The options open to the world are like those in all such global crises involving conflict: diplomacy and/or the use of military might to force an immediate solution. Furthering complicating the options is the Montreux Convention that would prevent foreign navies from entering the Black Sea.

Sanctions or embargoes are less effective because they take longer to implement. The situation was summed up by UN Secretary-General António Guterres who pointed out that, while most attention is focused on the effects of the war on Ukrainians, the war is also having a global impact—in a world that was already witnessing increased poverty, hunger, and social unrest. Even though the export blockade has been broken by diplomatic means, the war has dramatically reduced grain production to less than a quarter of what it was. So, the Ukraine crisis still risks tipping up to 1.7 billion people worldwide—more than one-fifth of humanity—into poverty, destitution, and hunger.[12]

Prior to the conflict, Ukraine was one of the world's largest grain exporters and, in 2021, supplied around 45 million tons of grain to the global market. Following Russia's attack on the country in late February 2022, mountains of grain built up in silos, with ships unable to secure safe passage to and from Ukrainian ports; land routes unable to compensate. Much of this harvested grain spoiled and became unusable. Given the war, yield decline is assumed for all scenarios since agri-technology applications will suffer due to a deficit of fuel, finances, and manpower. It is projected that wheat production in Ukraine in 2022 will be 19.8 million tons. Thus, exports could be estimated at no more than 14–16 million tons or a quarter of the production compared to 2021.[13]

A report issued by the Global Crisis Response Group on Food, Energy and Finance called on international financial institutions to release funding for the most vulnerable countries, help governments in developing countries to invest in the poorest and most vulnerable by increasing social protection, and work toward reforming the global financial system so that inequalities are reduced.[14] However, that would be addressing the symptoms in the short term but not the cause. It could be said that it is imperative that the world act. There is hope in this direction as Russia has shown flexibility. Russian Foreign Minister Sergey

12 United Nations, "Ukraine War Unleashing a 'Perfect Storm' of Crises, Warns UN Chief", *UN News*, April 13, 2022.

13 "Grain Production-2022 Forecast in Ukraine: Variety of Scenarios", *UkrAgroConsult*, April 26, 2022.

14 Ibid.

Lavrov visited Turkey in June 2022 for intense negotiations on this issue of breaking the blockade and, while seemingly fruitless at the time, nevertheless led to compromise by July to enable exports but still preventing imports.[15] Only an end to the conflict would bring grain production back to its previous levels and end the global shortage.

While diplomatic efforts continue, the other alternative is military means. Since the end of World War II and the establishment of the United Nations, the use of military means for humanitarian purposes is normally preceded by a debate in the UN and the granting of a resolution. Those willing to implement the resolution have been a coalition either as part of a United Nations force or another regional organization such as the European Union or NATO. This is a significant point as the Convention permits warships to pass through the Straits from the Mediterranean into the Black Sea in the case of assistance rendered to a state that is the victim of aggression by virtue of a treaty of mutual assistance. This would bind Turkey, as concluded within the framework of the Charter of the United Nations (Article 51).[16]

However, Russia as a permanent member of the United Nations Security Council would no doubt veto such a United Nations Security Council Resolution, thereby bringing into question the validity of any NATO action.[17] Furthermore, should any state proceed to break the naval blockade on humanitarian grounds, the act would clearly bring that state into direct conflict with Russia.

The presence of a Western naval flotilla in nearby waters for the express purpose of countering Moscow's war strategy would no doubt be perceived as a military threat by Russia. That such a convoy would have an ultimate humanitarian objective will not negate Russia's perception. Thus, the cooperating states would need to balance the options and decide if they wish to enter the war on the side of Ukraine. Even short of Russia directly and deliberately attacking coalition ships, the risk of accidental escalation would be high, as demonstrated by the 1988 US downing of an Iranian civilian airliner (IR655) by the USS *Vincennes* while conducting a similar operation to protect oil shipments through the Arabian Gulf.[18]

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15 Ulaş Ateşçi, "Russian Foreign Minister Lavrov Visits Turkey as NATO Escalates War in Ukraine", *World Socialist Web Site*, June 10, 2022.

16 United Nations Charter (full text).

17 Hossein Malekshahi, Farid Azadbakht, and Hengameh Ghazanfari, "Legal Models of Rule of Law: A Focus on Veto Power of Permanent Members of Security Council of United Nations", *International Studies Journal,* 19, no. 2 (2022): Serial Number 74.

18 Peter Margulies, "Benchmarks for Reducing Civilian Harm in Armed Conflict: Learning Feasible Lessons about Systemic Change", *Roger Williams University – School of Law*, Legal Studies Paper No. 214 (2022).

In the face of these conditions, the contention that the United States and its allies can break Moscow's ongoing blockade of imports to Ukraine (or the February to July export blockade) "without firing a shot" is dubious at best. Here, neither the United States nor any other NATO member appear eager to challenge Turkey's implementation of the Convention. To illustrate, NATO warships have not transited through the Turkish Straits since the onset of the conflict in February 2022.

The Montreux Convention of 1936

A mission that seeks to achieve humanitarian objectives through military means is still a military operation, carrying all the risks that this kind of action would normally entail. In addition, should any states proceed as a "coalition of the willing" to establish a "humanitarian corridor" or to break the ongoing naval blockade of imports (or the February to July export blockade) using their own naval vessels, then at the fore would be the need to adhere to the Montreux Convention of 1936, if they are to abide by international law and custom. Signed on July 20, 1936, at the Montreux Palace in Switzerland, the Convention went into effect on November 9, 1936, addressing the long-running "Straits Question" over who should control the strategically vital link between the Black Sea and the Mediterranean Sea. The agreement concerns the Dardanelles Strait, the Sea of Marmara, and the Bosporus Strait.

The "Straits Question" was originated in the Treaty of Lausanne, a peace treaty negotiated during the Lausanne Conference of 1922–23 and signed in the Palais de Rumine, Lausanne, Switzerland, on July 24, 1923.[19] The treaty officially settled the conflict that had originally existed between the Ottoman Empire and the Allied French Republic, British Empire, Kingdom of Italy, Empire of Japan, Kingdom of Greece, and the Kingdom of Romania since the onset of World War I. The Treaty of Lausanne had demilitarized the Dardanelles and opened the Straits to unrestricted civilian and military traffic, under the supervision of the International Straits Commission of the League of Nations.

By the mid-1930s, the strategic situation in the Mediterranean had altered with the rise of Fascist Italy, which controlled the Greek-inhabited Dodecanese Islands off the west coast of Turkey and constructed fortifications on Rhodes, Leros, and Kos. The Turks feared that Italy would seek to exploit access to the Straits to expand its power into Anatolia and the Black Sea region. There were also fears of Bulgarian rearmament.[20] Turkey was not permitted to refortify the Straits. In April 1935, the Turkish government dispatched a lengthy

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19 Treaty of Lausanne, Treaty of Peace with Turkey Signed at Lausanne, July 24, 1923.

20 Mehmet Doğar, "The Place of Italy in Turkish Foreign Policy in the 1930s", *Middle Eastern Studies,* 58, no. 1 (2021): 48–69.

diplomatic note to the signatories of the Treaty of Lausanne proposing a conference on the agreement of a new regime for the Straits and requested that the League of Nations authorize the reconstruction of the Dardanelles forts. The Abyssinia Crisis of 1934–35, the denunciation by Germany of the Treaty of Versailles, and international moves toward rearmament meant that the only guarantee intended to guard against the total insecurity of the Straits had just disappeared.[21]

In 1936, in response to Turkey's request to refortify the maritime area, the signatories of the Treaty of Lausanne and others met in Montreux, Switzerland, and reached an agreement to return the zone to Turkish military control. The Convention allowed Turkey to close the Straits to all warships in times of war and to permit merchant ships free passage. It remains in effect in 2022 and is thus relevant to the Russia-Ukraine conflict. The emphasis here is times of war. In order for the provisions of the Montreux Convention to go into effect, especially for Turkey to start using its powers and responsibilities, a war situation must exist. According to international law, a formal declaration of war is not required for the definitive determination of a state of war. Even if there is no official declaration of war by the state using armed force, the laws of war should begin to apply when there is a substantial use of armed force. In the context of the Russia-Ukraine war, Russia officially declared that it had launched a special military operation against Ukraine on the morning of February 24, 2022—an official declaration of the start of a comprehensive military operation against another state.[22]

Historically, it should be noted from the outcome of negotiations agreed upon in 1936 that the British, supported by France, sought to exclude the Soviet fleet from the Mediterranean Sea during World War II, where it might have threatened the vital shipping lanes to India, Egypt, and the Far East. Britain's willingness to permit Turkey to have control has been attributed to a desire to avoid Turkey being driven to ally itself with or to fall under the influence of Adolf Hitler or Benito Mussolini.[23] Turkey has used the Convention's powers before. During World War II, Turkey closed the Straits to warships belonging to combatant nations. That prevented the Axis powers from sending their

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21 Lacin Idil Oztig and Mehmet Akif Okur, "Border Settlement Dynamics and Border Status Quo: A Comparative Analysis of Turkey's Borders", *Geopolitics* (2022).

22 Elena Chachko and Katerina Linos, "International Law after Ukraine: Introduction to the Symposium", *AJIL Unbound,* 116 (2022): 124–129.

23 Raul (Pete) Pedrozo, "Closing the Turkish Straits in Times of War", *International Law Studies – Stockton Center for International Law,* 99 (2022).

warships to attack the Soviet Union and blocked the Soviet navy from participating in combat in the Mediterranean.[24]

Now, the Montreux Convention is serving an important role in the Ukraine conflict. Ukraine asked Turkey to close the Straits to Russian warships, highlighting the Turkish role in keeping regional peace. The Turkish government agreed to this on February 28, 2022. However, several Russian warships have continued to enter and leave the Black Sea, with Turkey saying that it could not and would not prevent this if Russia claimed they were returning to their home port as that is permitted in the Montreux Convention.[25]

Russia is taking advantage of this, and in essence, the freedom of movement enables its Black Sea fleet to conduct business as usual. For example, these ships exit the Black Sea to perform tasks in the Sea of Japan—interacting with the Russian Baltic Sea fleet—and undertake regular patrols in the Mediterranean Sea. They then return to their home port in the Black Sea as and when they wish. At the time of the 2014 Crimean crisis, Russia's intent was to create a base on the Crimean Peninsula that would meet all the requirements for performing combat missions.[26]

The Geopolitical Dimensions of the Montreux Convention of 1936

There is a Turkish saying, "Did your ships sink in the Black Sea?" The expression is used when a person is lost in thought, trying to resolve a seemingly unsolvable problem. As it turns out, that is the very body of water that put Turkey on a geopolitical tightrope since Russia initiated its attack on Ukraine and began military operations from those waters.[27]

Located in the western part of the landmass of Eurasia, the Straits are conventionally considered the boundary between the continents of Europe and Asia, as well as the dividing line between European Turkey and Asian Turkey.[28] The Straits—the Dardanelles

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24 Nicholas J. Myers, "The Significance of the Turkish Straits to the Russian Navy", *Foreign Policy Research Institute (FPRI)*, March 4, 2022.

25 Selen Baldıran, Dinçer Bayer, and Hüseyin Gençer, "The Importance of the 1936 Montreux Convention for the Black Sea Security: A Close Look into Russia-NATO Controversy on the Russian Ukrainian Conflict in 2022", *Information and Security,* 51 (2022): 11–23.

26 "Black Sea Fleet of Russia: Composition and List of Ships", *UNANSEA*, Retrieved December 2022.

27 Cengiz Vefa Ekici, Ozcan Arslan, and Ulku Ozturk, "Fuzzy C-Means Clustering of Ships Passing through Turkish Straits", in Cengiz Kahraman, A. Cagri Tolga, Sezi Cevik Onar et al. (eds.), *Intelligent and Fuzzy Systems: Digital Acceleration and the New Normal*, Proceedings of the INFUS 2022 Conference.

28 The ensuing geographic details are quoted from Hasan Bora Usluer, Güler Alkan, and Osman Turan, "Prediction of the Effects of the Current Regime on Ship's Maneuvering at the Strait of Istanbul", *Kent Akademisi,* 15, no. 2 (2022): 611–629.

and the Bosphorus—are two internationally significant waterways in northwestern Turkey on opposite sides of the Sea of Marmara that create a series of passages that connect the Mediterranean Sea to the Black Sea. The Straits and the Sea of Marmara are part of the sovereign sea territory of Turkey and subject to the regime of internal waters, yet also subject to international agreements such as the Montreux Convention of 1936.

The Dardanelles is a narrow strait in northwestern Turkey, 61 kilometers long and 1.2 to 6.5 kilometers wide, linking the Aegean Sea (in the Mediterranean Sea) with the Sea of Marmara (in the Black Sea).[29] The city of Dardanus in the Troad (territory around ancient Troy) is where Mithradates VI (King of Pontus) and Sulla (the Roman general) signed a treaty in 85 BCE, giving the Strait its name. The location of the Dardanelles has given it international political importance.[30]

The name "Bosphorus" was derived from the ancient Greek word "Bosporos", meaning "cattle strait" or "ox ford". The Strait is located in northwestern Turkey and separates Thrace from Anatolia. It is the narrowest strait in the world, with a maximum length of 31 kilometers and a maximum width of 3.7 kilometers. The narrowest point is 700 meters wide, which is located between Anadoluhisari and Rumelihisari. Its depth ranges from 36.5 meters to 124 meters below the sea surface. It runs through Istanbul, the only city located on two continents. The Strait's shore is heavily settled and part of the Istanbul metropolitan area, Turkey's largest metropolis with 17 million people. Two suspension bridges are constructed across the Strait: Bosphorus Bridge I (15th July Martyrs Bridge) was constructed in 1973, while Bosphorus Bridge II (Fatih Sultan Mehmet Bridge) was completed in 1988.[31]

Owing to their strategic importance in international commerce, politics, and warfare, the sea straits connecting the Black Sea to the Mediterranean Sea have played a significant role in European and world history. A historical example of significance was when, in 1807 during the Napoleonic Wars, the British fleet under Sir John T. Duckworth closed the straits connecting the two seas and then forced them.[32] During World War I, the Allies failed to capture this sea route, though a British submarine penetrated the minefields

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29 "How Deep Is the Hellespont?" *Staveleyfa.com*, 2022.

