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CRIMEA  
PLATFORM

# "Crimean Bastion" – anti-access and area denial (A2/AD) in the Black Sea

October 2021





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# INTRODUCTION

The Black Sea is one of the most important regions for the implementation of Russia's geopolitical plans to establish dominance in the post-Soviet space and to counter NATO forces in the Mediterranean, the Middle East, and North Africa. Russia is building up forces in the peninsula, turning Crimea into a giant Soviet-style military base, and generating military force for projection outside of the region.

After the collapse of the USSR, the Soviet Black Sea Fleet was in significant decline. Out of more than 800 surface ships and submarines in the mid-1990s, there remained no more than a tenth of the surface ships and only one submarine<sup>1</sup>. Many onshore infrastructure facilities of the Soviet Black Sea Fleet came under the jurisdiction of Ukraine and Georgia. Additionally, Bulgaria and Romania have joined NATO. Thus, Russia lost control of about 40% of the Black Sea Coast. For a quarter of a century (1991-2016), the Turkish Navy held dominance at sea, with a combat potential at least twice that of the Russian Black Sea Fleet. The navies of other Black Sea countries were relatively small, each with about 30 surface-to-air combat units, built mostly in the Soviet era. However, the Bulgarian and Romanian navies provided their ships to NATO forces. Ukraine and Georgia have rapidly developed their partnership with the Alliance and were adopting Euro-Atlantic standards. This course of events clearly did not satisfy the Russian Federation, which, after overcoming the economic crisis in the early 2000s, started to implement its neo-imperial policy of restoring control over the former territories<sup>2</sup>.

Russia's priority measures were aimed at creating favourable geopolitical conditions for its security, economy, and ideology. The Soviet geopolitical patterns were revived very quickly, including actions taken to weaken the influence of the West, NATO and the EU on the former Soviet republics that gained independence. The weaker and more controlled these neighbours are, the stronger and more influential Russia becomes.

In this process, Ukraine has become a territory of key importance for Russia. Dominance over Ukraine has ideological and symbolic significance for Russia. To some extent, Russia's continued existence as a state relies heavily on the success of its control over Ukraine. Russia constantly strives to maintain and strengthen its levers of political and economic influence on Ukraine, and to stop Ukraine's rapprochement with the West. The task of "maximum" is to return Ukraine to the "bosom of the empire", to legalize Russia's historical and ethnic origin from the Kievan Rus, to use Ukrainian economic, agricultural and human resources. The "historical unity of the Slavic peoples" has been

1. [https://ru.wikipedia.org/wiki/Черноморский\\_флот\\_ВМФ\\_России](https://ru.wikipedia.org/wiki/Черноморский_флот_ВМФ_России)

2. <https://ukraine-analytica.org/the-black-sea-and-the-baltic-sea-two-seas-one-security-challenge/>

Kremlin's recent media narrative without understanding that freedom had been and continues to be of the highest value for Ukrainians for many centuries<sup>3</sup>. Russia has similar "fraternal expectations" regarding Georgia. The leasing of Crimea to the Russian Federation in 1997<sup>4</sup> and the permission to keep the Russian military contingent on the territory of the Ukrainian peninsula became part of the implementation of this strategy and a precondition for the planned annexation of Crimea.

Russia's intensive militarization of Crimea in 2014-2021 changed the balance of power in the Black Sea region in favour of Russia. During the seven years of the illegal annexation of Crimea, the leadership of the Armed Forces of the Russian Federation gradually strengthened its naval capabilities

in the Black Sea. They increased the number of new ships and support vessels in the region by thirty units, which is significantly more than in the Baltic and Northern Fleets. Such rates of introduction of new ships into the Black Sea Fleet will increase the total strike capacity of Russian surface groups in the Black Sea. In addition, over the past three years, Russia has accomplished the redeployment of its ships to Crimea from the North, Baltic, and Caspian Seas, which further strengthens its capabilities in the region.

Crimea is once again gaining the features of a gigantic Soviet-era military base, whose forces are directed against NATO and individual members of the Alliance, primarily against the United States and Great Britain.



3. [http://kremlin.ru/events/president/news/66182?fbclid=IwAR0Wj7W\\_7QL2-IFInLwI4k1FOQ5RxJAemrvCwe04r8TIAm03rcJrycMSYY](http://kremlin.ru/events/president/news/66182?fbclid=IwAR0Wj7W_7QL2-IFInLwI4k1FOQ5RxJAemrvCwe04r8TIAm03rcJrycMSYY)

4. <https://www.pravda.com.ua/rus/articles/2005/08/15/4391024/>

# THE MAIN PART

## Historical and geopolitical retrospective of the Russian military base in Crimea as a tool for projecting power in the region and abroad

The Black Sea region has a complex ethnic diversity, diverse geographical terrain and environmental conditions. For many centuries it has played the role of a natural barrier to the clash of civilizations. This situation has changed dramatically in the second half of the eighteenth century, when the Russian Empire, seeking access to the Black Sea, intensified its battle for coastal lands.

During the Russo-Turkish War of 1768-1774, Russian troops captured the Crimean Peninsula. The Kyuchuk-Kaynardzhi peace treaty of 1774 declared the independence of the Crimean Khanate. At the same time, the sultan was recognized as the supreme caliph, and this circumstance caused controversy on the part of the Russian Empire<sup>5</sup>.

In 1783, the Russian Empire had annexed Crimea<sup>6</sup>. It was accomplished as the result of a military campaign and the brutal suppression of numerous uprisings by indigenous peoples by the Russian Army and the Cossacks. The same year, the Russian Black Sea Fleet was established. Since its inception, it has remained a powerful tool of Moscow's aggressive policy in the region.

Later, Moscow focused on strengthening its position along the northwestern part of the Black Sea. Under the Treaty of Jassy of 1791<sup>7</sup>, as a result of the Russo-Turkish War of 1787-1791, the territory between the Southern Bug and the Dniester was ceded to Russia, along with the city of Ochakiv. The Sea of Azov became Russia's internal waterway, and colonization of southern Ukraine and Crimea began.

Russia's defeat in the Crimean (Eastern) War of 1853-1856 halted Moscow's expansion in the region for a time. Under the terms of the Treaty of Paris of 1856, Russia lost its navy in the Black Sea and a protectorate over the Moldavian and Wallachian lands. However, during the Russo-Turkish War of 1877-1878, Russian soldiers returned to southern Bessarabia and, in January

1878, reached the outskirts of Constantinople. Only as a result of the deployment of British ships in the Sea of Marmara, as well as the political and diplomatic efforts of Great Britain and Austria-Hungary, the Kremlin abandoned its further offensives<sup>8</sup>.

To counterargue Putin's recent statements revising history and calling part of Ukraine "originally Russian lands"<sup>9</sup>, it is important to emphasize that it was the Russian Empire that invaded Crimea and the northern Black Sea coast with arms without any invitation from indigenous peoples. The Crimean Khanate, a state that had existed for three and a half centuries, was barbarically defeated and destroyed. History testifies to the Kremlin's numerous ill-treatment of the population in the annexed lands, including the bloody suppression of uprisings against Moscow's occupation, the forced relocation of indigenous peoples from their original lands, and the resettlement of those lands with other peoples.

During the bloody world wars of the twentieth century, Moscow gradually took control of most of the Black Sea coastal areas, as well as a number of regimes in North Africa and the Middle East. The Black Sea Fleet of the USSR Navy, with the support of the Black Sea Allies under the Warsaw Pact, was to ensure dominance in the northern, western, eastern and central parts of the Black Sea and to achieve the unimpeded projection of naval forces into the Mediterranean and adjacent Atlantic and Indian Oceans.

The purpose of the projection of forces into the Mediterranean Sea was direct tracking

of Allied ships and submarines "in readiness to launch preemptive strikes on the priority targets of the probable enemy - aircraft carrier strike groups and nuclear submarines." To this end, in June 1967, the USSR Navy 5th Operational Squadron was created, consisting of up to 70-80 warships and submarines with missile and artillery and anti-submarine weapons on board. The squadron was located in the Mediterranean Sea, and its ships were based in the ports of Port Said (until 1972) and Tartus (Syria), as well as at anchors and barrels set up on the shores of the Mediterranean Sea. To provide air support to the Operational Squadron, a mixed aviation squadron of Tu-16R, IL-38, Be-12, An-12 aircraft was deployed at the airfields of Cairo West and Matruh (Egypt), and naval missile forces (up to 96 Tu-16 and Tu-22M3 aircraft) were assigned from the airfields of Crimea. In addition, about two squadrons of Ka-25 helicopters operated aboard the anti-submarine cruisers Moscow and Leningrad.