30 W.R. Kermack, "Notes on the Historical Geography of the Dardanelles", *Scottish Geographical Magazine,* 35, no. 7 (1919): 241–248.

31 Erkan Gökaşan, Emin Demirbag, Fazli Y. Oktay et al., "On the Origin of the Bosphorus", *Marine Geology* 140, no. 1–2 (1997): 183–199.

32 Roger Knight, *Convoys: The British Struggle against Napoleonic Europe and America* (New Haven, CT: Yale University Press, 2022).

blocking the sea route and sank a Turkish battleship off the Golden Horn, an inlet on the Bosporus.[33]

The Straits are recognized as one of the seven maritime chokepoints that have gained immense ill-fame in both past and present times, especially due to the heavy geopolitical pressure surrounding them.[34] The Montreux Convention regulates maritime traffic through the Black Sea and guarantees "complete freedom" of passage for all civilian vessels in all circumstances in times of peace.

The Terms of the Montreux Convention of 1936

The Convention consists of 29 Articles, four Annexes and one Protocol. Articles 2 through 7 consider the passage of merchant ships and Articles 8 through 22 consider the passage of war vessels. The key principle of freedom of passage and navigation is stated in Articles 1 and 2. Article 1 provides that "the High Contracting Parties recognize and affirm the principle of freedom of passage and navigation by sea in the Straits", while Article 2 states that "in time of peace, merchant vessels shall enjoy complete freedom of passage and navigation in the Straits, by day and by night, under any flag with any kind of cargo".[35]

In peacetime, military vessels are limited in number, tonnage, and weaponry, with specific provisions governing their mode of entry and duration of stay. Warships must provide advance notification to Turkish authorities, which, in turn, must inform the parties to the Convention. There is a formal process for ships, both military and non-military, in transiting the Straits. These are detailed in the Turkish Straits Maritime Traffic Order Regulations Enforcement Directives.[36] There are also guidelines and recommended procedures by international organizations such as the Oil Companies International Marine Forum (OCIMF).[37] The Turkish authorities observe the vessels as they transit the Straits, confirming that each ship matches the request for passage and the international registry of ships while also confirming its weight, at least relative to the date of its construction.

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33 John Fairley, *The Royal Navy in Action: Art from Dreadnought to Vengeance* (Barnsley: Pen and Sword, 2022).

34 Carmen Ang, "Mapping the World's Key Maritime Choke Points", *Visual Capitalist*, March 30, 2021.

35 The discussion henceforth quotes the content of the Convention: United Kingdom Foreign, Commonwealth & Development Office, Convention Regarding the Regime of the Straits, Treaty Series No. 30, July 20, 1936.

36 Republic of Turkey, Ministry of Transportation, Maritime Affairs and Communications, "Turkish Straits Maritime Traffic Order Regulations Enforcement Directives", November 15, 2011.

37 OCIMF, Guidelines for Transiting the Turkish Straits, 2nd ed. (London: Oil Companies International Marine Forum, 2021).

Turkey is authorized to close the Straits to all foreign warships during a war or when it is threatened by aggression. Turkey is also authorized to refuse the transit of merchant ships belonging to countries at war with it. In wartime, with Turkey not involved in the conflict, warships of the nations at war may not pass through the Straits, except when returning to their base (Article 19). Articles 14 and 18 impose several highly specific restrictions on what type of warships are allowed passage. Non-Black Sea powers wishing to send a vessel must notify Turkish authorities fifteen days prior to the requested passing, while Black Sea states must submit their request eight days prior to passage. Furthermore, no more than nine foreign warships, with a total aggregate tonnage of 15,000 tons, may pass at any one time. Passage is also denied to a single ship heavier than 10,000 tons. An aggregate tonnage of all non-Black Sea warships in the Black Sea must be no more than 45,000 tons, with no one state exceeding 30,000 tons at any given time. Non-Black Sea warships are not permitted to stay in the Black Sea for more than twenty-one days.[38] Only Black Sea states may transit capital ships of any tonnage, escorted by no more than two destroyers. Any revisions to Articles 14 and 18 require a 75 percent majority of signatory countries and must include Turkey.[39]

Under Article 12, Black Sea states are allowed to send submarines through the Straits with prior notice as long as the vessels have been constructed, purchased, or sent for repair outside the Black Sea. The less restrictive rules applicable to Black Sea states were agreed as effectively a concession to the Soviet Union, the only Black Sea state other than Turkey with any significant number of capital ships or submarines.

The treaty contains no explicit prohibition on aircraft carriers. However, modern aircraft carriers are heavier than the 15,000-ton limit imposed on warships, which makes it impossible for non-Black Sea powers to transit modern aircraft carriers through the Straits.

Adhering to the Terms of the Montreux Convention of 1936

While the Montreux Convention was designed for a particular geopolitical context in 1936, and remains unchanged since its adoption, it has endured as a "solid example of a rules-based international order" since most of the intent of its terms are still followed.[40]

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38 United Kingdom Foreign, Commonwealth & Development Office, Convention Regarding the Regime of the Straits, Treaty Series No. 30, July 20, 1936.

39 Ibid.

40 Philip Towle, "The Montreux Convention as a Regional Arms Control Treaty – Negotiation and Practice", *Military Affairs,* 45, no. 3 (1981): 121–126.

To follow the intent of the terms, the former Soviet Union during the Cold War designated its Kiev-class and Kuznetsov-class ships as aircraft-carrying cruisers as the ships were armed with P-500 and P-700 cruise missiles, which also form the main armament of the Slava-class cruiser and the Kirov-class battlecruiser. The result was that the Soviet navy could send these aircraft-carrying cruisers through the Straits in compliance with the Convention, but at the same time, the Convention denied access to NATO aircraft carriers, which exceeded the 15,000-ton limit.[41]

Turkey chose to accept the designation of the Soviet aircraft-carrying cruisers as aircraft cruisers, as any revision of the Convention could leave Turkey with less control over the Straits, especially as another agreement, the United Nations Convention on the Law of the Sea (UNCLOS), had already established more liberal passage through other straits. Technically UNCLOS governs transit passage through international straits around the world. However, Article 35 clarifies that UNCLOS does not apply to long-standing international conventions in force.[42]

By allowing the Soviet aircraft-carrying cruisers to transit the Straits, Turkey could leave the other elements of the more restrictive Montreux Convention in place. Today there are no aircraft carriers, as defined by Russia, in the Black Sea Fleet. The upshot: it is the Montreux Convention, and not UNCLOS, that governs the Turkish Straits—which enjoy a truly unique legal status in international transit governance.

Revisiting the Terms of the Montreux Convention of 1936

The Convention remains in force but not without dispute. It was repeatedly challenged by the Soviet Union during World War II and the Cold War. For example, for several years after World War II, the Soviets exploited the restriction on the number of warships by ensuring that one of theirs was always in the Straits, thus effectively blocking any state other than Turkey from sending warships through the Straits.[43] Soviet pressure expanded into actual demands to revise the Montreux Convention, giving rise to the 1946 Turkish Straits crisis, which led to Turkey abandoning its policy of neutrality. In 1947, it became the recipient of US military and economic assistance under the Truman Doctrine of

41 Alex Pape, *Janes Fighting Ships 2020–2021* (Coulsdon: Janes Information Group, 2020).

42 United Nations, United Nations Convention on the Law of the Sea.

43 Constantine Capsaskis, Moscow's Strategic Obsession with the Eastern Mediterranean: Lessons from Pre-Cold-War History, Policy Paper No.103/2022, Hellenic Foundation for European & Foreign Policy (2022).

containment and joined NATO, along with Greece, in 1952. It can therefore be said that the "Straits Question" is the reason why Turkey became a member of NATO.[44]

The United States has not signed the Convention but generally abides by it under customary international law. In doing so, the Montreux Convention is an obstacle to US naval build-up in the Black Sea due to the Convention's stipulations regulating warship traffic by nations not sharing a Black Sea coastline. Those stipulations place Turkey's relationship with the United States and its obligations as a NATO member in potential dispute with Russia and thus the regulations of the Montreux Convention. Russia may see an increased NATO presence in the Black Sea as escalation.[45]

The United Nations Convention on the Law of the Sea, which entered into force in November 1994, may well prompt calls for the Montreux Convention to be revised and adapted to make it compatible with UNCLOS's regime governing straits used for international navigation. However, Turkey's long-standing refusal to sign UNCLOS has meant that the Montreux Convention remains in force without further amendments. Furthermore, disregarding the Convention and permitting NATO warships into the Black Sea would immediately escalate tensions between Russia and Turkey.

Following Russia's attack on Ukraine on February 24, 2022, the Ukrainian government appealed to Turkey to exercise its authority under the Montreux Convention to limit the transit of Russian warships from the Mediterranean to the Black Sea. After initial reluctance, attributed to the country's close ties with both Russia and Ukraine, Turkish Foreign Minister Mevlüt Çavuşoğlu announced on February 27 that his government would legally recognize the Russian attack as a war, which provided grounds for implementing the Convention with respect to military vessels.[46] This meant denying passage to all military naval vessels, including those of NATO powers, who now cannot move their vessels from the Mediterranean to the Black Sea.

However, Çavuşoğlu reiterated that pursuant to the terms of the agreement, Turkey cannot block Russian warships based in the Black Sea from returning to their registered base. Around February 27–29, Turkey denied three of four Russian warships permission to enter the Black Sea as they did not have a home base in the Black Sea. Russia had previously been deploying its Kilo-class submarines from the Black Sea to the Mediterranean for

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44 Jamil Hasanli, *Stalin's Early Cold War Foreign Policy: Southern Neighbours in the Shadow of Moscow, 1945–1947* (New York: Routledge, 2022).

45 Adam Aliano, The Montreux Convention and a Black Sea Presence: Leveraging Law to Enable Operational Capabilities (Newport: Naval War College, 2022).

46 Tayfun Ozberk, "Turkey Closes the Dardanelles and Bosphorus to Warships", *Naval News*, February 28, 2022.

extensive periods of time, after which they would return to their home port in the Black Sea, thereby enjoying freedom of movement in both seas. At least six Russian warships and a submarine have crossed the Turkish Straits since the start of the Russia-Ukraine war in February 2022.[47]

Conclusions

At the time of writing, November 2022, the Russia-Ukraine war continues and the terms of the Montreux Convention remain a focus. Between February and July 2022, Russia maintained a total naval blockade of Ukrainian ports. Grain was not exported, threatening to leave hundreds of millions worldwide starving. The period was tense, questioning if other states, especially NATO members, would contravene the Montreux Convention and send naval warships to break the blockade to alleviate the global grain shortage.

The United Nations brokered a deal to enable exports, but the same agreement also prevents any ships entering the Black Sea to import goods to Ukraine as Russia is concerned that foreign weapons could be shipped there. Since July 2022, the terms of the Montreux Convention remain a focus of the humanitarian crises as imports are now blockaded by international agreement to Ukrainian ports. Unless another agreement can be reached, foreign naval forces might need to enter the Black Sea and contravene the Convention. If this happens, it may open the door to challenging any other similar international conventions.

The agreement was for 120 days, and on November 17, Russia agreed to extend it for another 120 days under existing conditions without changes. In the weeks leading up to this, Russia had repeatedly warned that it might not agree to extend the agreement because a separate deal that was also signed in July, exempting Russian fertilizers from sanctions, had not been implemented. Russia also temporarily pulled out of the agreement at the end of October accusing Ukraine of a massive drone attack on its Black Sea fleet in Crimea.[48]

As the implementor of the Convention, the Turkish government finds itself in a difficult position. Article 19 of the Montreux Convention provides that if Turkey is not belligerent in a time of war, warships of any warring state will be prohibited from passing through the Straits except to return to their home bases. Herein lies a weakness as it is possible to change a home port. Thus, while a home port of any ship (military or non-military) is

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47 Adam Aliano, "Is Russia Exploiting a Gap in the Montreux Convention?" *Lawfare*, June 14, 2022.

48 Fulya Ozerka, "Ukraine Grain Export Deal Extended for Four Months", *Agence France-Press*, November 17, 2022.

defined when it is commissioned and enters service, this can change. The most common time to shift home port is in conjunction with major yard maintenance and docking availability. When a conflict breaks out, such as the current one, Turkey would rely on information that had been provided by Russia and Ukraine prior to the onset of the conflict. There is no legal means for Turkey to challenge them should they inform Turkey during the conflict that more ships had been added to that list. At the same time, the warships of other countries that are sent to support Ukraine or Russia or to break the Russian naval blockade of Ukrainian imports, or the earlier blockade of exports as well, would similarly need to be banned, as these countries are regarded as warring countries, and their home ports are not in the Black Sea. It would rest on Turkey to ban them.

Nevertheless, both Ukraine and Russia are important partners in critical energy and trade agreements for Turkey. Disregarding the Montreux Convention would immediately escalate tensions between Russia and Turkey. At the same time, Turkey, who has been a NATO member since 1952, wants to maintain or even strengthen its ties with the West. Its control over these key Straits may test its balancing act of relations with Russia and members of NATO and the EU.

Furthermore, it is fair to say that the main things aggravating Turkey's difficult position are the very fundamental tenets of the international community—peace and stability. The justification of letting foreign naval ships into the Black Sea in contravention of the Montreux Convention would be based on humanitarian grounds. The need to end the conflict and restore grain production to its prewar levels remains a priority even if exports are now permitted. With the war ongoing, the risk and potential remains that there will be no grain to export. Furthermore, as of October 2022, imports are still blockaded, and this has resulted in an ever-growing humanitarian crisis in Ukraine.