During the combat service in the Mediterranean, the forces of the 5th Operational Squadron took an active part in large-scale exercises "Ocean" (1970), "Crimea-76" (1976) and others, conducted under the leadership of the Commander-in-Chief of the Navy. During the 1973 Arab-Israeli war, two Israeli planes were shot down by fire from a squadron based in Port Said. In addition, the Black Sea Fleet Marines were ready to land on the west coast of the Suez Canal in the event of Israeli troops advancing. In the early 1990s, due to significant supply constraints, almost all squadron forces were reduced. At the end of 1992, the 5th Operational Squadron was disbanded

5. [https://ru.wikipedia.org/wiki/Русско-турецкая\\_война\\_\(1768-1774\)](https://ru.wikipedia.org/wiki/Русско-турецкая_война_(1768-1774))

6. <https://www.radiosvoboda.org/a/29410425.html>

7. <https://old.uinp.gov.ua/publication/yasskii-mirnyi-dogovor>

8. [https://uk.wikipedia.org/wiki/Пари́зький\\_ми́р\\_\(1856\)](https://uk.wikipedia.org/wiki/Пари́зький_ми́р_(1856))

9. <https://politics.segodnya.ua/politics/putin-nazval-iskonno-russkie-zemli-v-sostave-ukrainy-1376918.html>



(however Russia did not leave its base in Tartus, Syria)<sup>10,11</sup>.

After the collapse of the USSR, Russia lost the occupied or forcibly annexed Black Sea territories, as the former Black Sea Soviet Republics and the Warsaw Pact members became independent from Russia. Russian naval bases, including Sevastopol, stayed in Crimea, but their status has not been determined. The Black Sea Fleet Allocation Agreement 1997<sup>12</sup> gave Moscow the opportunity to use Kyiv's strategic pause (planned until 2017) to strengthen its navy's position in Crimea. The Kharkiv Pact, signed in 2010, allowed Russia to increase its influence in the region and illegally annex the peninsula in 2014.

During the preparation for occupation and actual occupation of Crimea, the Russian Black Sea Fleet acted as a Trojan horse. The fleet leadership tried to demonstrate "fraternal" relations with the leadership of the Ukrainian Navy, generated messages about "friendly fleets". At the same time, the Russian Black Sea Fleet supported Crimean pro-Russian extremist political groups

through the navy media, cultural and other institutions, conducted an active information campaign for the hearts and minds of the Crimean people and, in fact, pursued an annexation policy towards Crimea<sup>13</sup>.

During the dramatic events of February-March 2014, the Black Sea Fleet was involved in various activities to occupy the Crimean Peninsula: coordinating the so-called self-defence of Crimea, setting up checkpoints, leading paramilitary structures to block and seize Ukrainian military units and bases of Ukrainian Navy ships.

In general, the aggressive dominance of Russia's Black Sea policy is not an innovative approach. It has roots in the historical past, was accomplished during the annexation of Crimea and remains active today.

The illegal annexation of Crimea opened the door for the return of the Kremlin's Soviet-era military ambitions, including positioning the Black and Azov Seas as "internal Russian lakes" to project its naval forces into the Mediterranean and beyond.

10. <https://www.rand.org/content/dam/rand/pubs/papers/2008/P7388.pdf>

11. [https://military.wikia.org/wiki/5th\\_Operational\\_Squadron](https://military.wikia.org/wiki/5th_Operational_Squadron)

12. [https://zakon.rada.gov.ua/laws/show/643\\_075#Text](https://zakon.rada.gov.ua/laws/show/643_075#Text)

13. Andrii Ryzhenko, Oleksii Pavliuchik, The history and lessons of Crimea's "breakaway", Center of Defense Strategies, March 2021, p.18-20

# The evolution of Russia's military presence in the Black Sea region and the Mediterranean: from the control of the sea to the creation of an Anti-access/Area Denial (A2/AD)

In the 1970s and 1990s, the USSR Navy focused mainly on a military presence in the Mediterranean to carry out so-called "naval control and strike" missions in important naval areas.

General Gerasimov's doctrine<sup>14</sup> (February 2013) of the new generation warfare, as well as the creation of high-precision long-range cruise missiles in Russia, changed the profile of the Russian Black Sea Fleet mission to "access denial of the naval enemy and destruction of important objects of its ground infrastructure from the sea". Accordingly, the "Fundamentals of State Policy of the Russian Federation in the Field of Naval Activities until 2030"<sup>15</sup>, adopted in 2017, identified the Black Sea region as key in the implementation of Russia's southwestern policy with the following strategic military objectives:

- Creation of a joint military group with dominating military power to ensure Moscow's regional ambitions and effective combat operations in the maritime, ground, air and electronic domains of armed actions in the Black and Azov Seas.

- Blocking and denying access to the Black Sea to naval forces of NATO countries, ensuring the unimpeded projection of Russian forces in the Mediterranean.
- Restoration and maintenance of special infrastructure facilities of the Crimea; naval assets and aircraft intended for the deployment and use of nuclear weapons.
- Forceful expansion in the region, blocking of economic maritime activity of neighbours and the forceful annexation of their coastal territories.

In general, the Kremlin's operational objectives in the region are: first, to oust the United States and NATO's non-Black Sea countries from the Black Sea and, if possible, the Eastern Mediterranean; secondly, to implement the concept of the Black

14. <https://www.politico.com/magazine/story/2017/09/05/gerasimov-doctrine-russia-foreign-policy-215538/>

15. <https://armyinform.com.ua/2021/01/yak-rosiya-zahoplyuye-chornomorskyj-region/>

and Azov Seas as "internal lakes of Russia" by forcible retention of naval forces of the northern, western and eastern parts of the Black Sea within their coastal zone, and Turkey – to the south of the 43rd parallel<sup>16</sup>.

Russia's set of tactical military objectives in its efforts to achieve strategic dominance in the region is quite wide. Some of them have been already achieved and currently maintained at the appropriate level ("boa constrictor" tactics of the Ukrainian Azov economy, ban on the access of non-Russian warships to the Sea of Azov and the area of seized gas production platforms in the Black Sea, control and rapid blockade readiness of maritime transport corridors in the northern Black Sea, the closure of large areas of the Black Sea under the guise of military exercises with missile launches and artillery fire, manip-

ulation and direct disregard for the provisions of international maritime law, etc)<sup>17,18</sup>.

Remarkably, the Russian Federation does not deny and even promotes information about the presence of restricted A2/AD areas around the entire perimeter of its borders. Thus, the Russian version of Wikipedia mentions fourteen A2/AD zones around Russia (without citing a source) and associates this term mostly with the creation of a new generation of Russian and Chinese strike missile weapons<sup>19</sup>. The features of the strategy of no-access areas on land have been present in the actions of Julius Caesar's troops more than 2,000 years ago. Furthermore, the creation of no-access areas at sea was described by the famous British maritime historian Julian Corbett in the early twentieth century (Some Principles of Maritime Strategy, 1911<sup>20</sup>).

16. <https://nuou.org.ua/assets/documents/mor-strat-derzh.pdf>, p. 28-31

17. Andrii Ryzhenko, Igor Kabanenko, Scenarios for Russia's use of its military potential from occupied Crimea, Center of Defense Strategies, March 2021

18. <https://www.dw.com/uk/yak-rosiia-lehalizuie-aneksiiu-u-chornomu-mori/a-57316338>

19. <https://ru.wikipedia.org/wiki/A2AD>

20. <https://babel.hathitrust.org/cgi/pt?id=uva.x000961021&view=1up&seq=25>

## Formation and buildup of the Russian "Crimean bastion" A2/AD

As part of measures to counter any potential attempts to hinder Russia's dominance in the Black Sea and its free access to the Mediterranean, the Kremlin, since 2014, has significantly increased its offensive military assets in Crimea, capable of carrying out various military missions, both open and concealed. As of today, Crimea has become a permanent military base, a kind of unsinkable aircraft carrier.

BAs early as June-July 2014, Moscow began to form elements of the A2/AD zone next to the Russian-occupied oil and gas fields of Odesa and Golitsyn, which belong to the exclusive maritime economic zone of Ukraine. This area is in around-the-clock control of the Russian Black Sea Fleet patrol ships and FSB boats. In 2016, the 41st Brigade of Missile Boats, which is subordinated to the Crimean Naval Base located in Lake Donuzlav in the western part of the occupied Crimea<sup>21</sup>, was assigned to this area (12 missile corvettes and boats with 68 long-range cruise missiles "Caliber-NK" and anti-ship missiles). Based on the range of missiles, these Russian naval assets could directly threaten the coastal communications and port areas of Ukraine, Romania and Bulgaria, as well as navigation in the basin of the Danube River, an important European artery.

Subsequently, in 2014-2019, as part of A2/AD formation, **Russia created a joint strike group consisting of:**

- Six Project 636.3 class submarines<sup>22</sup>, equipped with four Caliber-PL cruise missiles each (total volley – up to 24 missiles), anti-ship and anti-submarine weapons. These low-noise and inconspicuous submarines, nicknamed the Black Hole<sup>23</sup>, are capable of long-term covert submarine missions to defeat surface, submarine, and ground targets over long distances.
- Sixteen missile ships (cruiser, frigate, corvette, rocket boat classes), including six Caliber-NK cruise missile carriers<sup>24</sup>. It is planned to further increase their number.