Foreign naval ships entering the Black Sea regardless of the reason would put the Montreux Convention of 1936 to the test, and it may not survive. A rationale for its renegotiation could be the fact that the Convention was signed more than eighty-five years ago and naval warships and technology have changed dramatically since that time, thus making it difficult to apply the Convention's highly technical transit limitations to modern warships. Another reason is that the nature of just and unjust wars and what is permissible in war (*jus ad bellum* that refers to the conditions under which states may resort to war or to the use of armed force in general and *jus in bello* that regulates the conduct of parties engaged in an armed conflict in legal terms) is no longer the same as it was between the two World Wars. So other instruments such as conventions might also need to be amended to reflect this.

If this happens, it may well challenge similar international agreements. To be sure, international agreements are sane and civilized instruments by which states and other subjects of international law, such as certain international organizations, regulate matters of concern to them in a normative manner. The bottom line then is that the international community must be sensitive to the effects of any potential naval responses to Russia, as they could implicate or even undermine the Montreux Convention as well as other conventions. However, if diplomacy does not bring an end to the conflict, then this might be the only means.

The Impact of the Russia-Ukraine War on the Maritime Trade: Regional and Global Aspects

Mark Shipton

Preface

The Russian invasion to Ukraine on February 24, 2022, has created far reaching global changes, in both geostrategic and macroeconomic aspects. Most of these changes stem from the negative impact of the war on the global supply chain which is heavily reliant on the global maritime shipping industry. The war in the region had a direct effect on the maritime trade, mainly due to three reasons: the naval blockade of Ukrainian ports by the Russian Navy, the sanctions imposed against Russia by the international community, and the sharp increase in maritime shipping insurance rates.

Maritime trade in the Black Sea accounts for only 6% of the global total; nonetheless, these shipping routes still account for a substatial portion of the commodity market – 2.61% of crude oil, 11.8% of steel, 26% of grain, and 20% of corn. The ongoing conflict in the region has led to a considerable increase in the prices of these products; for example, the global price of grain increased in a span of one month by about 102%, which also led to an overall increase in market price indices for manufacturing, energy, and logistics. The fighting in the Black Sea continues to affect the global supply chain, contributes to price increases and the acceleration of global inflation, and is a testimony to the frailty of the global economic system in the era of globalization.

Background

Since the annexation of the Crimean Peninsula in 2014, the geostrategic situation in Southeast Europe has been accompanied by great tension. On February 24, 2022, after preliminary preparations, the Russian army invaded Ukrainian territory on several fronts; the Russian invasion is considered one of the largest conventional military offensives since World War II (Herb, Starr, and Kaufman, 2022; Lupsha, 2022). In the early days of the war, it became clear that the maritime domain is destined to play a significant role. The Russian naval force (The Black Sea fleet), having a quantitative and qualitative advantage compared to the Ukrainian forces, enabled Russia to establish an almost undisputed control over the Black Sea. Although the Russian Navy suffered considerable losses and casualties during the first months of fighting,[1] Russia continues to dominate this crucial domain (Shipton, 2022).

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1 Russia lost the cruiser Moskva, its Black Sea Fleet flagship, to Ukrainian coastal missile strike during combat (Sands, 2022).

Russia's naval supremacy in the Black Sea constitutes as a major strategic advantage over Ukraine as it enables Russia the ability to conduct a myriad of military operations from the sea, e.g., launching stand-off precision land strikes and conducting amphibious operations. However, the most significant aspect is Russia's ability to enforce a long-term naval blockade againts Ukraine's shipping routes and ports, defacto a

complete shutdown of all exports and imports via Ukrainian ports (Jacobs, 2022). In this context it is important to note that before the war, maritime trade constituded 70% of Ukrainian trade activity(Murray, 2022).

Even though the war is fought in relatively confined geographic areas, the overall adverse effects on the gloabal economy remain significant.

Geographical review of the Black Sea

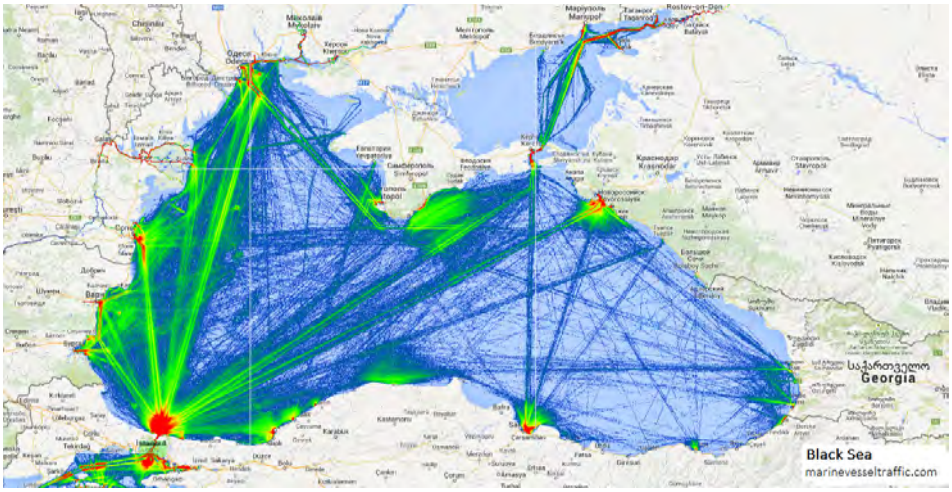

Figure 1: Ship traffic density in the Black Sea and main ports in the area (Yotsov, Dimitrakiev, Zaburtov, and Koritarov, 2017)

The Black Sea is a body of water spreading over 436,400 square kilometers, located on the borders of south-east Europe and west Asia. Six nations reside on the shores of the Black Sea: Georgia and Russia to the east, Ukraine to the north, Turkey to the south, and Bulgaria and Romania to the west.

There are sixty-five seaports along the Black Sea, the largest are Constanta in Romania (the largest port in the Black Sea), Odesa in Ukraine, Novorossiysk in Russia, Varna in Bulgaria, and Batumi in Georgia. The Black Sea is connected to the Mediterranean by two continuous straits, the Bosporus, and Dardanelles; these straitsare the Black Sea's only

connection to the global oceanic system. It is important to note that the Black Sea also connects directly to the large rivers in eastern Europe: the Danube, the Dnieper, the Don, the Dniester, and the Kuban. These rivers allow relatively small vessels to transfer goods into central and eastern Europe (Dasgupta, 2022; Ports.com, 2022).

In the northeast, the Kerch strait connects the Black Sea to the Sea of Azov, a smaller body of water spreading over 39,000 square kilometers. Unlike the Black Sea which is relativaly deep (1,253 meters on average) (Black Sea Commission, 2009), the Sea of Azov is rather shallow (7 meters on average) (World Atlas, 2022), which limits the size of vessels that can sail it. The Sea of Azov is a focal point of intense combat between Russia and Ukraine due to its strategic location – its northwest coast is the only stretch of land separating Russia from the Crimea Peninsula; Russian control over that area would provide it with territorial continuity between sovereign Russia and the Crimean Peninsula, which was annexed in 2014 (France24, 2022).

A review of the Black Sea maritime trade

The Black Sea is an important transportation artery, connecting the surrounding nations (Russia, Ukraine, Georgia, Romania, Bulgaria, and Turkey[2]) to the global shipping trade routes.

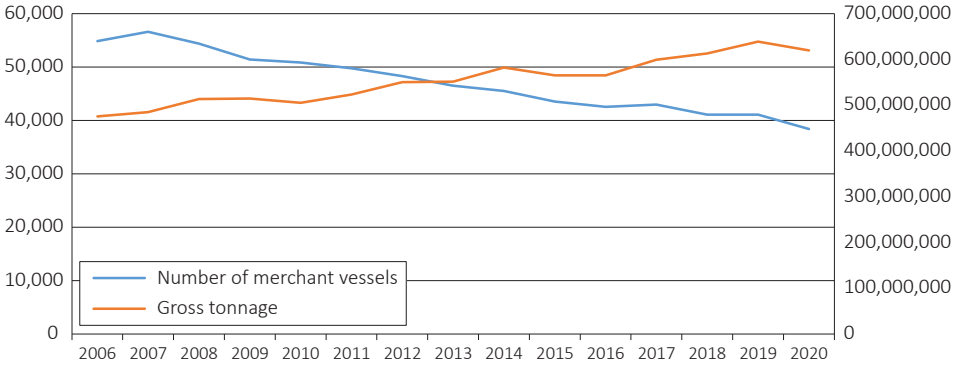

Figure 2: Merchant vessels and gross tonnage passing through the Bosporus Strait annually in numbers

According to Turkish authorities' data, since 2006, approximately 48,000 merchant ships passed through the Bosporus strait, carrying 600 million tons goods, annually.[3] A further

2 Turkey has seaports in the Mediterranean as well, and therefore is not solely dependent on the Black Sea to connect to the global shipping trade routes. However, its Black Sea ports allow regionally focused importing and exporting with the other countries along the Black Sea shores.

3 The Bosporus and Dardanelles are under Turkish sovereignty, hence, the Turkish Ministry of Transport carries out an annual monitoring of ship movement in these straits.

investigation of the data reveals a consistent decrease in the number of ships transiting the Black Sea each year (30% less, since 2006), alongside an increase in the gross tonnage. This overall trend is accomanied by an increase in the size of the ships sailing these waters (a 30% growth in gross tonnage, since 2006) (Açık and Atac, 2022; Küçükosmanoğlu and Küçükosmanoğlu, 2021). This is mainly due to the significant decrease in the number of general cargo ships passing through the Bosporus straits (a 49% drop, since 2006). Overall there has been the number of other types of vessels has remained (containers, tankers) and even incresed (bulk carrier traffic has increased by 58%, since 2006) (Açık and Atac, 2022).

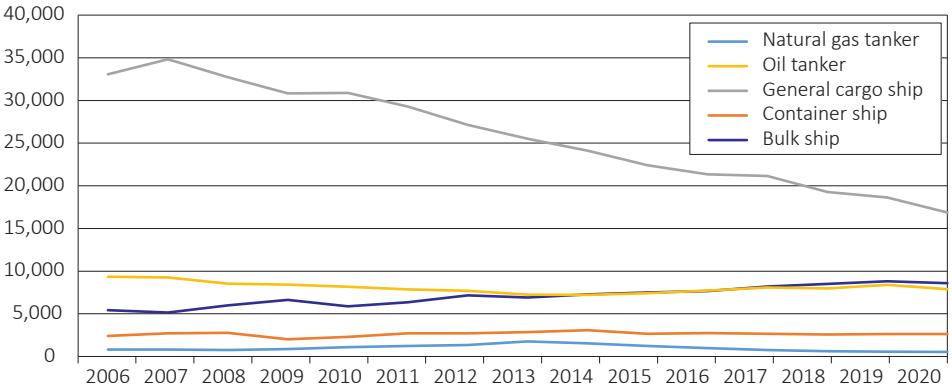

Figure 3: Annual ship traffic through the Bosporus Strait

Nowadays, the maritime trade in the Black Sea constitutes only about 6% of global total (Schnurr and Walker, 2019; Walker, et al., 2019). However, the shipping routes in this area are of great importance both regionally and globally. In the regional aspect, landlocked countries like Azerbaijan, Armenia, and Kazakhstan maintain trade connectivity, via neighboring countries, with Black Sea ports (Export.gov, 2019); For example, 20% of Kazakhstani oil is exported from the port of Novorossiysk in Russia (Evans, 2022). In the global aspect, the shipping routes in the area convey considerable percentage of the world's commodity market, originating from Russia and Ukraine (Lee and Durisin, 2022).

Additionally, the great rivers of eastern Europe flow to the Black Sea and to the Sea of Azov, enabling the ferrying of goods aboard smaller vessels or barges deep into eastern Europe. This is particularly noticeable in the Danube River, which transfers over 20 million tons of goods each year from the western regions of the Black Sea to landlocked countries, such as Serbia and Hungary (Danube Commission, 2021). Regarding land transportation routes, it must be noted that some of the countries on the western side of the Black Sea (Romania and Bulgaria) are members of the European Union, and integrated in the European railway network, which also enables the transportation of goods quickly and

efficiently from the seaports on the western side of the Black Sea to markets throughout eastern and central Europe (ComparaBUS, 2022).

The impact of the Russia-Ukraine conflict on the shipping market and the maritime trade

The war has created three factors that disruptmaritime trade: the naval blockade of Ukrainian ports by the Russian fleet, the sanctions of the west against Russia, and the increase in insurance rates for shipping activities in the Black Sea.

The naval blockade of Ukrainian ports

The naval blockade enforced by the Russian Navy against Ukrainian ports and shipping lanes has led to a shift of Ukraine's maritime trade towards neighboring countries' ports, as well as the trade of other land-locked countries that depended on Ukrainian ports for export and import. It is worth noting, that until the war broke out, 70% of Ukraine's trade was conducted by sea (Murray, 2022). The shift of the maritime trade to ports of neighboring countries, mainly Constanta and Sulina in Romania, and Varna in Bulgaria, had resulted in an ever growing congestion of containers and general cargo in these ports, which sequentially led to a considerable price increase for shipping companies wishing to dock and operate in these ports. For example, the Constanta port authorities placed an additional 30 Euro fee for the repositioning of every container within port limits (Container News, 2022; Ernst, 2022; Savvides, 2022).

It must be pointed out that in the background, the fighing inland has also led to an additional indirect effect hampering maritime trade. The land trade routes between Asia and Europe to suspended operations. This also includes the CRE (China-Europe Railway Express) that passes through Russian and Ukrainian territories. This rail line is a significant trade route between China and Europe, carrying approx. 1.46 million containers each year. The cessation of the CRE has led to an increase in the volume of trade making its way between Asia and Europe by sea routes (Brinza, 2022; Siqi, 2022). Here, as well, an increase in demand compared to the existing supply leads to an increase in transportation fees.

The sanctions on Russia by the West

In response to the Ukraine invasion, the West imposed sanctions against Russian buisness entities; these sanctions induced major shipping companies, such as Maersk, MSC, CMA, and CGM, to declare that they would cease operating with Russian entities and no longer call Russian ports (Russu, 2022). This created an overload of cargo destined for Russia in many ports (mainly in Western Europe). Importers and exporters were compeled to store the said cargo in long-term logistic centers and port terminals, causing a shortage

in logistic storage and an increase in service prices. Another aspect of the sanctions is the export of Russian oil, a decrease in supply in the oil market has led to a considerable spike in prices (which will be expanded on in the next section). This has also led to an increase in the price of petroleum products used as fuel for the shipping industry, such as VLSFO (Very Low Sulfur Fuel Oil), one of the most common fuels in the commercial shipping industry (Einemo, 2021); for example, according to UNCTAD (The United Nations Conference on Trade and Development), the VLSFO prices, in 2022, skyrocketed by 64% between January and the end of May, to over $1,000 per ton (UNCTAD, 2022). Naturally, an increase in the prices of ship fuel means an increase in naval transportation fees.

The increase in insurance premium rates for shipping activities in the Black Sea

The Russia-Ukraine war creates an inherant danger for civilian ships operating in the area. In the early days of the war, on the 24th and 25th of February, three merchant ships were damaged in the crossfire between Russian and Ukrainian navy forces; one tanker (*Millennial Spirit*) and two bulk ships (*Namura Queen* and *Yasa Jupiter*) (Bush, 2022; Reuters, 2022; Tanas, 2022). A week later, another bulk ship (the Helt) was hit and sunk, most likley due to a sea-mine (Kay, 2022a). The potential dangers to maritime trade led the IMO (International Maritime Organization) to set the risk level of activity in those ports to the highest – level III (IMO, 2022). In early March, the Joint War Committee[4] declared the entire northern region of the Black Sea, including the Sea of Azov, a high-risk area (MICA Center, 2022; Maritime Executive, 2022).

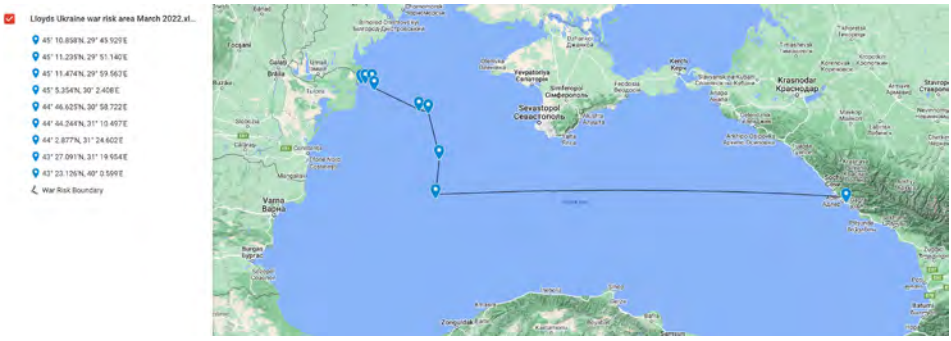

Figure 4: High-risk areas according to the Joint War Committee (Source: Maritime Executive, 2022)

4 The Joint War Committee (JWC) includes the underwriters of insurance companies, that provide insurance policies to shipping companies. The committee is focused on analyzing the dangers inherent in regional instability (combat, piracy, crime) and estimates the risk level in the region. These definitions, in term, determine the premiums that insurance companies demand from shipping companies operating in those areas (LMA, 2022).

The high-security risk has led to massive increases in insurance rates for ships that wish to operate in the area (up to 10% of the ship's value).[5] This even created unique situations where the insurance costs for a ship could actualy be higher than the costs of leasing the ship itself (Kay, 2022b; Koh and Nightingale, 2022). High insurance costs have led to a considerable increase in the prices of maritme transportation,. For example, in early 2022 the cost of transporting one million barrels of oil from Russia's Novorossiysk port to Italy was under $700,000. The price rose to about $3.5 million at the beginning of April (Koh and Nightingale, 2022).

Disruptions in the shipping market and maritime trade – a catalyst to an increase in the costs of raw materials

The ongoing conflict between Russia and Ukraine led to extensive disruptions in the shipping market and the maritime trade. The naval blockade of Ukrainian ports, the sanctions imposed against Russia, and the increase in insurance rates for merchant ships operating in the Black Sea, are considered as the main factors for the considerable increase in raw material prices. As previously mentioned, the Black Sea trade routes connect Russia and Ukraine to the global economic system; these countries are significant exporters of oil, agricultural produce, and steel, products that are an integral part of the commodities market.[6]

Petroleum

According to the United States Energy Information Administration, the global production of crude oil in 2021 was 95.57 million barrels a day (EIA, 2022), out of which 2.5 million barrels were exported from Black Sea ports, i.e., 2.61% of the total global oil supply. Most of the oil passes through three main ports in the eastern Black Sea: Supsa port in Georgia exports around 100,000 barrels of oil a day from Azerbaijan, Novorossiysk exports around 600,000 barrels of Russian oil a day, and the CPC terminal exports around 1.6 million barrels of oil out of Kazakhstan. A substantial amount of that oil is imported by Eastern European countries (Ukraine, Romania, and Bulgaria) that either use it or transport it to Central Europe by land routes (Lee and Durisin, 2022). As noted, the war has led many countries to impose sanctions on the import of Russian oil (i.e., a decrease in supply),

5 Known as War Risk Premiums, they are determined by professional ship underwriters, in the service of big insurance companies, such as Allianz and Lloyd's (Kay, 2022b).

6 The commodities market deals in pricing and trading of raw materials that are later processed to consumer products, usually energy (oil, natural gas), metals (gold, silver, platinum) and agricultural produce (corn, wheat, cotton). An example of market tracking can be seen on the Bloomberg website.

this subsequently caused a significant and rapid increase of about 34% in oil prices: from $89 a barrel mid-February to $119 mid-March (Trading Economics, 2022b). It is worth mentioning that increasing oil prices also affect the prices of oil products such as gasoline, diesel, and LPG.

Agricultural produce

Russia and Ukraine account for 26% of global grain exports and 20% of corn, most of which is exported from ports to the global market aprrox. 80% of Ukraine's grain exports (and 99% of corn exports) are exported by sea. The main buyers of Russian and Ukrainian wheat are Egypt, Turkey, and Indonesia (Lee and Durisin, 2022; Manthey and Frentzos, 2022). The naval blockade of Ukrainian ports and the sanctions on Russian companies caused a significant disprution in the grain and corn markets. Firstly, a considerable increase in the global price of wheat ($332 in January to $672 in April, 102% increase) (GlobalEconomy.com, 2022) and corn ($583 in January to $809 in April, 38% increase). Secondly, nations that depended on wheat imports from Ukraine and Russia such as Egypt, Turkey, and Indonesia, were suddenly forced to look for new sources of grain. Thirdly, the high demand for grain and corn combined with the pressure of sanctions on the Russian economy have led in recent months to an increased volume of wheat exported in violation of the sanctions (Cook, Ivanova, and Pitel, 2022).

On July 27, 2022, the Black Sea Grain Initiative was signed, allowing the limited export of grian and other agricultural produce out of Ukrainian ports under international supervision, mainly to developing nations in the African continent suffering from a severe food security crisis (UN News, 2022). According to FAO (Food and Agriculture Organization of the United Nations), the initiative resulted in a slight decrease in the grain price index during the month of August 2022 (1.4%).[7]

Steel

According to the World Steel Association report, in 2021 the global steel export market was approximately 396.3 million tons. Russia is the second largest steel exporter in the world with over 31.5 million tons (8% of global exports), Ukraine is the ninth largest with over 15.2 million tons (3.8%). The combined gross of those two nations makes them the world's second largest steel exporter (46.7 million tons a year, 11.8%) after China (World Steel Association, 2021). The combination of sanctions against Russia and the blockade of Ukrainian ports severely limits the supply of steel, which had led to a considerable increase in steel prices, especially in Europe, which relies to a significant extent on

7 According to the FAO Food Price Index (FFPI), published monthly.

Russian and Ukrainian steel. The price spiked from $920 a ton to over $1,400, an increse of nearly52% (Spence, 2022).

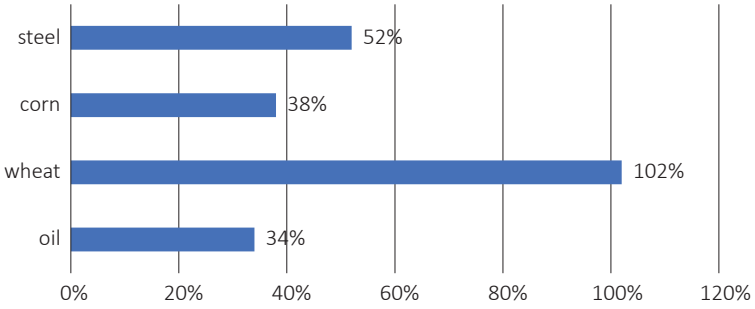

Figure 5: The increase in the price of raw materials after the outbreak of the war

Conclusion

The Russia-Ukraine war has led to significant effects on the global economy . These effects include extensive disruptions to the global supply chain, which is highly dependent on the maritime trade which accounts for transport 90% of all global trade (OECD, 2022). The increase in insurance rates, the sanctions on Russia and the naval blockade of Ukrainian ports hasd led to a price surge in the commodities market, which in turn led to an overall price increase for the entire consumer market, in aspects of energy, manafacturing, food, etc.

It must be noted that the conflict between Russia and Ukraine affected an already strained global market, following a long period of disruptions caused by the COVID-19 pandemic. Insurance giant Allianz claims that "the war is creating an additional burden on the maritime industry, which is already dealing with ongoing supply chain disruption, port congestion and a crew crisis caused by the pandemic". (Allianz, 2022). Meanwhile, the increase in raw material prices acts as a catalyst for global inflation; for the first time in 40 years, both the United States and Europe are suffering from an inflation of over 8% (Trading Economics, 2022a).

Despite recent achievements of the Ukrainian military in the eastern districts of Kharkiv and Donetsk (Applebaum, 2022) and the successful Ukrainian strikes against Russian vessels by coastal anti-ship missles and drones (Miller and McLeary, 2022), it is important to remember that the balance of power in the maritime domain still largely remains in Russia's favor. The Russian fleet continues to deploy large numbers of advanced military vessels in the region that enable the continuation on the naval blockade against Ukrainian ports. Accordingly, it would be true to conclude that as long as the war continues to

rage on, disruptions of the global supply chain will continue leading to further price increases fueling the spiking inflation rates. Looking ahead, the most effective way to restore stability to the global economy will be regional or international collaborations and agreements, such as the Black Sea Grian Initiative.

The proccess of globalization over the past decades has enabled the integration of economic markets to an unprecedented level. This has led to increased competition, product diversity, high level customer service, as well as the quick and efficient transportation of goods all over the world.Nonetheless , the conflict between Russia and Ukraine remains a painful testimony to the adverse effects of globalization – as a war taking place in a relativaly limited geographic area has led to massive negative effects on the global market in a way that nearly every citizen in the world experiences.

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Maritime Alternatives to the Russian Gas Import to Europe

Nitsan Lifshits

Europe is one of the most significant energy markets in the world. EU countries import about 90% of energy sources they consume, with liquefied gas supplied to them by the United States.[1] Gas serves as an extremely important source of energy For Europe, since the continental electricity infrastructure, the heating of citizens' homes and the advancement of industry are all based on gas. Importing large quantities of gas is necessary for Europe because its stored gas capacity has significantly dropped in 2021 compared to previous years.[2] Figure 1 shows that while the ability to store gas in the European Union has increased, only 26% of available gas capacity was actually stored at the end of 2021, in contrast to a capacity of approximately 90% in 2020.[3]

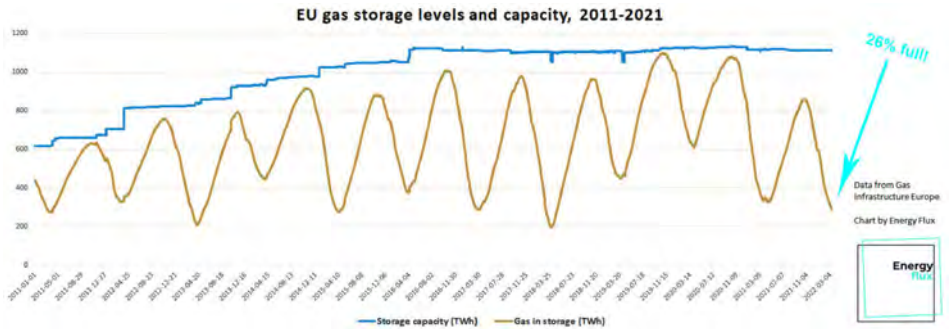

Figure 1: The average storage capacity and available capacity for natural gas in the European Union over the past decade[4]

Russia's invasion of Ukraine in February 2022 created a serious predicament in regard to the energy market for the whole world and for European countries in particular. Russia is the largest exporter of natural gas in the world, one of the largest exporters of liquid gas (along with Qatar and after Australia and the United States), as well as one of the largest oil exporters.[5] As a result, its influence on prices in the energy market is very

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1 Jarrett Renshaw & Scott Disavino, "Analysis: U.S. LNG Exports to Europe on Track to Surpass Biden Promise". *Reuters*, July 26, 2022.

2 *ABC NEWS*, "Australia has Offered to Export More Liquefied Natural Gas to Europe in Light of Ukraine Tensions. Here's Why". January 27, 2022.

3 Seb Kennedy, "There's not Enough Gas to Go Around". *Energy Flux*, March 18, 2022.

4 ibid.

5 Statista, "Leading Gas Exporting Countries in 2021, by Export Type", 2022.

significant. A war of this scale between Russia and Ukraine has had a dramatic effect on global geopolitics and threatens global trade and economy. In this context, energy prices have significantly risen in recent months, and in this context, some EU countries are facing a serious problem.