21. <https://iz.ru/750466/aleksandr-kruglov-aleksei-ramm-evgenii-dmitriev/dobycha-pod-zashchitoi-flota>

22. [https://ru.wikipedia.org/wiki/Подводные\\_лодки\\_проекта\\_636\\_«Варшавянка»](https://ru.wikipedia.org/wiki/Подводные_лодки_проекта_636_«Варшавянка»)

23. <https://tsn.ua/ukrayina/chorna-dira-rosiyskiy-maloshumniy-pidvodniy-choven-virushiv-v-okupovaniy-krim-665011.html>

24. <https://vpk.name/library/f/kalibr-kr.html>



- Bal<sup>25</sup> and Bastion<sup>26</sup> coastal missile systems, equipped with X-35 Uranus and Yakhont (Onyx) anti-ship missiles with a range of surface targets of 120 and 300 (600) km from the Crimean coast (96 missiles in total).

- Up to 36 Su-24<sup>27</sup> bombers based at Gvardiyskoye military airfield.

The total missile volley of this group is up to 234 missiles, of which: "Caliber" missiles – up to 96, anti-ship missiles of various types – 138<sup>28,29</sup>.

**Grouping of air and missile defence forces consisting of<sup>30</sup>:**

- Four anti-aircraft missile systems S-400 "Triumph"<sup>31</sup> (Sevastopol, Evpatoria, Dzhankoy), capable of covering important ground objects, ships and troops from airstrikes at distances of up to 400 kilometres.
- Eight anti-aircraft missile systems "Buk", "Osa", "Pantsir", capable of providing air cover for troops (forces) stationed in the Crimea.
- Ship air defence systems<sup>32</sup> (S-300F "Fort", "Osa-MA", "Kortyk", "Dagger").

In total, this group will have up to 96 target channels and will be able to provide echeloned defence of the Crimean peninsula and adjacent sea areas from massive airstrikes.

**Command and control system of the joint grouping of forces (troops) consisting of:**

- underground bunkers of the Soviet period for the location of control points of Russian troops (forces)<sup>33</sup>;
- activation of the Yakhroma missile attack early warning system (Cape Chersonese, Sevastopol)<sup>34</sup>;
- fixed and mobile radio systems of operational and tactical level;
- coastal system of surface and air surveillance consisting of positional and mobile radars (nine radio monitoring stations along the Crimean coast)<sup>35</sup>;
- a stationary underwater surveillance system in the Black Sea, which includes an anti-submarine sabotage system around the west coast of Crimea, systems installed on gas platforms, and stationary stations Delta-MGA, installed on underwater gas pipelines<sup>36,37</sup>.

25. [https://ru.wikipedia.org/wiki/Бал\\_\(береговой\\_ракетный\\_комплекс\)](https://ru.wikipedia.org/wiki/Бал_(береговой_ракетный_комплекс))

26. [https://ru.wikipedia.org/wiki/Бастин\\_\(береговой\\_ракетный\\_комплекс\)](https://ru.wikipedia.org/wiki/Бастин_(береговой_ракетный_комплекс))

27. <https://ru.wikipedia.org/wiki/Су-24>

28. З брифінгу ВМС України для делегації НАТО у листопаді 2019 року, м. Одеса

29. <https://tsn.ua/ru/ukrayina/gensek-nato-stoltenberg-pribyl-v-odessu-1435053.html>

30. З брифінгу ВМС України для делегації НАТО у листопаді 2019 року, м. Одеса

31. <http://roe.ru/catalog/protivovozdushnaya-oborona/zenitnye-raketnye-kompleksy-i-ustanovki/s-400-triumf/>

32. <https://oborona.ru/product/zhurnal-nacionalnaya-oborona/vchera-segodnya-i-zavtra-protivovozdushnoy-oborony-korablej-vmf-rossii-42466.shtml>

33. <https://ua.krymr.com/a/28090032.html>

34. <https://sevastopol.su/news/rls-yakhroma-zamenit-staruyu-stanciyu-dnepr-na-myse-hersones-v-sevastopole>

35. З брифінгу ВМС України для делегації НАТО у листопаді 2019 року, м. Одеса

The individual components are likely to be connected to the underwater surveillance system "Harmony" of the Russian Ministry of Defence<sup>38</sup>;

- air defence BAIKAL-1ME system of automated control of troops (forces)<sup>39</sup>.

This C2 system is capable of command and control of joint groups of forces, numbering more than 35 thousand troops, deployed up to the 1000-1200 km of the frontline.<sup>40</sup>

**EW system (electronic warfare) consisting of the complexes:**

- MURMANSK-BN<sup>41</sup> – designed for electronic suppression of enemy radio reconnaissance (can blind reconnaissance and sensors of "smart" enemy weapons at a distance of up to 5,000 kilometres).
- MOSCOW-1<sup>42</sup> – Designed for conducting radio reconnaissance (collects information on sources of electromagnetic radiation within a radius of 400 km, including aircraft, homing missiles, mobile and stationary air defence systems, radio transmitters and other objects emitting radio waves).

- KRASUKHA-4<sup>43</sup> – Designed to protect military control points, administrative and industrial facilities. This system is capable of blinding enemy ground radars, AWACS, UAVs, aircraft and spy satellites at a distance of up to 300 kilometres.

- Mi-8 MTPR-1 helicopters<sup>44</sup> equipped with RICHAG-AV stations, designed for electronic suppression of air defence systems and enemy cruise missiles.

Notably, Moscow positions the EW as an "Electronic Bastion" within the Russian A2/AD zone. Russian military strategists and experts believe that electronic warfare capabilities can double the combat potential of its military forces, reduce the losses of aircraft up to six times and warships - up to three times<sup>45,46,47</sup>.

An important aspect of the Russian EW system development is the drift from the conventional former Soviet combat operations to electromagnetic operations in the traditional (land, sea, air) domains and cyberspace. Moscow complements these efforts with changes in organization, doctrine and command structure, training and tactics, as well as the implementation of the latest methods and procedures of

36. <https://ghall.com.ua/2021/07/06/voennaya-lovushka-v-germanii-podderzhali-vyvody-ukrainskih-ekspertov-ob-ugroze-severnogo-potoka-2/>

37. <https://nuou.org.ua/assets/documents/mor-strat-derzh.pdf>, p.38-47

38. <https://bmpd.livejournal.com/2279734.html>

39. <https://ru.wikipedia.org/wiki/Байкал-1>

40. <https://armyinform.com.ua/2021/08/oleksandr-syrskiy-my-buduyemo-plan-yak-shhob-scenarij-strategichnoyi-nastupalnoyi-operacziyi-z-boku-rf-nikoly-ne-zmig-buty-vtilenym-v-zhyttva/>

41. <https://rg.ru/2017/03/10/reg-ufo/v-krymu-voennye-razvernuli-sverhmoshchnyj-kompleks-reb-murmansk.html>

42. <https://dfnc.ru/katalog-vooruzhenij/rls-sprn-i-pvo/1l267-moskva-1/>

43. <https://vpk.name/library/f/krasuka-4.html>

44. <https://rg.ru/2018/03/16/ubijca-elektroniki-mi-8-s-sistemoj-rychag-av-vpervye-zamechen-v-sirii.html>

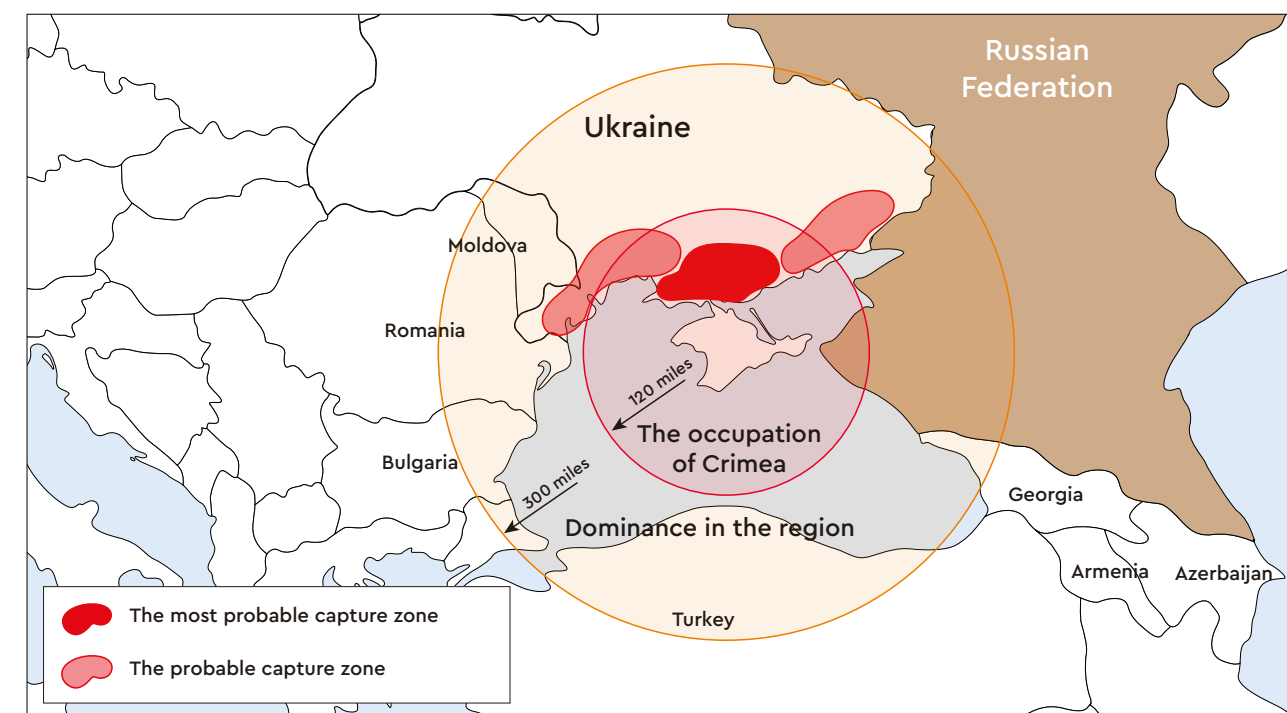
control and command. At the same time, Russia is creating integrated and synchronized systems for managing EW capabilities, which allows not only to ensure the stability of its forces but also to conduct independent and joint EW operations with other military assets at the strategic and tactical levels<sup>48</sup>. To this end, the Baikal-1 automated command and control system was upgraded to the Baikal-1ME version, which promotes situational awareness, strengthens coordination between elements of the joint strike group and forms a highly integrated air defence network. Thus, the main task of the massive military exercises of the Russian Federation in January and September 2020 and in April 2021 was testing the capability of the control system of the "Crimean Bastion" A2/AD zone<sup>49,50,51</sup>.