In 2021, Europe consumed about 500 BCM of natural gas; about 380 BCM of this gas was imported (through pipelines or liquefaction) and 45% of this gas was imported from Russia.[6] At the same time, Europe has imported about 76 million tons of coal and about 880 million barrels of oil, of which approximately 29% were imported from Russia.[7] This is a reality causing EU countries to search for alternative energy sources and to diversify their sources of import. European countries have understood for years that their energy dependence on Russia is problematic. As early as 2014, following the annexation of the Crimean Peninsula in the Black Sea, an official document entitled "The European Energy Security Strategy" was published on behalf of the European Union. The document stated that energy dependence on Russia alongside a limited number of suppliers creates one of the biggest and most dangerous challenges facing the European energy market.[8] The current war between Russia and Ukraine has highlighted the problematic aspects of energy dependence on Russia, and the frantic European search for alternative energy sources is now apparent.[9] To understand how serious this crisis is, it is enough to notice the panic that arose in Germany when the gas flow through the "Nord Stream 1" pipeline stopped for ten days in mid-July.[10] On March 8, 2022, shortly after the Russian invasion, the European Council stated that it aims to no longer be dependent on Russian energy and that it intends to reduce dependence on Russian gas long before 2030, so that by the end of the current year the supply of Russian gas will be reduced by approximately two-thirds.[11] This reduction of 101.5 BCM of natural gas can be achieved – at least theoretically – by increasing import from non-Russian sources to about 68 BCM of natural gas, as well as by locating other energy sources, cutting back on consumption and creating more energy efficiency, thus providing an alternative to the use of 38 BCM of natural gas.

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6 *BP,* "Statistical Review of World Energy", 2022.

7 *Eurostat*, "From Where do We Import Energy?", 2022.

8 Elai Rettig and Oded Eran, "The EU's Energy Challenges", in Yotam Rosner and Adi Kantor (eds.), *The European Union in Turbulent Times: Challenges, Trends, and Significance for Israel*, Institute for National Security Studies (INSS), May 2018, pp. 103-112

9 Elliot Smith, "Europe's Plans to Replace Russian Gas are Deemed 'Wildly Optimistic' – and Could Hammer its Economy", *CNBC,* June 29, 2022.

10 Globes, "Russia Renews Nord Stream 1 Gas Transfer to Europe," 21 July 2022. [Hebrew]

11 *European Commission,* "Statement by President Von der Leyen on the 'Save Gas for a safe Winter' Package", July 20, 2022.

In order to see whether and to what extent the European ambition to "abstain" from Russian gas is realistic, it is necessary to understand and analyze which non-Russian gas routes and alternatives currently exist for Europe, and what their gas capacity is. We shall begin by describing the existing Russian gas routes:

Several gas pipelines lead gas from Russia to Europe, some by land, such as those passing through Belarus, Turkey or Ukraine, and the Baltic Sea. In the case of Ukraine, passage through its territory has caused many problems in the past and even more so in the present. The 4,107 km long Yamal-Europe pipeline has a capacity of about 33 BCM of natural gas, and transports natural gas from the Russian gas fields on the Yamal Peninsula and western Siberia to Poland and Germany, via Belarus. It also transports liquid gas to European ports, such as the liquefied gas port in Rotterdam. The "Nord Stream" gas project consists of two gas pipelines that have been streaming natural gas from Russia to northeastern Germany through the Baltic Sea since 2011 and 2013, and serve as the longest maritime gas export route in the world. The "Nord Stream 2" project doubled the output of these lines, from a 55 BCM to 110 BCM capacity of natural gas. In total, Europe has imported about 155 billion cubic meters of gas from Russia, mostly through gas pipelines, including 15 cubic meters of liquefied natural gas (LNG).[12] Figure 2 shows the "Nord Stream" pipelines routes from Russia to Europe – the most important marine gas routes for the trade between these parties.

Figure 2: A map of the "Nord Stream" pipeline streaming gas from Russia, through the Baltic Sea, to Germany[13]

12 *IEA*, "A 10-Point Plan to Reduce the European Union's Reliance on Russian Natural Gas", March 2022.

13 Moshe Kassif, "Increased Risk for Gas Supply to Europe, the High Price – and the Israeli Angle", *BizPortal*, July 6, 2022 [Hebrew].

What, then, are the alternatives to Russian gas? Several major routes lead natural gas and liquefied natural gas from other countries such as Algeria, the United Kingdom, Australia and the United States to EU countries today. All of them pass through the maritime domain or depend on sea lanes.

Algeria is the third largest supplier of gas to EU countries, and in 2021 it should export about 34 BCM of natural gas to Europe.[14] It should be noted that the largest increase in the supply of gas imported to Europe through pipelines today is from Algeria.[15] Algeria has long-term gas contracts with Italy, Portugal and Spain, and transfers a high volume of gas to them through pipelines about a thousand kilometers long, from the Hassi R'Mel gas field in the heart of Algeria, across the Mediterranean Sea.[16] One of these pipelines, transporting gas from Algeria to Spain (the MGE line) does indeed have the capacity for 6 BCM of natural gas in addition to the 13 BCM of gas it contains, but this line passes through Morocco, and due to tense relations between Morocco and Algeria, this pipeline was closed a year and a half ago.[17] The "Medgaz" gas pipeline running from Algeria to Spain can increase its amount of transported gas from 8 BCM of gas to about 11 BCM.[18] This may help in the effort to increase gas transfer from the Iberian Peninsula to France, with the two relatively small pipelines in use today, in which the unused gas capacity is about 7 BCM of natural gas.[19] In the long run, it is quite possible that with the completion of the 190 km long "MidCat" pipeline, leading from the Pyrenees and Barcelona to the south of France, the transportation of gas from Spain and Portugal to France and the rest of Europe will become more significant.[20] There are currently six gas liquefaction plants operating in Spain, making it possible to increase the import of liquefied gas from the United States and to transfer it to Western Europe through the planned "MidCat" gas pipeline. That being said, France only receives about 17% of its gas from Russia, and its energy infrastructure is mostly nuclear-based, thus, this is not a critical solution for France, while for Central and Eastern European countries these are not effective short-

14 Francis Ghiles, "Escalating Rivalry between Algeria and Morocco Closes the Maghreb-Europe Pipeline", *CIDB*, November 2021.

15 *BP*, "Statistical Review of World Energy", 2021.

16 News Wires, "Italy Signs Clutch of Deals with Algeria in Bid to Boost Gas Supply", *France24*, July 18, 2022.

17 Francis Ghiles, Escalating Rivalry, *CIDB*, 2021.

18 *Enerdata,* "Algeria will Expand the Capacity of the Megaz Pipeline to Spain by 1/3", November 11, 2021.

19 Rodrigo Orihuela & Alonso Soto, "Spain Says it can Pipe More Gas to France by Fall, Easing Bottleneck", *Bloomberg,* July 2022.

20 Madrid (AFP), "Ukraine War Revives France-Spain MidCat Gas PipeLine", *France24,* May 11, 2022.

term solutions.[21] However, it is certainly possible that in the future larger quantities of liquefied gas may be transported to the liquefaction plants in Spain, and transferred to Central and Eastern Europe through France after the gas pipelines passing through France are expanded. Furthermore, it should be noted that Spain and Portugal themselves do not need all of the gas they import from Algeria, since their liquefaction plants have the capacity to receive liquefied gas from the United States, as long as the European Union compensates them for the price differences. As for increased exports from Algeria, for southern and central European countries, the Italian option is preferable, since, as mentioned, Spain and Portugal's ability to export gas to them is limited. Thus, Algeria can increase the amount of gas streamed to Italy through the "TransMed" pipeline by about 9 BCM of natural gas at most, in addition to the 20 BCM of natural gas streamed through the pipeline every year.[22] An increase in the amount of gas exported from Algeria to Italy is expected in the coming years, but not in the winter of 2023.[23] Figures 3 and 4 show the gas pipelines leading from Algeria to Italy and Spain.

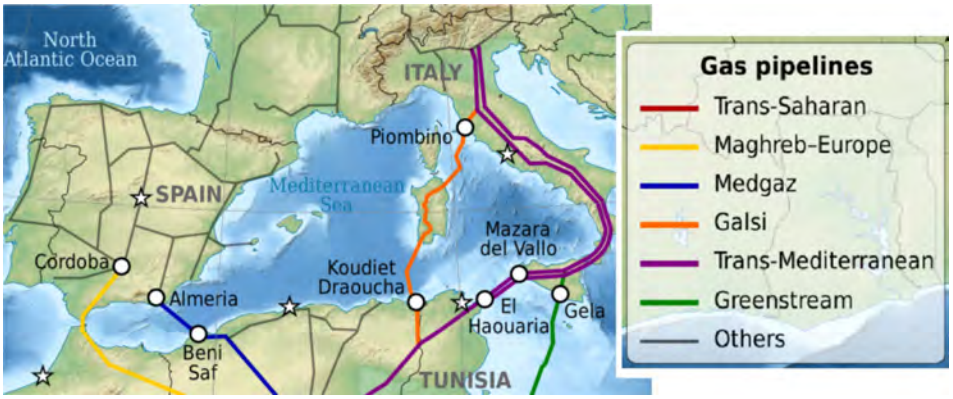

Figure 3: The gas pipeline from Algeria to Italy (in purple and orange) and the pipelines to Spain (in blue and yellow, which pass through Morocco and are no longer active) [24]

21 *The Local,* "France no Longer Receiving any Russian Gas Via Pipeline", June 17, 2022.

22 News Wires, "Italy Signs Clutch of Deals with Algeria in Bid to Boost Gas Supply", *France24*, July 18, 2022; Doron Peskin, "A Problematic Alternative to Russia: Algerian Gas is Also a Tool of Punishment", *Calcalist*, April 11, 2022 [Hebrew].

23 Lain Esau, "Algeria Agrees to Boost Annual Piped Gas Sales to Italy by up to 9 Billion Cubic Meters", *Upstream*, April 13, 2022.

24 *Gas to Power Journal*, "Italian PM about to secure 4 BCM Additional Gas Supply from Algeria", April 11, 2022.

Figure 4: The gas pipelines from Algeria to Italy (in orange) and Spain (in blue), and the gas pipeline from Spain to France (in yellow) [25]

Another option is to increase the amount of gas passing through the 325 km gas pipeline between the United Kingdom and the Netherlands (the BBL pipeline, Figure 5) with an annual capacity of 45 BCM of natural gas.[26]

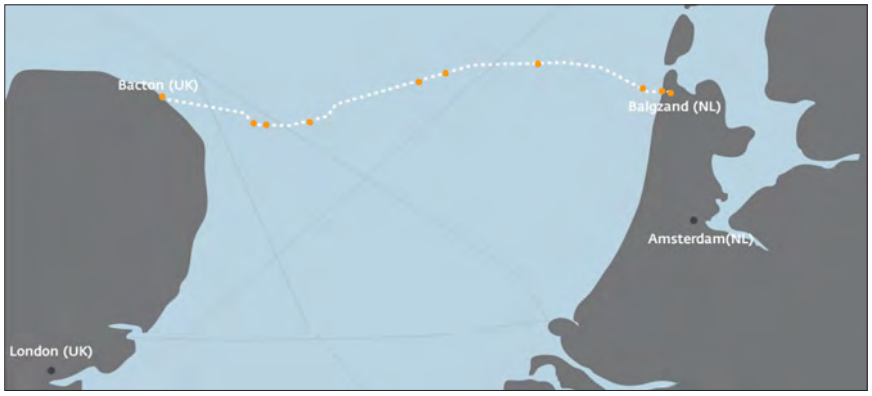

Figure 5: The BBL gas pipeline leading from the United Kingdom to the Netherlands[27]

25 *The Corner*, "The Iberian Solution can Offer Europe More Gas", May 2, 2022.

26 *BBL Company*, https://www.bblcompany.com/about-bbl, 2022.

27 Ibid.

Australia is also an important liquefied gas exporter, and in 2021 will export approximately 81 million tons of liquefied gas.[28] Thus, it may well be part of the efforts to diversify energy supply sources for the European market, a move that will benefit it economically and politically. However, in view of the situation in the global energy market and the fear of a gas shortage, there are growing voices in Australia calling for curbing exports and prioritizing the storage of excess gas.[29]

Some scholars offer another, somewhat more creative, solution, which is streamlining the natural gas systems in general and in North Africa in particular, including the Algerian pipeline. Thus, by preventing fuel from igniting or leaking, Europe may save 80 BCM of gas. That is to say, the estimated wasted gas in flare-ups and leaks around the world amounts to about 260 BCM of natural gas per year, an amount 1.7 times greater than that which Europe imports from Russia, and about 7% of global gas consumption. Such efficiency-oriented changes do not require considerable financial investment or technological innovation but currently are not seriously considered in the context of official European policy. In addition, expanding the use of renewable energies in areas where this is possible may help the effort to reduce Russian gas imports.[30] Renewable energies have been proven to be able to reduce domestic gas consumption by up to 57 BCM of natural gas by 2028.[31] Furthermore, a substantial amount of gas is used for the production of more oil – using a method called "reinjection".[32] With this method, gas is injected into an oil reservoir to create faster oil flow, thus increasing the amount of oil. The choice of whether to use the gas for "reinjection" or to sell it as gas depends heavily on the price of these two fossil fuels. Today, several countries, including Algeria, find it more profitable to use gas to improve and accelerate oil production rather than to sell it as gas.[33] Due to the gas crisis in Europe, and with appropriate financing, it is possible to reach agreements with countries using this method and encourage them to sell more gas rather than implement alternative uses, such as "reinjection".

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28 *ABC NEWS*, "Australia has Offered to Export More Liquefied Natural Gas to Europe in Light of Ukraine Tensions. Here's Why", January 27, 2022.

29 Sonali Paul & Renju Jose, "Australia Considers Curbing Gas Exports to Avert Domestic Supply Crunch", *Reuters*, August 1, 2022.

30 Jan Rosenow, "Europe on the Way to Net Zero: what Challenges and Opportunities", *Plos Climate*, July 14, 2022.

31 Jonathan Mingle, "How U.S. Gas Exports to Europe could Lock in Future Emissions", *Yale Environment 360*, April 21, 2022.

32 Mao Sheng, Haizhu Wang, Ruiyue Yang, and Bing Yang, "Chapter Six – Experimental Methods in Fracturing Mechanics Focused on Minimizing their Environmental Footprint", In: *Sustainable Natural Gas Reservoir and Production Engineering 143-182: (2022).*

33 *Rysted Energy,* "Rebalancing Europe's Gas Supply Opportunities in a New Era", September 2022.

Another solution to the problem in question is to increase the import of liquefied natural gas (LNG) from non-Russian sources. Most liquefied gas is transported in tankers on ships from liquefaction plants (where natural gas is transformed into liquid by cooling it to minus 162 degrees Celsius) to the gasification plants, where the liquefied gas returns to a natural gas state, and is then transported through pipelines to other destinations. Liquid gas has become more popular in recent years, and due to its great importance in the global energy market, it affects the growing importance of the maritime domain.[34] Liquefied gas has proven to be an available, sought-after and important energy source, and was among the only products to show trade growth during the Covid-19 pandemic in 2020. However, while during a normal year, global trade in liquefied natural gas grew by about 8%, in 2020 it increased by only 1%, a fact also indicating a significant slowing down of global economic activity. For Europe, the possibility arises that Germany may build a number of liquefaction plants on its northern coast, and thus be able to receive liquid gas from the United States – one of the largest exporters of LNG in the world.[35] However, before considering the options based on future liquefaction plants, there are several options for increasing the quantities of liquefied gas imported to Europe from various non-Russian sources and reducing dependence on Russian gas. Figure 6 presents the quantities of liquefied gas imported to European countries, as of 2021, and the available liquefied gas capacity at their terminals.

The second largest port in the world, the port of Rotterdam in the Netherlands, has an LNG terminal ("LNG Gate") that is able to receive liquid gas,[36] and liquid gas is transferred to it on tankers from the Yamal Peninsula in Siberia, Russia.[37] There is an option for increasing the quantities of liquefied gas exported to European ports, thereby partially bypassing Russian gas. According to the American Energy Research Institute, the United States may be able to supply an additional amount of about 15 BCM of liquefied gas this year (2022) and increase the amount currently exported by more than 50 BCM of liquefied gas by 2030.[38] See Figure 7 for the existing American LNG facilities for export.

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34 Mariusz Ruszel, "The Development of Global LNG Exports", In Kari Liuhto (ed.), *The Future of Energy Consumption, Security and Natural Gas*, 1-20: (2022).

35 *European Commission*, "EU-US LNG Trade", 2022.

36 *Global Energy Monitor*, "Gate LNG Terminals", 2022.

37 *Global Energy Monitor*, "Yamal Energy Terminals", 2022.

38 Clark Williams-Derry, "The U.S. can Increase LNG Exports to Europe", Institute for Energy Economics and Financial Analysis, April 6, 2022.

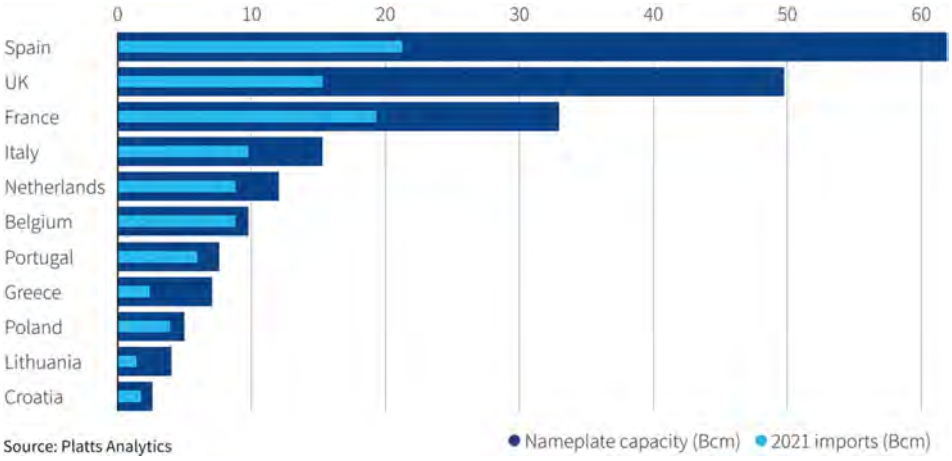

Figure 6: Import data (in light blue) and free capacity (in blue) of liquefied gas in European countries[39]

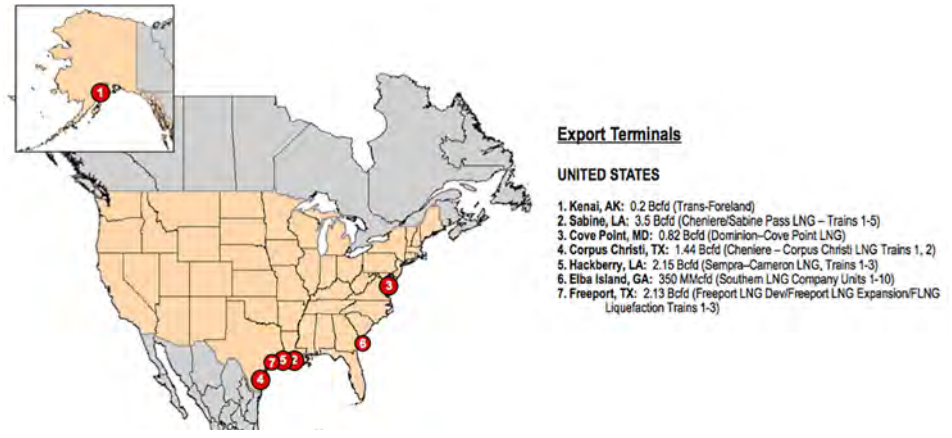

Figure 7: LNG export facilities in the United States, mainly in the southeast[40]

The United States is the largest exporter of liquefied gas to European countries, and since 2016 has been exporting liquefied gas to them at increasing rates from year to year.[41] From April 2016 to January 2022, Europe imported more than 64 BCM of liquefied natural

39 Marwa Rashad & Isla Binnie, "Brimming European LNG Terminals Lack Room for More Gas", *Reuters*. February 18, 2022.

40 *Global LNG Hub*, "North American LNG Export Terminals", 2022.

41 Mike Schuler, "FreePort LNG set to Restore Production at Key LNG Export Facility in October, Earlier than Anticipated", *QCaptain*, August 5, 2022.

gas from the United States.[42] In 2021, the European Union imported about 77 BCM of liquefied gas from the US, and together with Turkey and the United Kingdom's liquefied gas imports, this amounts to about 108 BCM of liquefied gas. According to some, Europe should expand its imports of liquefied gas from the United States, since it has huge gas resources and is considered a close and stable political friend. The European Union has double the liquid gas capacity it uses today – a fact that can enable the seeking of a substitute for Russian gas. But there are several problems with this solution: most of the factories available to receive liquefied gas are located in Western and Northern Europe, on the shores of the Baltic Sea and the Atlantic Ocean, such as in the United Kingdom, Spain and Portugal. Thus, the import of liquefied gas from other maritime areas (the Mediterranean Sea, the Black Sea) is not relevant for these terminals, and for this reason, the amount of liquefied gas that can be transported to them is limited. The capacity of the natural gas pipeline between Spain and France is only 7.5 BCM, and currently uses 0.5 BCM. This means that it is possible to slightly increase the amount of liquefied gas sent to Spain, and transfer it to France, but these are small amounts compared to those needed in Europe. See Figure 8 for the existing and potential liquefied natural gas (LNG) plants in Europe.

The disparities between the liquefied gas absorption capacities of Northern and Western Europe versus Central, Eastern and Southern Europe create an internal problem within the European Union since the lack of supply of Russian gas and the lack of alternative gas and energy sources in the winter of 2022 will affect EU countries in different ways. This is another serious problem that the EU will have to face. How will it remain united and consistent in terms of its foreign policy and in its reactions to continued sanctions against Russia, in view of the differences in the ability to deal with the crisis in energy and gas sources?[43]

Other alternatives frequently referred to are importing more gas from Israel, Egypt, Turkey and the other Maghreb countries (Morocco and Libya). Regarding Israel and Egypt, both have greater gas reserves than they produce, consume or export (Egypt exported about 9 BCM of natural gas in 2021,[44] and Israel exported about 7.14 BCM of natural gas last year).[45] However, the EMFG gas pipeline, through which Israel exports to Egypt, has

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42 *European Commission*, "EU-US LNG Trade", 2022.

43 Georg Zachmann, Simone Tagliapietra, Ben McWilliams, & Giovanni Sgaravatti, "Preparing for the First Winter without Russian Gas", *Bruegal*, February 28, 2022.

44 *BP*, "Statistical Review of World Energy", 2022.

45 "Review of Developments in the Natural Gas Economy", Ministry of Energy, March 22, 2020 [Hebrew]; "A New Gas Pipeline from Israel to Egypt? The Ministry of Energy is Examining the Plan", *Investing.Com*, 22 November 2021 [Hebrew].

a capacity of only 5 BCM of gas per year. There is a possibility of expanding the pipeline and completing additional sites for the gas infrastructure so that the amount exported to Egypt will increase to 8 BCM of natural gas per year in the coming years, but this is a minor amount by European standards. In any case, the ability to receive the amount of Egyptian liquefied gas in Europe is very limited.[46] Libya has been experiencing political instability for several years due to the civil war and Morocco itself has to import natural gas, since after the shutting down of the pipeline between Algeria and Morocco, Spain started exporting to it.[47]

Figure 8: The existing, planned and potential liquefied gas plants in Europe[48]

Turkey has already begun to supply natural gas to Bulgaria, whose supply from Russia has been reduced, as part of a Russian political move to reduce gas export to European

46 Marc Espanol, "Egypt Breaks LNG Export Record with Eye on Europe", *Al-Monitor*, February 16, 2022.

47 Stuart Elliot & Gianluca Baratti, "Spain Begins Gas Re-exports to Morocco via GME Pipeline: Enagas", *S&P Global Commodity Insights*, June 29, 2022.

48 *European Commission*, "EU-US LNG Trade", 2022.

countries, as a counter-reaction to the European Union's policy.[49] Turkey has discovered a huge natural gas reserve in the Black Sea, known as "Tuna-1" which contains about 400 BCM of natural gas, but its production has not yet begun, thus is not relevant for 2023. It should be noted that Central Asian countries, such as Azerbaijan, Turkmenistan, Kazakhstan and Uzbekistan have huge gas reserves which some of them export, mainly to Turkey. The TANAP gas pipeline in Azerbaijan, which currently has an annual average flow of 10 BCM, can transport 16 BCM per year and will be able to hold an additional 15 BCM of gas annually, by the end of the decade.[50] Theoretically, Europe can import much of this gas from Turkey;[51] however, many political obstacles are part of this picture.

Among all the alternatives mentioned here, the most realistic option is the increase in import of LNG from the United States to the Iberian Peninsula, and the construction of a gas pipeline transferring considerable amounts of gas to France, followed by creating an infrastructure for the leading of gas to Germany and additional countries in need of gas in southern and eastern Europe. Relations between the United States, Portugal, Spain, France, and Germany are strong and stable, and there are no diplomatic or security related tensions that may create problems in regard to this alternative. The United States has huge amounts of LNG to export, the liquefaction plants already exist on the Iberian Peninsula and can be expanded, and this region, as well as the region in question in France, is quiet and safe. It is possible that in the long run this solution will indeed be implemented, but not in 2023 or 2024. Although the United States has already stated that it will increase the quantities of liquefied gas exported to Europe, since its gas facilities are already working at almost maximum output, and any new project will only be completed after 2024, the excess amounts of LNG the United States can export to Europe today, will be deducted from its other customers, mainly East Asian countries, and it is not clear how this will be settled.[52] In addition, unexpected events such as malfunctions in gas infrastructures, such as in the case of the explosion of the second largest gas facility in the United States, the "Freeport – LNG" Pretreatment Facility in Texas, which is responsible for about 20% of exported liquid gas from the United States, make it difficult to increase the gas production and cause a dramatic increase in prices. Beginning in early 2022, gas prices in continental Europe have increased by more than 200%.[53] These problems make

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49 David O'byrne, "Turkey Looks to Import Gas from Turkmenistan, Test Exports to Bulgaria", *Al-Monitor*, July 12, 2022.

50 *Rysted Energy*, "Rebalancing Europe's Gas Supply Opportunities in a New Era", September 2022.

51 Mardan Valhanov, "The Work on the Transportation of Turkmen Gas to Turkey is Nearing Completion", Anadolu Ajansi, July 2, 2022. (Turkish)

52 Guy Tal, "The US Wants to Replace Russian Gas – what are the Difficulties and who is Expected to Benefit from this?", *bizportal*, March 27, 2022 [Hebrew].

53 Moshe Kassif, "An explosion at a Gas Facility in Texas Raises the Price of Gas in Europe and Causes it to drop in the US", *bizportal*, June 14, 2022 [Hebrew].

it difficult to implement this alternative of increased gas imports from the United States as an alternative to Russian gas, certainly in the near future.

Conclusion

What will actually happen in the winter of 2023? How will the gas market in Europe be affected and will Russia really cease to be the main energy supplier for the EU? It is difficult to answer these questions at the moment, but there appears to be a lack of effective alternatives that will fully, adequately, reliably and safely replace the supply of gas from Russia to European countries this winter. These alternatives are limited due to engineering, technological, political or budgetary difficulties. It is indeed possible, to a certain extent, to increase the quantities of liquefied gas imported to terminals with free capacity, from which available gas pipelines will lead to Central and Eastern Europe. Additionally, it is possible to increase the quantities of gas from North Africa to Italy and then to the EU, but these solutions guarantee only a small percentage of the gas that Europe consumes.

The danger arising as a result of fewer energy sources is not limited to the European fear of the freezing winter, but to real possible economic harm, since EU business activity relies on energy, and for some countries, industry, which relies on energy, is a significant foundation of their economy. For example, in Germany, gas is the second most important energy component after oil, and about a third of its economy is based on it.[54] In April 2022, Germany's Central Bank, Deutsche Bundesbank, announced that in the event that Russia completely cuts off gas flow to Europe, there will be a 5% hit to the German GDP, with an estimated amount of 180 billion euros.[55] The International Monetary Fund (IMF) has warned of a decline of up to 1.5% in the growth of the European GDP and of an option of deepening the recession.[56] Replacing Russian gas with imports from other sources is a complicated challenge and it is not clear how the European Union will be able to replace the huge amounts of gas it consumes.