In September 2016, the Chief of the General Staff of the Russian Armed Forces, General Valery Gerasimov, announced the creation of the A2/AD zone in the Black Sea. Russia's access denial zone in the Eastern Mediterranean was formed later<sup>52</sup>.

At the end of 2019, the formation of a deep-tiered A2/AD zone was completed. It consists of the main area around the Crimean peninsula and three mobile zones - around the occupied platforms in the Black Sea, the Kerch Strait and the Eastern Mediterranean (off the coast of Syria)<sup>53</sup>. From 2020, Moscow is improving the capabilities of these components of the A2/AD zone and its management system.

## Creation of the A2/AD zone by echelons, including the Black and Azov Seas and the Eastern Mediterranean

The echeloned approach of the Russian A2/AD system is based on the principle of forming a "fortress of the fleet". It implies that the impact on the enemy will increase as it approaches the bases of the main Black Sea Fleet forces in the Black Sea (Sevastopol, Feodosia, Novoozernoe, Novorossiysk) and Mediterranean sea (Tartus), as well as important areas (Kerch Strait, the area of occupied oil and gas platforms in the Black Sea, etc).



Pic 1. In 2016, the Russian Federation formed a powerful military group in the Crimea – a tiered area denial zone A2 /AD.

To this end, the Kremlin has deployed the following offensive forces and means, missile defence systems and coastal defence systems:

**In the far zone** (up to 300 miles from the Crimean coast and beyond) – early warning system for missile attack, submarines, warships equipped with cruise missiles "Caliber", long-range radar detection aircraft (DRLV, A-50<sup>54</sup>), strategic strike aircraft (Tu-22M3),

45. <https://dfnc.ru/yandeks-novosti/obzor-sovremennyh-rossijskih-sredstv-reb/>

46. <https://russian.rt.com/russia/article/852733-reb-vooruzhenie-armiya-minoborony>

47. [https://nvo.ng.ru/wars/2019-09-20/6\\_1062\\_reb.html](https://nvo.ng.ru/wars/2019-09-20/6_1062_reb.html)

48. <https://www.vesti.ru/article/1792908>

49. <https://ua.krymr.com/a/nyzka-nevdach-na-shlyakhu-do-sevastopolya/30370304.html>

50. <https://www.radiosvoboda.org/a/news-rosija-krym-vynyshchuvachi/30849466.html>

51. <https://armyinform.com.ua/2021/04/rossijski-vijska-rozpochaly-masshtabni-navchannya-v-krymu-ta-na-kubani/>

52. <https://tass.com/defense/899730>

53. <https://warontherocks.com/2019/01/the-naval-power-shift-in-the-black-sea/>

54. [https://testpilot.ru/russia/beriev/a/50/a50\\_1.php](https://testpilot.ru/russia/beriev/a/50/a50_1.php)



Su-30<sup>55</sup> fighters at advanced airfields, object air defence systems (on the coast) and self-defence systems of warships, long-range EW systems. In total – up to 56 Caliber missiles, up to 48 air-based X-22<sup>56</sup> cruise missiles, up to 2 EW complexes.

**In the middle zone** (120-300 miles from the coast) – submarines, frigate-class warships, corvettes, coastal missile system "Bastion", S-400 "Triumph" systems, front-line aircraft Su-24, Su-30 fighters, Mig- 29 from the airfields of Crimea and Krasnodar Territory, EW systems. In total - up to 60 anti-ship missiles, up to 36 strike combat aircraft with missile and bomb weapons, up to 4-5 EW complexes.

**In the near zone** (up to 120 miles from the coast) – missile boats, coastal missile system "Bal", short-range air defence systems of coastal and ship bases ("Armor", "Buk", "Osa", "Osa-MA", "Kortyk ", etc.), special operations forces, naval aviation (Be-12, Ka-27, Ka-29), coastal surveillance system (radars along the Crimean coast), EW systems. In total - up to 68 anti-ship missiles, up to 72 strike combat aircraft, 74 target air defence channels and up to 8 EW complexes.

This echeloning creates a number of offensive threats and their periodic activation for politico-military reasons. Arguably, Russia's A2/AD naval strength encourages Russia to conduct warship visits to the Black Sea and further aim to deter patrol aircraft of NATO member states. These actions have often led to potentially dangerous military incidents, caused by Russia's paranoid desire to demonstrate to the West the possibility of its force. Following the illegal annexation of Crimea, at least 17 such incidents have occurred in the Black Sea, involving the dangerous flight (simulation of an attack) of Russian warplanes and the manoeuvring of ships, as well as the use of weapons. Such incidents

increase the likelihood of serious military accidents (catastrophes) at sea<sup>57</sup> and will be described below.

These incidents took place in violations of the principles of the Convention of the High Seas (1958) and the UN Convention on the Law of the Sea (UNCLOS, 1982), in or above international waters, during peaceful passage through territorial waters. Russia is using its A2/AD zone capabilities, inciting provocative military activities and using a wide range of hidden and overt security threats in the region to gain an advantage at sea and in the air, and thus they attempt to demonstrate "who owns the Black Sea".

55. <https://ru.wikipedia.org/wiki/Cy-30>

56. <https://missilery.info/missile/x22>

57. <https://www.dw.com/uk/chorne-more-yak-zona-protystoiannia-rosii-ta-nato-napruha-zrostaie/a-58096623>

## Threats of the military grouping of the A2/AD zone against Ukraine, the countries of the Black Sea region and Europe

The most likely short-term threat to Ukraine from a group of Russian forces in Crimea is the military occupation of the southern Kherson region. The reason behind this possible development is to resume water supplies to Crimea from the Dnieper through the North Crimean Canal. The Russian Armed Forces tested this scenario during the strategic exercises in April 2021<sup>58</sup>.

Russia has created a powerful airborne group in the north of Crimea. Together with naval landings and air support, it can capture critical water supply infrastructure of the North Crimean Canal or even establish full control over the canal, starting from the city of Tavriysk (Kherson region). The dam blocking the flow of water to Crimea was built in March 2014 just 15 km from the administrative border with the Crimea. The city of Tavriysk, where the canal begins, is located 80 km from the administrative border with Crimea. The nature of the Russian exercises in Crimea and the composition of the forces signals that the seizure of the North Crimean Canal infrastructure in the Kherson region by Russian troops is possible. In addition, Russia is already applying political and psycho-

logical pressure on Ukraine, accusing it of an artificial humanitarian crisis<sup>59</sup>, preparing the ground for a possible military action "to prevent a humanitarian crisis."

The second threat to both Ukraine and the countries of South-Eastern Europe is a possible amphibious or airborne operation by forces of the Crimean Bastion groups. These forces may number up to 15 different battalion tactical groups for offensive operations. Notably, the 35,000-strong group of Russian troops in Crimea is larger in number than the armed forces of most Balkan countries. In addition, the Russian group has much more modern or upgraded weapons, produced after 2014, including combat aircraft, tanks and artillery.