For this reason, it seems that in the coming winter months during the end of 2022 and the beginning of 2023, Europe will continue to use Russian energy sources for heating, and in the process will attempt to find solutions by bypassing sanctions and regulating relevant issues, without any significant change to the current state of affairs.

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54 *Federal Ministry for Economic Affairs and Climate Action*, "Natural Gas supply in Germany", 2022.

55 Financial Times, "Boycott on Gas Imports from Russia will Shrink Germany's GDP by 5%", *Calcalist*, February 24, 2022 [Hebrew].

56 Eloise Barry, "Europe Relies on Russian Gas. A Tough Winter Lies Ahead Amid Fears of a Cut-Off", *TIME*, July 26, 2022.

Table 1, below, presents the main points and data presented in this article, stating the advantages and disadvantages for Europe when it comes to alternatives to Russian gas.

Table 1: Summary of the data regarding gas export, as well as the advantages and disadvantages of the various alternatives to Russian gas

Countries of Origin and Destination	The amount of Gas Exported per Year	Advantages	Disadvantages
Algeria to Italy	About 20 BCM of gas through the "TransMed" pipeline.	May increase export by 9 BCM.	Not able to increase the amount per year for the next two years.
Algeria to Spain and Portugal	The transport of about 13 BCM of gas in the "MEG" pipeline was stopped in 2020.	May increase the amount exported on the EMG line to Portugal by about 6 BCM of natural gas.	The line is currently inactive due to the political disputes between Algeria and Morocco – where the pipeline passes on its way to Spain.
Algeria to Spain	About 8 BCM of natural gas in the "MedGas" pipeline.	Free capacity for about 11 BCM of gas.	A minor amount in European terms.
Spain to France	About 7.5 BCM of natural gas in the "MidCat" line.	Free capacity for about 3 BCM of natural gas.	A minor amount of gas and France is not among the countries that depend on Russian gas.
Israel to Egypt	5 BCM of natural gas per year.	A possibility of expanding the "EMFG" gas pipeline so that it may transport 8 BCM of gas.	A minor quantity by European standards that does not justify the costs of expanding the pipeline.
Egypt to Europe	3.5 BCFE of gas.	Can increase its LNG exports. The liquefaction capacity of its plants is double the amount exported.	There is insufficient capacity in the liquefaction plants on the European side of the Mediterranean Sea for large quantities of LNG from Egypt.
Turkey to Europe	Does not export itself, imported gas to Europe passes through it.	May export from the huge reservoir "Tuna-1" in the Black Sea.	The commercial production of large quantities of gas from the reservoir will not be carried out in the coming years.
United States to Europe	Exports the largest quantities of LNG that the European Union imports.	Can increase the amount.	American exports are mainly relevant for the European countries on the shores of the Atlantic Ocean. Ineffective for Central, Southern and Eastern European countries, which most need alternatives to Russian gas, since there is no efficient gas transmission infrastructure in the center of the continent.
From Azerbaijan to Turkey	10 BCM of natural gas per year through the TANAP pipeline.	This amount can be increased by 6 BCM of gas today.	The existing obstacle to increasing the amount is political.

The Iranian Strategy Following the War in Ukraine

Alex Grinberg

The fate of the Iranian nuclear deal (JCPOA) is still unclear, while Iran continues its traditional diplomacy without any significant changes. Iran did not expect the Russians to invade Ukraine, and so did other regional and global players. The new state of events forced Iranian leadership to maneuver skillfully in order to achieve political gains, nevertheless it did not alterate Iranian stance radically. This article illustrates Iran's updated security views to the Israeli reader following the war in Ukraine and evaluates the possible Iranian reactions in the coming year; the reduced chances for re-signing the nuclear deal are taken in account as well. In addition, the article examines certain changes in Iranian naval strategy in the Persian Gulf.

Iran's Security and Threats Perceptions

The Iranian regime is convinced there are several main threats that it has to defend against:

- The United States since 1979 – The Iranian regime suspects that the United States intends to change its regime and its Islamic nature, including by a 'cultural attack', i.e., Western cultural influence.
- Israel.
- Saudi Arabia's support for Sunni Jihadist movements (in Iran's opinion).
- Complicated challenges around Iran's breached borders.[1]

The threats also dictate national interests, in which the survival of the regime is the primary interest. It means not only the physical survival but also the continuation of the regime of the Islamic revolution, also known as Velâyat-e Faqih (The Guardianship of the Islamic Jurist), which grants the leader supreme authority over any elected president. There are four essential Iranian interests:

1. The regime is determined to protect itself against internal and external threats; keeping in mind that most Shiites outside of Iran had never embraced the Iranian ideology.
2. Deterrence: Iran is aware that most of its rivals, including Israel, have larger quantities of superior conventional weapons. As a result, Iran invests in developing asymmetric capabilities, which include missiles and activating foreign proxies.

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1 Gawdat Bahgat and Anoushervan Ehteshami, *Defending Iran: From Revolutionary Guards to Ballistic Missiles* (Cambridge: Cambridge University Press, 2021).

3. Retaliation: The asymmetric capabilities are designed to serve as another deterrence leverage if Iranian deterrence fails. In such a case, Tehran will unleash its asymmetric response by using missiles, drones, and pro-Iranian militias attacks, to cover for failing to prevent the enemy from attacking. Yet Iran resorts to all of the aforementioned capabilities to carry out it regional policies.
4. Power Projection: Iran sees itself as a regional power. The asymmetric capabilities are meant to persuade neighboring countries to prefer cooperation with Iran over conflict.[2]

On the one hand, most of the research literature on Iran's security doctrine is reluctant to thoroughly analyze issues of Iranian behavior, especially relating to Israel. Moreover, there is an unwillingness to analyze these perceptions critically. It has been argued that Iranian policy is after all pragmatic and not so different from other regimes.[3] On the other hand , there are many Israeli opinions regarding the Iranian nuclear program, on the right and on the left, but they do not discuss the essence of Iranian strategy, and rather focus either on the nuclear program, or its existential threat to Israel.[4]

The Ideological Structure of the Iranian Regime

The Effects of Modern Ideology

Iran's regime is not unique in being Shiite or Islamic since many nations in the Middle East abide by Sharia law. Both Pakistan and Afghanistan define themselves as Islamic republics. What makes Iran unique is the ideology that celebrates the Islamic revolution. Iran's leader Ali Khamenei often regards himself as 'a revolutionist',[5] that is due to the fact that the Iranian Islamist movements were directly influenced by Marxism. The defining myth of Shiite Islam is the Martyrdom of Imam Hussein in the battle of Karbala in 680 AD. The myth has metamorphosed since then thanks to modern interpretation by Islamic revolution harbinger Ali Shariati (1933-1977) who was influenced by Marxism and interpreted many Islamic terms based upon the fundamentals of Marxist ideas. His commentaries are widespread across Iran and embraced by the founder of the Islamic

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2 Ibid, pp. 11–12.

3 Ibid.

4 Gad Ivgy. "Existential Danger: Lapid's Strategic Failure", *Mida*, August 31, 2022 (Hebrew); Noah Shamir. "The Iranian Nuclear Program is not an existential threat. Israel needs another strategy", *Haaretz*, July 8, 2021 (Hebrew).

5 "Man, diplomat nistam, man enghelabiyam", "I am not a diplomat, I am a revolutionary" (*Rajanews,* February 8, 2013).

Republic, Ayatollah Ruhollah Khomeini.[6] Based on this interpretation, Hussein's heroic death was one of an unrelenting fight against injustice. The Islamic discourse embraced terms such as 'Oppressed on Earth' (Mostazafin) and "Global Arrogance" (Astakhbar-y Jahani or Mustakbarin). Khomeini's assistant, Ayatollah Mohammad Hussain Beheshti, who more than anyone else developed the new Islamic discourse, emphasized the importance of a political ideology or a doctrine in addition to other aspects of Islam.[7]

Resemblance to Communist Totalitarianism

As a result of the encounter with European influences Islam in Iran took shape of a completely modern political ideology. Moreover, the terminology and vocabulary of the Islamic revolution themselves are not only modern but borrowed from the West, starting with the term "Revolution". Therefore, the Iranian Islamic regime is not 'Medieval' or 'retrograde,' but modern and in some of its characteristics similar to modern authoritarian regimes. Of course, similarity doesn't mean identity, and yet there is a basis for analogy and comparison.

The revolutionary aspect had several consequences, some are strategic and long-term. One of them is a confrontation stance vis-à-vis Israel and the United States, that in Iran's eyes, represent a global hegemony. That is because the revolution inherently requires enemies, both foreign and domestic. This position perpetuates Iran's behavior as a revisionist power.

S.N. Eisenstadt pointed out a resemblance between the French Revolution's Jacobins to modern religious fundamentalists. He saw them as the modern Jacobins. The 18th-century revolutionary Jacobins championed the values of Enlightenment that the French Revolution supported; however, they claimed to represent the people without asking their opinion and determined that it was their right and even their duty to take every measure, including violence and terror, to bring the ignorant masses and the opponents to an enlightened revolutionary consciousness, be it through the guillotine The Jacobins were the first in history to use violence in the name of distinct humanist values.[8]

A fundamentalist approach is not limited to Islam alone. It is a monotheistic religion's response to the challenges of modernity. It is not a complete rejection of the West or

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6 Ervand Ebrahimian, "Ali Shariati: Ideologue of the Iranian Revolution", *Middle East Report,* 102, January/February 1982.

7 Mohammad-Hosseini Behesthi, *Mabani-ye Nazariye Ghanun-e Asasi* (Theoretical Fundaments of the Constitution), (Tehran: Bonyad-e Nashr-e Asar-e Shahid-e Behesthi, 2001), 22–25.

8 S.N. Eisenstadt, *Fundamentalism, Sectarianism, and Revolution: The Jacobin Dimension of Modernity* (Cambridge: Cambridge University Press, 2000).

modernism, but rather a selective appropriation of their values. Therefore, religious fundamentalism is by definition a modern phenomenon. Since the revolution, the Iranian regime went through many transformations following the purges and the Iran-Iraq war, but it remains the same regime that advocates the same values, that is to say, an inflexible ideology that relies on the state of perpetual conflict with the world's superpowers and Israel.[9] Moreover, there is no revolution without confrontation. It implies that as long as the Iranian regime insists on the revolutionary dimension of its essence, it needs confrontation. Otherwise, the regime's rhetoric risks becoming a lip-service, which is wrought with risks for the regime's credibility and survivability.

An Existential Need to Preserve the Ideology

Ali Khamenei has been leading Iran since 1989. He has proven to be a responsible and pragmatic leader; although it is important to understand these 'positive' descriptions in the context of Iranian reality. In other words, Khamenei has never taken any action that would make him seem reckless or warmongering. The leader of Iran is working to ensure the survival of his regime; however, it is necessary to clarify this determination and analyze the implications in a historic and national reality. In other words, how should the regime act to guarantee both the protection of Iran and the survival of the political revolutionary regime?

- The revolution must continue – Khamenei is aware of the fact that there cannot be any reforms without a profound change of the regime. For example, ending the conflict with the USA and Israel won't allow the regime to call itself revolutionary; it would then be widely known as merely empty slogans without any real content. If such developments occur, the regime will lose credibility and deterrence not only with geopolitical rivals but with citizens at home as well. The regime cannot afford to settle for exclusively verbal conflicts with the USA and Israel; it must carry the revolution's decree into practice. If that applies only verbally, it would be perceived as cynical and hypocritical, and automatically translated to the loss of credibility and deterrence mentioned before. Clearly, Khamenei or his successors will find it difficult to legitimize their rule if the regime does not stick to its revolutionary definitions and the Guardianship of the Islamic Jurist.
- Avoiding escalation or war – Khamenei and other senior regime officials took part in the Iran-Iraq war and are aware of the heavy price the Iranian people paid in that war. In spite of ongoing oppression, the Iranian regime is alert to the public's feelings and their fear of war. Furthermore, the leadership is aware of Iran's weaknesses; Iran

9 G. Almond, S. Appleby and E. Sivan, *Strong Religion: The Rise of Fundamentalisms around the World* (Chicago: University of Chicago Press, 2002).

is a vast country, but in the absence of a modern army it has difficulties maintaining its borders. The Iranian army, including the Revolutionary Guards, lacks mobility and quick reaction forces. It is clear to them that Iran cannot endure conventional warfare with a rival state. Therefore, Iran conducts its regional activities to achieve long-term objectives, but at the same time avoids taking actions that would ensure a severe military response.

- Emphasizing the asymmetric capability – In the absence of means or capability, Iran's conventional military force is limited. Therefore, the optimal solution the leadership had found is investing in asymmetric capabilities, which spreads over several fields:
  - Missiles and drones.
  - Supporting 'proxies' like Hezbollah in Lebanon, pro-Iranian militias in Iraq, Houthis in Yemen, and deploying precision-strike missiles in Syria; in addition to changing the Syrian demographic balance in favor of Shiites.
  - Hezbollah's global networks, especially in South America and Africa, rely on Shiite communities and work in favor of Iran.[10]
  - Nuclear weapons serve a purpose not as a weapon of war, but as a geopolitical power multiplier. It is likely that the regime's main goal in achieving nuclear weapons is to ensure its immunity.[11]

Iran, like any other nation, is subjected to various constraints and contradictory. It is worth noting that the depiction of Iran's policies as a dichotomy of either "pragmatic" or "ideologist" doesn't represent Iran realistically. Since no country is driven by ideology or utilitarian interests alone, every regime in every nation has constant ideologic and pragmatic considerations. Yet in each case, pragmatic or ideological considerations may be given varying weight. Pragmatism is not tantamount to moderation; it is the awareness of the cost of taking a certain step. Moreover, describing the national interest as only economically beneficial is a frequent mistake.[12] Iran conducts itself very pragmatically with (Christian) Armenia but avoids anything that Israelis or Westerners might see as pragmatism in relation to Israel.