58. <https://www.radiosvoboda.org/a/viyna-za-vodu-v-krym/31234383.html>

59. <https://www.radiosvoboda.org/amp/krym-problema-vody/31431467.html>

	"Crimean Bastion", Russia	Bulgaria <sup>60</sup>	Croatia <sup>61</sup>	Slovenia <sup>62</sup>	Northern Macedonia <sup>63</sup>
Troops	35000+	31500	15200	6700	9000
Tanks + BBM	40 + 600	100 + 1000	70 + 650	44 + 230	31 + 313
Artillery	220	100 (more than 100 mm)	150 (of all calibres)	18	144
Combat aircraft	123	30	12	–	–

In addition, the Crimean group can be quickly reinforced by troops stationed on the mainland of the Russian Federation. The current total number of ground (land) forces of the Russian Armed Forces along the Ukrainian border is 87,000, up to 1,100 tanks, up to 2,600 armoured combat vehicles, up to 1,100 artillery systems, up to 360 volley fire missile systems, and 18 operational and tactical missile systems. The total number of ground groups of the Russian Armed Forces in the temporarily occupied territories of Ukraine in the Donetsk and Luhansk regions is about 35,000 servicemen, up to 480 tanks, up to 910 armoured combat vehicles, up to 720 artillery systems, up to 200 rocket systems of volley fire<sup>64</sup>.

The Russian "Crimean Bastion" forces pose a serious threat of significant missile strike potential to Ukraine and European countries. There are four ground-based and five naval-based missile systems in occupied Crimea. Additionally, Russian strike aircraft (Tu-22M3, Su-30, Su-24, MiG-29) carry various missile weapons. The total volley already exceeds 800 missiles, designed to fire at sea, air targets and on land. The most serious danger is

posed by missiles with a nuclear warhead, in particular up to 24 Caliber-PL missiles. They can be fired from the Project 636.3 submarines from a submarine (underwater) position. With a radius of 2,500 km (potentially 4,500 km<sup>65</sup>), they can reach most cities on the European continent.

The surface group of the Russian Black Sea Fleet together with the FSB ships can block up to 2 Black Sea areas of 50x150 nautical miles within the A2/AD zone, block economic activities of neighbouring Black Sea ports, all straits and river deltas of Black and Azov seas.

There is a possibility of a full mine blockade of the Black Sea by the mine weapons in the Bosphorus Strait.

The Russian Federation has capabilities to ensure the amphibious landing of one main landing detachment of 18-24 ships and vessels (including supplies) for landing on any unequipped coast in the Black and Azov Seas and one Marine Brigade with armoured vehicles, as well as one landing detachment consisting of 6-8 ships and vessels and a battalion of marines.



The application of missile strikes is possible by the formation of up to 4 ships (rocket-boats) strike groups consisting of 3-5 ships (boats).

The air defence system capabilities of the A2/AD zone allow ships and boats of the Russian Black Sea Fleet to operate under its protection from the air in almost the entire Black Sea. Over the past three years, the actions of groups of Russian surface forces are spreading to the Mediterranean Sea, especially the eastern part.

The geography of the Crimean Bastion's surface forces and the A2/AD zone would expand in case of the establishment of additional logistics points.

At the same time, Russian EW capabilities ensure the functioning of the A2/AD zone. In addition to its classic wartime tasks (suppression of enemy electronic means), they are applied for new hybrid tasks. Since 2017, numerous cases of erroneous satellite navigation signals (so-called GPS spoofing) have been recorded. The US Center for Advanced Defense Studies (C4ADS) has recorded more than 10,000 cases of generating erroneous signals around Russia's maritime borders. Crews of civilian ships and warships sailing off the Crimean coast or the Taman Peninsula receive false information that they are navigating by land or in a completely different part of the sea. Russia actively applies such tactics in the Black Sea. GPS spoofing was observed near the ports of Sevastopol, Kerch, Sochi, Gelendzhik, near Oliva (Crimea)<sup>66</sup>. Such cases were often recorded during the visits of senior Russian officials or during manoeuvres or exercises involving the Ukrainian or NATO Navy. The GPS spoofing is carried out by means of the EW, which is a component of Russian A2/AD forces. It poses a serious threat to the safety of navigation, especially in adverse weather conditions.

60. [https://en.wikipedia.org/wiki/Bulgarian\\_Armed\\_Forces](https://en.wikipedia.org/wiki/Bulgarian_Armed_Forces)

61. [https://en.wikipedia.org/wiki/Armed\\_Forces\\_of\\_Croatia](https://en.wikipedia.org/wiki/Armed_Forces_of_Croatia)

62. [https://en.wikipedia.org/wiki/Slovenian\\_Ground\\_Force](https://en.wikipedia.org/wiki/Slovenian_Ground_Force)

63. [https://en.wikipedia.org/wiki/Army\\_of\\_North\\_Macedonia](https://en.wikipedia.org/wiki/Army_of_North_Macedonia)

64. [https://m.censor.net/ua/resonance/3285362/plan\\_b](https://m.censor.net/ua/resonance/3285362/plan_b)

65. <https://regnum.ru/news/polit/2548879.html>

66. <https://static1.squarespace.com/static/566ef8b4d8af107232d5358a/t/5c99488beb39314c45e782da/1553549492554/Above+Us+Only+Stars.pdf>



# Russian nuclear intrigue in Crimea

A number of nuclear munitions bases and arsenals, transshipment facilities for the supply of nuclear weapons on carriers were built in Crimea during the Soviet era. The Peninsula also had a system for preventing unauthorized actions with nuclear weapons. In the 1970s and 1980s, the Black Sea Fleet kept nuclear munitions onboard combat duty forces – ships, submarines, and naval missile aircraft.

As part of US-Soviet strategic decisions to reduce the nuclear threat, in 1991 George H.W. Bush and Mikhail Gorbachev removed missiles with nuclear warheads from ships and submarines, which was later confirmed by Russian President Boris Yeltsin. Nuclear warheads were seized from Crimean bases and arsenals. At the same time, the systems that allow working with nuclear munitions, as well as preventing unauthorized actions with them, were not dismantled from the naval weapons of the Black Sea Fleet. To this day, these systems are maintained in working order.

In December 2014, interest arose over Russia's return of nuclear munitions to Crimea. It was initiated by a statement by Russian Foreign Minister Sergei Lavrov. In his comments to reporters, he answered positively to the question of whether nuclear weapons could be deployed in Crimea<sup>67</sup>. More questions arose after the media reports on Moscow's restoration of the Feodosia-13

Crimean nuclear base, the Balaklava nuclear storage facility and the Sevastopol Institute of Nuclear Energy<sup>68</sup>.

According to the Main Intelligence Directorate of the Ministry of Defence of Ukraine, nuclear weapons mean warships and strike aircraft have already been deployed by Russia to Sevastopol and at military airfields in Crimea. Nuclear warheads for these means are located in the Southern Military District of the Russian Federation and can be delivered to the Black Sea Fleet ships at the berths of the Novorossiysk Naval Base, and to the aircraft at the airfields of the Southern Military District. At the same time, in case of the Kremlin's direct decision, these warheads can be delivered to Crimea and placed in prepared storage facilities or delivered directly to warships and strike aircraft<sup>69,70</sup>.

Notably, as of today, Russia has no urgent need to deploy a nuclear arsenal in



Crimea. Its conventional capabilities in Crimea guarantee it military dominance on the peninsula. At the same time, storage facilities, training and supply of nuclear weapons of the Southern Military District and the Novorossiysk naval base of the Black Sea Fleet are sufficient to satisfy Russia's Black Sea-Mediterranean nuclear ambition. Moscow must also consider the possible negative consequences of the decision to deploy nuclear munitions in Crimea: both domestic (in the form of possible public protests in Crimea) and international political and military (sanctions and Russia's international isolation).

The Kremlin might use the Crimean context in various formats of Russian "nuclear blackmail" - from further fuelling of the nuclear intrigue (low-level threat) to the actual transfer of the nuclear weapons to Crimea and its deployment on sea carriers (high-level threat). There is a wide range of tools of hybrid influences and rising geopolitical stakes between these levels of threats. Experience proves that Russia uses the nuclear argument strategically in a wider military-political bundle.

67. <https://ru.krymr.com/a/26745439.html>

68. <https://ua.krymr.com/a/yaderna-zbroiia-v-krymu-rosiia-feodosiia-13/31393724.html>

69. <https://www.5.ua/polityka/sekretnyi-obiekt-feodosiia13-abo-iak-meshkantsi-krymu-opynylysia-na-iadernii-dizhtsi-173111.html>

70. <https://ua.krymr.com/a/novyny-krymu-zahorodniuk-yaderna-zbroia/31432537.html>

# Manipulation with international law to support the development and operation of the A2/AD zone

Russia's set of tools to strengthen the access-deny zone around Crimea is not limited to the build-up of its military force. To implement the A2/AD creeping expansion strategy, Russia is hampering freedom of navigation in the international waters of the Black Sea. The Russian Federation manipulates the provisions of international maritime law in order to legalize the status of Black Sea waters around the occupied Crimean Peninsula.

Manipulating the provisions of the SOLAS Convention (1974), Russia declares unreasonably large areas of the sea prohibited for navigation, allegedly, because of combat training and live firing. In August 2019,

Russia blocked almost 25% of the Black Sea waters for three weeks, obstructing international shipping routes between Ukraine, Georgia, Romania, Turkey and Bulgaria<sup>71</sup>. Civilian trade ships were forced



to bypass large sea areas of the declared combat training activities. Russia also continues to detain vessels from different countries entering/leaving the Kerch Strait on their way to Ukraine's ports on the Sea of Azov, Berdyansk and Mariupol. The average delay time of ships bound for Ukrainian ports is up to two days in one direction (much longer than the waiting time for vessels bound for Russian ports<sup>72</sup>).