Thus, subject to its national interests, Iran integrates both realism and ideology in its policy, but ideology is taken into consideration in foreign policy significantly more than by

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10 It is important to distinguish between 'proxies' and allies or clients. 'Proxies' are completely under Iranian subordination and are not independent. This means that Hezbollah's decision making is set by Tehran, although Hezbollah has its internal Lebanese considerations. Iran did not establish Hamas or Houthis; They are sponsored but not subjected.

11 Elliot Hen-Tov, "Understanding Iran's New Authoritarianism", *The Washington Quarterly*, 30, no. 1 (2007): 163–179.

12 Edward Luttwak, *Strategy: The Logic of War and Peace, Revised and Enlarged Edition* (Belknap Press, 2002): 211–214.

other countries. The Iranian national interest is influenced by real-politic considerations; however, the Islamic Republic's ideological goals are an integral part of national interest.[13]

The Implications of the War in Ukraine on Iran's Grand Strategy

Iran was surprised by the Russian invasion of Ukraine. Even on this issue the Iranian regime is subjected to various constraints and is not overall supportive of Russia. Khamenei and other government officials blame NATO for the war; yet, genuine support for the actions of the Kremlin cannot be found in Iranian media.[14] Former president Ahmadinejad tweeted a supporting message in English for Ukraine's Jewish president Zelenskyy.[15] Relations between Iran and Russia existed for hundreds of years, but they have always been complex. Russia, as well as the Soviet Union, encroached on Iranian territories. To this day, these two nations are far from harmonious and mutually respectful.[16] The Iranian regime is aware that among Iranian people there is resentment towards Putin's regime.[17] This requires the regime to maintain balance and refrain from exhibiting support for the war, at least in public.

Unofficial statements of top-ranking Iranian officers give a clear impression that Iran is learning from the war in Ukraine.

1. Nuclear deterrence must be kept – Many commentators as well as Iranian officers determine that the invasion was possible because Ukraine decided, under US sponsorship, to give up on its nuclear arsenal (which it had upon the breakup of the

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13 Ebrahim Aghamohammadi, "Bonydha-ye ideolojik-e dar Siyasat-e Khareji-ye Jumhuri-ye Eslami-ye Iran" (Ideologic Elements in the Foreign Policy of the Islamic Republic of Iran), *Hokumat-e Eslami*,85 (January 2018): 79–102; Shahruz Ebrahimi, "Barrasi va-Asazane-ye Naqsh-e Ideoloji dar Siyasat-e Khareji-ye Iran va Payvand-e an ba Vaghegerai va Armangerai" (A constructive examination of the role of ideology in Iranian foreign policy, as well as its relationship to realism and idealism), *Faslname-ye Beynalmelal va Ravabet-e Khareji* (Journal of International Relations), 4 (2009): 112–138.

14 H. Amirabdollahian. "The crisis in Ukraine is rooted in NATO's provocative actions. We do not consider resorting to war as a solution. Establishing a ceasefire and focusing on a political and democratic solution is a necessity", Twitter, February 24, 2022; Khamenei website. "The NATO Expansion is the Real Reason behind the Ukraine Crisis", June 25, 2022.

15 Mahmoud Ahmadinejad, The great nation of #Ukraine President #Zelenskyy Your honorable and almost unrivalled resistance uncovered the Satanic plots of enemies of mankind. Trust that the great nation of #Iran is standing by you,while admiring this heroic persistence, Twitter, March 2, 2022

16 Denis V. Volkov, "Bringing democracy into Iran: A Russian project for the separation of Azerbaijan", *Middle Eastern Studies, 58*, no. 6 (2022): 989–1003.

17 "Khaterat-e talkh, Angare-ye Iran az Hamsaye-ye Shimali Ast" (Black thoughts: The image of the Northern Neighbor in the eyes of Iranians), *Ensafnews*, May 31, 2022.

Soviet Union), which was a critical mistake. If Ukraine retained its nuclear weapons the Russians would never dare to attack; therefore, nuclear deterrence must be kept.[18] **A claim from a top-ranking Iranian military official leaves little room for doubt regarding the military destiny of the Irani nuclear program**. Khamenei's representative in Qazvin, Abdelkarim Abedini, stated in his Friday sermon on February 25, 2022, that "the Americans are trying to disarm the Iranian nation, and impose the fate of Ukraine on it."[19] The leader's senior advisor, Kamal Kharazi, stated that Iran has the ability to develop nuclear weapons although it had not yet decided to.[20]

2. **The strategic importance of missiles** – The war in Ukraine proved to Iran that military capabilities are more important than international support. The Russian use of missiles is a valuable lesson for Iran. Revolutionary Guards officers observe Ukraine's inability to inflict damage on Russia for its lack of long-range missiles. The Revolutionary Guards' bulletin published an article stating that "the missiles create a balance of terror, and force diplomacy on the enemy."[21] It should be noted that the article also discusses Ukraine's decision to dismantle its nuclear arsenal, and additionally mentions Thomas Schelling's views on nuclear deterrence. There is no doubt that the article implies not ordinary tactical missiles, but ballistic missiles armed with nuclear warhead.

Deputy chief of staff of the Iranian army, Aziz Nasirzadeh, spoke out in an even more explicit way. According to him, the main lesson from the Ukraine war is that "the Ukrainians gave up nuclear capability while nuclear weapons provide deterrence. A crisis ensued as a result. Some of our people hold the same thoughts; they mean that we should give up on offensive capabilities and strive for peace. In today's reality, it is impossible to ignore military capabilities or deterrence. The weaker we get, the more we will be attacked." Nasirzadeh also spoke about combining Iran's missile capabilities with the support for proxies, the latter are known as the 'Axis of Resistance': "The geography of the Iranian resistance has expanded. Thanks to self-production capabilities the resistance front has expanded, so today it can produce its own weaponry."[22]

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18 "Amir Naserzadeh: Jang-e Ukrain Darsha-ye Moheni baraye Iran Darad" (Amir Nasirizadeh: The war in Ukraine may teach Iran many important lessons), *IRNA News*.

19 "Raftar-e tahghiramiz-e Amrika ba Raisejumhur-e Ukrain dars-ebrat gharbzadeha bashad" (The humiliating treatment of the Ukrainian president by the United States should serve as a lesson for those who support the West), *hawzahnews*, March 16, 2022.

20 Khamenei's Foreign Policy Advisor Kamal Kharrazi: Iran Has Become a Nuclear Threshold Country, *MEMRI TV Videos.*

21 Arziabiy-e nashriy-e Sepa az Amuzahaye Jang-e Ukrain Chist (The lessons the Irani Revolutionary Guards bulletin learn from the war in Ukrain), *donya-e-eqtesad, February 28, 2022*.

22 See 18: "Amir Nasirzadeh: Jang-e Ukrain Darsha-ye Moheni baraye Iran Darad" (Amir Nasirizadeh: The war in Ukraine may teach Iran many important lessons), *Al-Alam,* February 28, 2022.

In September 2022, Iran supplied its manufactured UAVs to Russia; Russia doesn't own sufficient weapons of that grade. It's been reported that the Russians used two types of Iranian UAVs: Mohajer-6 and Shahed-136. Iran refused to comment on these reports. It is doubtful that this weapon will be Russia's strategic advantage in the war with Ukraine, but it is an opportunity for the Iranian industrial complex to test these weapons in war conditions. These are two completely different weapons: while the Mohajer-6 is an Unmanned Aerial Vehicle, the Shahed-136 is categorized as Loitering Munition.[23]

The war in Ukraine did not change Iran's strategic assessments, but it has persuaded the leadership that its current strategy is correct:

- The nuclear program is a strategic asset (whether it be of a nuclear threshold state or a finalized nuclear weapon). The main lesson of the war in Ukraine is that "a country like Iran must not give up its nuclear shield."[24] Hence, an agreement with Iran that would include irreversible concession on its nuclear shield is impossible.
- Missiles and missile supply for proxies are a strategic layer in Iran's deterrence against Israel. Thus, Iran would never agree to discuss its ballistic missile program or its regional policies, i.e., supporting resistance groups.
- The fact that Iran insists on continuing its ballistic missile development is an indirect proof of its aspiration to achieve nuclear weapons. Even though it is technically possible to develop non-nuclear long-range ballistic missiles, in practice, such development is pointless. Every nation in the world that achieved long-range ballistic capabilities has acquired nuclear weapons.

Iran's Naval Strategy

The Iranian regime has never officially drawn up a military doctrine or a grand strategy, including naval strategic perceptions. One can assume that the naval strategy is under general Iranian considerations regarding the Persian Gulf. The Iranian naval strategy is born out of a need to resist the American presence in the Gulf. Since 2016, Iran adopted an offensive naval strategy and continued employing it in response to President Trump's maximum pressure policy. Furthermore, Iran instituted a forward-defense,[25] which can be described as defense through offense. Mohammad Pakpour, Commander of the

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23 Douglas Barrie. "Explainer: Russia Deploys Iranian Drones", *The Iran Primer*, October 12, 2022.

24 Ukrain, Asr-E Moshakha, na Goftamanaha: "Ukraine, it is an era of missiles, not 'that of talks'", Hamshahri, February 22, 2022.

25 Ali Bagheri Dolatabadi & Mehran Kamrava. Iran's changing naval strategy in the Persian Gulf: Motives and features, *British Journal of Middle Eastern Studies*, July 27, 2022.

Revolutionary Guards Ground Forces, determined that "Iran's doctrine in its essence is defensive, but operatively and tactically it is offensive."[26]

According to leader Khamenei, the Iranian navy is the frontline of state defense.[27] It is unclear what are the implications of those words to the Iranian navy, but there are a few new characteristics of Iranian offensive perceptions in maritime space that can be pointed out:

1. The Revolutionary Guards fleet is based on speedboats or light ships capable of harassing American ships or other national's vessels.
2. Most naval platforms are capable of carrying missiles and air-defense systems that support naval operations.
3. Iranian ships patrol several disputed islands that both Iran and the United Arab Emirates claim.
4. Iranian naval forces conduct exercises that simulate offensive actions. It can be concluded that the naval strategy is evolving from merely defending territorial waters to offensive actions against enemies.[28]

In September 2022, the Revolutionary Guard unveiled a new missile corvette named '*Shahid Solemani*'. This corvette is the first of three catamarans with stealth abilities. Admiral Alireza Tangsiri, commander of the Revolutionary Guards Navy, announced that this vassal has a 9,000 km range; far exceeding the limits of the Persian Gulf.[29] In 2018, the Iranian parliament legislated the Naval Industries Merger Act. According to this law, all the companies that used to manufacture ships, instruments, or equipment intended for the navy were merged into one company named "The Marine Industries Organization."[30]

The Iranian navy along with the rest of the armed forces integrates into the overall asymmetric perception. As such, it has been satisfied with harassing American ships sailing the Gulf, as well as other ships. These recurring incidents follow the same fixed

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26 "Iran's Military Strategy Offensive at Operational, Tactical Levels: IRGC Commander", *Tasneem News Agency*, December 22, 2018.

27 "Emam Khamenei: Niruy-e Daryai Dar Khatt-e Moghadam-e Defa' Az Keshvar Ast" (The Navy is the Forefront Defense of the Country), *Tasnim News Agency*, November 28, 2017.

28 Dolatabadi & Kamrava, 2022.

29 Farzan Nadimi, New Iranian Warship Signals Longer Maritime Reach, More Aggressive Strategy, *Washington Institute for Near Eastern Policy,* September 16, 2022.

30 Ghanun-e Edghram-e Sherkatha va-Tashkil Sazman-e Sanay-e Daryaiy-e Niruha-ye Mosalah, *Majles Website*, January 19, 2019.

script: fast Revolutionary Guards ships approach American battleships.[31] In principle, the Iranian navy can also harass Israeli merchant ships in the Persian Gulf.[32] Due to technical and geopolitical constraints, there is no correlation between Iran's hegemonic ambitions and its existing naval abilities. It should also be considered that Iran's naval training has a role in showcasing; however, they don't necessarily express Iran's true abilities or intentions. In spite of the above, Iran is dedicated to strengthening its naval capabilities in the coming years.

Conclusion

Regardless of the nuclear deal, Iran is convinced of its strategic choices to increase deterrence through the military nuclear program. The Iranian deterrence perception relies on a wide array of various missiles, and Iranian arsenal in the hands of Hezbollah and other Shiite militias which serve as an important layer of asymmetric ability. UAVs are the second component of the asymmetric capability. The war in Ukraine illustrated to Iran that there can be no deterrence without missiles. Judging by unofficial statements of senior Iranian officers, the main lesson from this war is that Iran cannot let go of its nuclear deterrence. Such statements prove that the Iranian nuclear program is in fact a military program. The Iranian navy supports the overall strategy and integrates into the asymmetric perception.

Iran doesn't have a written doctrine or a composed strategy, but statements of its leaders express plainly general principles of actions that the Iranian regime might take. The revolutionary nature of the Iranian regime forces it into a confrontation with the USA and Israel. This makes Iran seem radical and aggressive, in addition to its ambitions in the Persian Gulf and the Middle East; however, Iran's leader is well aware of his nation's various limitations and constraints, whether it be from within or in the international arena. Navigating between two contradicting trends requires, on one hand, credible behavior regarding the confrontation with Israel, and support for Middle Eastern terrorist groups, and on the other hand, trying to avoid immediate escalation.

In light of these principles, the lack of a nuclear agreement or the chance of reaching a new one would not change Iran's behavior. Iran will continue its policy, and in the process devote resources to expanding its naval strength.

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31 Jared Szuba, "Iran's IRGC Navy harassed US ships in Strait of Hormuz, US says", *Al-Monitor*, December 6, 2022.

32 Shlomo Guetta and Motti Elharar, "The Development of the Iranian Naval Branch in Recent Years and the Implications for Israel and the Middle Eastern Countries", in Shaul Chorev and Ziv Rubinovitz (eds.), *Maritime Strategic Evaluation for Israel 2021/22* (Haifa: Maritime Policy and Strategy Research Center, University of Haifa, 2022), pp. 139–163.