Russia behaves aggressively if the second country tries to defend its rights to freedom of navigation or flight in the Black Sea. This has resulted in numerous incidents. On November 30, 2016, Russian FSB ships performed dangerous manoeuvres threatening the ship of the Ukrainian State Border Guard Service, which was navigating in the area of gas towers with representatives of the Prosecutor General's Office of Ukraine on board<sup>73</sup>. On February 1, 2017, Ukrainian An-26VVS aircraft was fired upon from small arms and was damaged during the overflight of the Odesa gas field in international waters (exclusive maritime economic zone of Ukraine)<sup>74</sup>. On November 25, 2018, the Russian Federation carried out an armed attack on three ships of the Ukrainian Navy in the Kerch Strait and captured 24 servicemen. Three Ukrainian servicemen were wounded, two ships were damaged. These actions were carried out in serious violation of international mari-

time law and many international treaties, signed by Russia. The Russian Federation illegally detained Ukrainian ships and servicemen for almost a year and released them only under international pressure<sup>75</sup>. In July 2020, the FSB ship Bezuprechnyy ("Flawless") obstructed the participants of the Sea Breeze 2020 exercise. It threatened to use weapons and made illegal demands to the Bulgarian Navy corvette Bodri and the Spanish Navy frigate Alvaro De Bazan to leave the training area, which is allegedly "part of Russia's exclusive economic zone"<sup>76</sup>. On April 15, 2021, FSB boats made a dangerous manoeuvre and threatened with weapons small artillery boats of the Ukrainian Navy, which patrolled the Sea of Azov 20 miles in the direction of the Kerch Strait during Russia's significant reinforcement of troops under the pretext of exercises<sup>77</sup>. On April 17, 2021, the Russian FSB arrested 4 Ukrainian fishermen from the port of Ochakiv, 40 miles away from the Crimean coast, for alleged poaching in the "exclusive maritime economic zone of the Russian Federation." The fishermen were released after being convicted and fined<sup>78</sup>. In April 2021, Russia closed the sea area at the entrance to the Kerch Strait for 6 months for all foreign vessels<sup>79</sup>. On May 9, 2021, FSB ships made a dangerous manoeuvre and demanded the US USCGC Hamilton to leave the area during its navigation in the area of Ukrainian gas plat-

71. <https://hromadske.ua/posts/rosiya-perekрила-ponad-chvert-chornogo-morya>

72. <https://nuou.org.ua/assets/documents/mor-strat-derzh.pdf>, p.89-92

73. <https://www.facebook.com/MatiosAnatolii/posts/719783741506082?pnref=story>

74. <https://www.pravda.com.ua/rus/news/2017/02/1/7134135/>

75. [https://en.wikipedia.org/wiki/Kerch\\_Strait\\_incident](https://en.wikipedia.org/wiki/Kerch_Strait_incident)

76. <https://dumskaya.net/news/korabli-agressora-prepyatstvovali-provedeniyu-uc-121451/>

77. <https://www.pravda.com.ua/rus/news/2021/04/15/7290373/>

78. <https://tsn.ua/ru/exclusive/otpravilis-rybachit-na-kambalu-a-popali-v-plen-podrobnosti-zaderzhaniya-ukrainskih-rybakov-v-ochakove-1770886.html>

79. <https://www.dw.com/en/russia-restricts-movement-of-foreign-warships-in-black-sea/a-57326730>





forms, illegally captured by Russia in 2014<sup>80</sup>. On May 16, 2021, similar illegal demands were made of the ship of the Royal Navy HMS Trent in the same sea area<sup>81</sup>. On June 23, 2021, the Russian Black Sea Fleet and the FSB ships threatened and fired an AK-630 parallel to the course of the Royal Navy destroyer HMS Defender, passing the coast of Crimea in accordance with the right of peaceful passage through territorial waters of Ukraine<sup>82</sup>. On September 23, 2021, Russian ships and reconnaissance aircraft (Su-24MR and IL-20) violated the areas and obstructed the activities of the Ukrainian military during the exercise "Joint Efforts - 2021", which under international law declared these areas closed for missile firing from the landfill in the Kherson region.

Subsequently, the Russians sent missile cruiser Moscow, the flagship of the Black Sea Fleet, to strengthen their forces<sup>83</sup>.

The activities of the Ukrainian Navy and its partners should be coordinated and continued to prove their right to use the Black Sea waters, which certainly restrains Russia's ambitions to expand the A2/AD zone.

There is an important fact of Russia's misuse of the Treaty Between the Russian Federation and Ukraine on Cooperation in the Use of the Sea of Azov and the Kerch Strait of April 2004<sup>84</sup>. The Russian FSB actually took control of the entire water area of the Sea of Azov. They carry out maintenance operations in the joint inland

80. <https://www.pravda.com.ua/rus/news/2021/05/9/7292927/>

81. <https://www.interfax.ru/world/766188>

82. [https://en.wikipedia.org/wiki/2021\\_Black\\_Sea\\_incident](https://en.wikipedia.org/wiki/2021_Black_Sea_incident)

83. <https://www.unn.com.ua/uk/news/1945527-rosiyski-viyskovi-korabli-vlashtuvali-chergovu-provokatsiyu-v-chornomu-mori>

84. [https://uk.wikipedia.org/wiki/Договір\\_між\\_Україною\\_та\\_Російською\\_Федерацією\\_про\\_співробітництво\\_у\\_використанні\\_Азовського\\_моря\\_і\\_Керченської\\_протоки](https://uk.wikipedia.org/wiki/Договір_між_Україною_та_Російською_Федерацією_про_співробітництво_у_використанні_Азовського_моря_і_Керченської_протоки)

waters of the two countries, obstruct and block navigation through the Kerch Strait and drill wells for fresh water without the consent of Ukraine<sup>85</sup>. The Russian Federation extends the powers of its law enforcement agencies and amends the laws in contradiction with the signed international agreements<sup>86</sup>. The military threat of the abovementioned actions for Ukraine is that Russia can contradict the 12 nautical miles of Ukraine's territorial sea and this weakens Ukraine's security. At the same time, Russia gains potential opportunities for covert mining close to Ukrainian shores and opportunities for landings of recon-

naissance and sabotage groups on the Ukrainian coast.

Arguably, due to military superiority and manipulation of international law, Russia gained full control over the Sea of Azov and has turned it into a segment of the A2/AD zone of the Black Sea. In addition, control over the Sea of Azov is important for Russia for the unimpeded transfer of ships from the Caspian Sea across the Volga-Don Canal. In this regard, the potential increase of the Ukrainian Navy surface forces in Azov could become a serious counter to Russia's intentions.



85. <https://ria.ru/20210521/krym-1733315291.html>

86. <https://www.slovoidilo.ua/2021/07/02/colonka/denys-popovych/bezpeka/plyashkove-horlecho-rosiya-znajshla-shhe-odyn-metod-blokvannya-kerchenskoyi-protoky>



# Possible expansion of the A2/AD Black Sea zone

Expansion of the geographical parameters of the Russian A2/AD Black Sea zone is possible in case of capturing important areas of land or the formation of new military bases (supply points) in foreign countries.

Possible capturing of Snake Island (Ukraine)<sup>87</sup> by Russia has been recently discussed in Ukrainian and international media. It will allow Russia to establish full control over the northern and western parts of the Black Sea, as well as potentially affect air traffic within 250 km of the island (including Romania and Bulgaria). Snake Island is located 20 miles east of the mouth of the Danube river. The Bile village was found on the island in 2007 under the jurisdiction of the territorial community of the Odesa region. There is no Ukrainian permanent military contingent on Snake Island as it is demilitarized under an international agreement with Romania. Earlier (during Soviet times), an air defence radio unit was stationed on the island<sup>88</sup>. By taking Snake Island Russia would gain the opportunity to increase the military capabilities, to expand the A2/AD "Crimean Bastion" area, and, additionally, to obtain significant reserves of hydrocarbons at the bottom of the Black Sea.

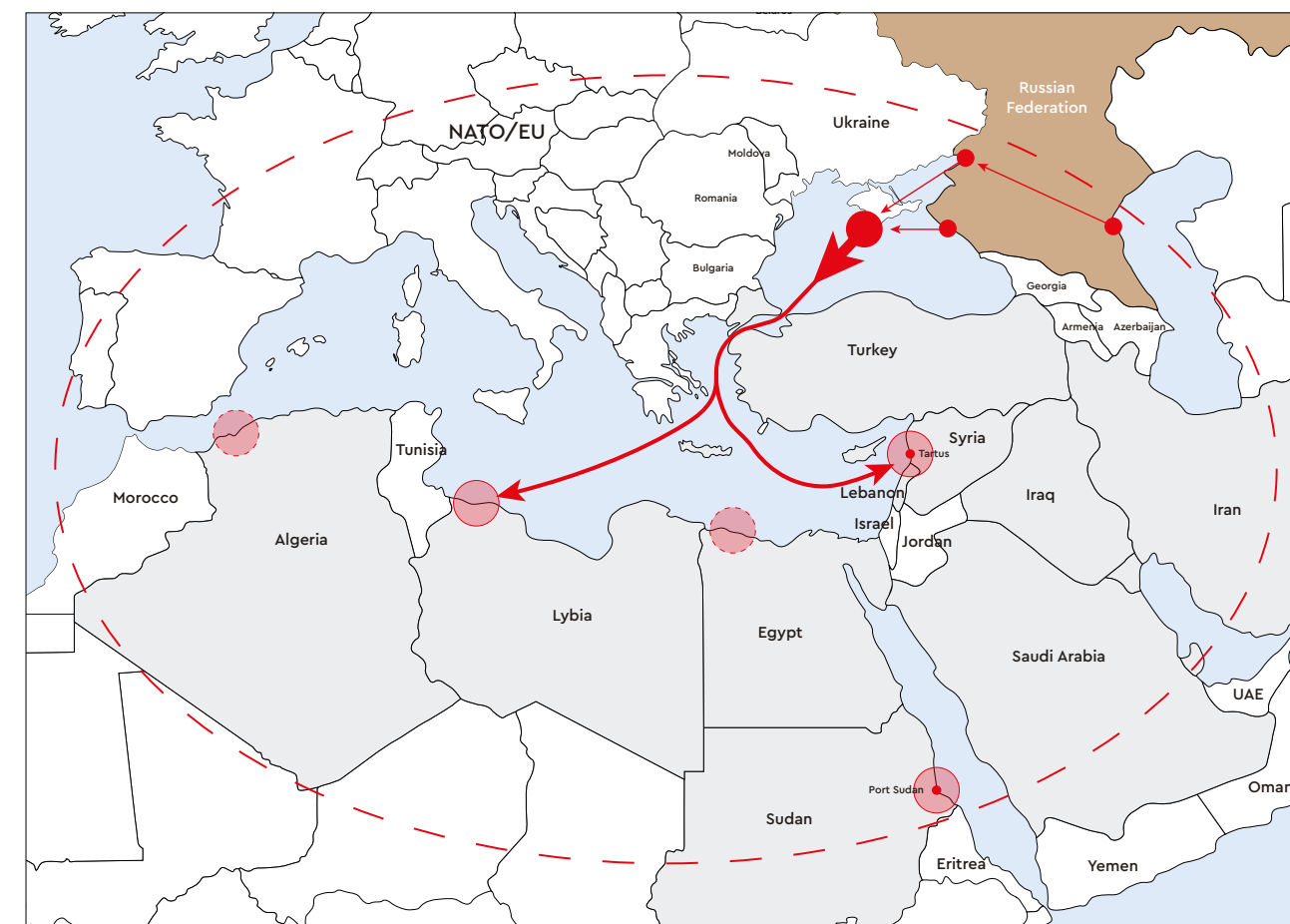
During the last 2-3 years, the Russian Federation has continuously tried to "operationally combine" the A2/AD Black Sea zone and the Caspian region. Caspian flotilla ships repeatedly made crossings across the Volga-Don canal to the Azov, Black and Mediterranean seas. Thus, in June 2018, two Russian Buyan-M missile corvettes passed this route, later served in the Mediterranean for three months<sup>89</sup> and repeated the same route in 2019<sup>90</sup>. In April 2021, the Russian Federation transferred 15 boats, mostly landing craft, from the Caspian Sea to participate in the Black and Azov Seas exercises<sup>91</sup>. Large landing ships of the Baltic and Northern Fleets arrived in the Crimea along with them. This group stayed at Crimea shores until July 2021.

In the last few years, Russia has been interested in expanding its presence in Syria and creating new military bases. In addition to the existing bases in Tartus and Hmeimim, it considers establishing a new Russian military base near Palmyra. A new military

facility of the Russian contingent is being built in the area of Mont al-Mazar (Jebel al-Mazar), about 13 km north of Palmyra. The base will have a helipad. The runway at this facility is currently paved on the east side, its length is about 780 meters<sup>92</sup>.

Since 2015, Russia has been actively expanding military contacts with Egypt. It launched a joint naval exercise, the Friendship Bridge, in the Mediterranean, to practice a wide range of naval operations. In December 2020, for the first time, these exercises took place in the Black Sea, near Novorossiysk and includ-

ed the amphibious phase<sup>93</sup>. There is an assumption that the Russian Federation is interested in using Mistral-type landing ships in amphibious operations. Such ships were designed and are currently being built at the Zaliv shipyard in Kerch (Crimea). Such cooperation could be the sign of resumption of Russia's Soviet-style presence in Egypt. Notably, by 1972 there were about 20,000 military advisers from the USSR in Egypt. The Soviet Union had the exclusive right to use five Egyptian seaports and eight airfields, six of which were under the full control of the Soviet military<sup>94</sup>.



Pic 2. For several years, Russia has been demonstrated its interest in expanding its presence in the Mediterranean and Red Seas, developing existing and creating new military bases.

87. <https://www.radiosvoboda.org/a/agressiya-rossii-na-chornomu-mori/31269239.html>

88. <https://vyikivska-gromada.gov.ua/istorichna-dovidka-selischa-bile-11-03-40-13-03-2018/>

89. <https://rg.ru/2018/06/17/korvety-kaspijskoj-flotilii-s-kalibrami-voshli-v-sredizemnoe-more.html>

90. <https://crimea.ria.ru/20191021/1117508262.html>

91. <https://www.interfax.ru/russia/760925>

92. <https://easaily.com/ru/news/2021/03/05/smi-rossiya-stroit-novuyu-voennuyu-bazu-pod-siriyskoy-palmiroy>

93. <https://kubnews.ru/obshchestvo/2020/11/24/v-novorossiyske-proshli-voenno-morskie-ucheniya-most-druzhby-2020/>

94. [https://ru.wikipedia.org/wiki/Группа\\_советских\\_военных\\_специалистов\\_в\\_Египте](https://ru.wikipedia.org/wiki/Группа_советских_военных_специалистов_в_Египте)



In addition to the expansion of the zone of influence to the east of the Mediterranean (which may increase the A2/AD Black Sea zone in the long run), Russia is gradually regaining its position in the Red Sea. The discussion of establishing a Russian naval base in Sudan started in 2020. It is planned to conclude an intergovernmental agreement between Russia and Sudan for a 25-years lease of the base's infrastructure, which will include the coastal zone, the water area and the berth front zone. The maximum number of Russian servicemen and civilian personnel of the Russian base will not exceed 300 people. Four Russian warships are to be allowed to stay at the same time, including warships with a nuclear-powered system. External protection of the borders of the territory of the MTO point is to be carried out by the Sudanese side. Protection of the borders of the water

area, air defence, internal protection of the base to be carried out by Russian forces. Russia will be able to import and export any weapons, ammunition and equipment. In addition, Russia will have the right to deploy temporary military posts in Sudan to guard its outpost. With a base in the Red Sea, Russia will gain control of the Suez Canal route, which carries about 10% of all world shipping. Russia will secure a permanent presence in the Indian Ocean, lost in the post-Soviet years. From 1964 to 1997, the USSR had a naval base in Berbera (coast of the Gulf of Aden, Somalia), from 1977 to 1991 – Nokra base in Ethiopia (Red Sea). Sudan, along with neighbouring Egypt, is the largest importer of Russian weapons.<sup>95</sup>

Thus, the Russian A2/AD zone may gradually expand to parts of the Indian Ocean.

94. [https://ru.wikipedia.org/wiki/Группа\\_советских\\_военных\\_специалистов\\_в\\_Египте](https://ru.wikipedia.org/wiki/Группа_советских_военных_специалистов_в_Египте)

## Possible challenges for Russia in the development and maintenance of the "Crimean bastion"

Despite the priority of increasing the military strength of the "Crimean Bastion" and the constant strengthening of the A2/AD zone, Russia is facing certain difficulties.

First of all, Western and Ukrainian sanctions limit Russia's ability to increase its military assets, develop and maintain infrastructure in Crimea. The outstanding example to date is the refusal to deliver two Mistral-type landing ships already built by France to the Russian Navy, despite the fact that they have even been occupied by Russian crews<sup>96</sup>. Russia badly needed these ships and began the construction of similar ones six years later. Another example is the suspension of the construction of Projects 1135.6 and 22350 frigates due to Ukraine's refusal to supply Russia with gas turbines<sup>97</sup>. Delivery of three already built 1135.6 frigates was frozen as the result. Two of them were later sold to India (which later ordered the necessary gas turbines from Ukraine). The construction of frigates and other ocean ships of the Russian Navy was suspended for at least five years, due to a problem with ship engines. All these ships are "Caliber-NK" missiles carriers (supersonic

"Zircons" in the future). Due to Germany's refusal to supply diesel engines for Russian Navy boats and ships, Russia decided to replace them with Chinese counterparts. This replacement affected a fairly wide range of ships from corvettes to small boats. This decision was proven wrong later due to the very low quality and reliability of such equipment. Thus, in November 2018, the corvette Vyshny Volochyok (type "Buyan-M") had a serious breakdown of the main engines, Chinese-made diesels, during combat service in the Mediterranean. As a result, the corvette was towed to Sevastopol for repairs<sup>98</sup>. After that incident, Russia decided to develop its own line of diesel engines and gas turbines, but the implementation of this decision is delayed<sup>99</sup>.

Logistics is the second obstacle of the Crimean Bastion A2/AD expansion. It is not keeping pace with the significant increase in troops and the expansion of the geog-

96. [https://www.bbc.com/russian/rolling\\_news/2014/09/140903\\_france\\_refuses\\_mistral\\_delivery](https://www.bbc.com/russian/rolling_news/2014/09/140903_france_refuses_mistral_delivery)

97. [https://www.bbc.com/russian/international/2015/05/150506\\_russia\\_ukraine\\_frigate](https://www.bbc.com/russian/international/2015/05/150506_russia_ukraine_frigate)

98. <https://sudostroenie.info/novosti/24945.html>

99. <https://flotprom.ru/2018/Оборонка348/>



raphy of the A2/AD zone. This is why the logistics issue was one of the focal points of the Russian military exercises in Crimea in April 2021<sup>100</sup>. Despite the efforts of the Russian Federation, the supply problems in offensive operations, especially in the field, remain relevant. The same problems apply to the supply logistics of the Russian Navy groups, which operate at a distance from the existing bases in the Russian Federation. These problems define current Russian policy to expand its network of military bases in the Mediterranean and other regions.

The third obstacle to the expansion of the Black Sea A2/AD zone is the extremely outdated basic patrol aircraft of the Russian Navy, which should cover the situation at sea and operate during hostilities. The outdated Tu-142, IL-20, IL-38 aircraft were developed in the late 1960s. They are constantly absent in the Black Sea region. The modernization of individual elements (for example, IL-38H with a new anti-submarine station) still loses competition with the

Western analogues<sup>101</sup>. The fifteen Russian Be-12 aircraft in Crimea are the oldest in this line (created in 1960), although some upgrades are planned for them. The construction of Be-200 aircraft to replace the Be-12 for the Russian Navy is constantly postponed. The Be-200 was designed in the 1990s as an amphibious aircraft. Processing of its maritime patrol version began in 2016 and took four years. The first Be-200 aircraft, commissioned by the Russian Navy, crashed almost immediately in Turkey on August 14, 2021<sup>102</sup>. The lack of basic patrol aircraft, together with the lack of a single data exchange network (similar to NATO's Link system), severely limits Russia's ability to identify targets at sea. In this case, the Russian Federation relies mainly on radio and electronic reconnaissance data from ships and shore posts, which may be insufficient under certain operating conditions. This was confirmed by the passage of the Ukrainian Navy boats to the Kerch Strait (November 25, 2018) and the passage of the Royal Navy HMS Defender near the Crimean coast (June 23, 2021).

100. <https://ru.krymr.com/a/vtorzheniye-mozhet-byt-v-dvukh-napravleniyakh-pervoye-kasavetsya-vody-na-krym-marchuk/31223339.html>

101. <https://rg.ru/2018/08/20/aviaciia-vmf-poluchit-novye-letatelnye-apparaty.html>

102. <https://tass.ru/info/12130015>





# CONCLUSION

Russia has established an A2/AD zone in the Black Sea region and is constantly improving and expanding it. This is the main condition for the active Crimean Bastion group offensive and Russian projection of force on the Mediterranean Sea and beyond.

The military potential of Russian troops in Crimea is concentrated against NATO and its individual Allies. **The main danger for European countries is the possibility of Russia's use of nuclear weapons** from carriers located in the Crimea or at sea, including hard-to-detect submarines.

**Russia continues to pursue a strategy of gaining control of the former Soviet Union territories, using military and**

**hybrid methods** that include manipulation of international law, restriction and obstruction of freedom of navigation, and suppression of neighbouring maritime economies. Ukraine, along with Georgia and Moldova, is the Kremlin's primary goal in establishing its control over the Black Sea region. **The military strength of the Black Sea A2/AD zone is the main executive tool** in this process.



## The government of Ukraine (together with its partners) has to:

1. **At the political and military levels, to constantly communicate to Western partners (primarily NATO and Partner countries) current and projected threats** related to the militarization of Crimea, in particular the location of nuclear weapons on the peninsula. Provide a comparative analysis of the similar practices of the Russian Federation in other regions, in particular in the Baltic and Barents Seas (Kaliningrad region and the Kola Peninsula). Implement proactive political, military, economic and information measures to counter Russia's creeping dominance in the region. Constantly monitor and interact with foreign partners in the implementation of sanctions against Russia for its aggressive activities in the Black Sea region and eastern Ukraine.
2. **To accelerate the creation and implementation of the Maritime Security Strategy of Ukraine**, which would cover the prospects for Euro-Atlantic development of all maritime sectors. Ensure constant monitoring and prompt decision-making in the field of maritime safety at the highest level of executive power of Ukraine, organize clear intergovernmental cooperation dealing with maritime issues, especially in the security and defence sector. To develop the maritime economy of Ukraine, to provide conditions for the competitive advantage for the development of sea and river ports of Ukraine, the inflow of investments and modern technologies.
3. **To review international maritime agreements with Russia**, that have been violated. Adopt the necessary legislation, in particular, the Law "On the Territorial Sea" to strengthen Ukraine's position to restore the sovereignty of areas of the sea temporarily occupied by Russia. Particular attention should be paid to preventing further Russian influence and blocking freedom of navigation to Ukrainian ports in the Black and Azov Seas. **Establish and develop ongoing cooperation with international institutions responsible for security** at sea and in the region (including the UN, OSCE) and conduct ongoing monitoring of violations of freedom of navigation by the Russian Federation.
4. **To accelerate the security and defence reform with the priority of implementation of modern Western practices** in defence planning and force management in joint operations (with NATO forces). Continue to work with NATO and the EU on security issues in the Black and Azov Seas. Intensify cooperation with NATO and its members (primarily the United States, the United Kingdom, Turkey and Romania) on the exchange of intelligence on the situation in the Black Sea region, in particular on the return of nuclear weapons to the Crimean Peninsula.



5. **To develop Ukraine's naval capabilities to counteract possible Russian aggression in the Black and Azov Seas**, to carry out in the period up to 2025 asymmetric containment in the northern part of the Black and Azov Seas (according to the first phase of the Ukrainian Navy Strategy 2035). Prioritize the development of the "mosquito fleet" to address the tasks of protection and defence of the near sea zone and ports of Ukraine in the Black and Azov Seas. The main efforts will be focused on cooperation with NATO countries (primarily the United States and the United Kingdom) to supply ready-made platforms with the localization of maintenance and production in Ukraine (paid with the budget of the Ministry of Defence of Ukraine and the loans). During this period, to audit the domestic maritime cluster and private businesses for their technical and technological readiness to build modern naval weapons that fully comply with NATO standards.

6. **To continue initiatives with partners to establish a multinational coalition force to maintain freedom of navigation in the Black and Azov Seas.** The tasks might include:

- Patrolling of certain sea areas, conducting surveillance.
- Control over navigation safety.
- Escort and protection of vessels.
- Protection of ports and important marine infrastructure.
- Countering terrorism and illegal sea trade.
- Search and rescue assistance at sea.
- Hydrographic surveys of areas important for navigation.

The multinational coalition forces in the Black Sea may include forces from the Black Sea countries (except the Russian Federation), NATO maritime countries and individual partners (Ukraine, Georgia, Sweden, Finland).

7. To continue active international legal work on **monitoring, prevention, and prosecution in case of violation by the Russian Federation of international humanitarian law on the protection of civilians** (including women, children), illegal use of civilian objects, and use of illegal methods of warfare on or from the territory of the Crimean Peninsula.



## Andrii Ryzhenko

Andrii Ryzhenko retired from the Armed Forces of Ukraine in 2020 with rank of Navy Captain

Having served over 35 years at sea and ashore: aboard surface warships (Kinda, Kara, Krivak III), at Ukrainian Navy HQ on maritime tactics and P&P exercises, as defense and strategic planner, worked on Ukrainian Navy transformation into Euro Atlantic standards and contribution to NATO-led operations and NATO Response Forces.

As planner or coordinator, Andrii Ryzhenko organized and carried out more than 100 multinational Crisis Response Exercises, including the US-Ukrainian naval exercises Sea Breeze, guided and consulted Naval units for different NATO and EU operations, NATO Response Forces and EU Battle groups.

He was a manager at Ukrainian Navy HQ for the development of the Strategy of the Navy of the Armed Forces of Ukraine until 2035 (2017-2018), design of new Navy C2 structure based on NATO principles (2019). In February-March 2020 he served as Assistant Minister of Defense of Ukraine working on Maritime security and Policy on Ukrainian Navy development.

Andrii completed the following educational studies: Sevastopol Naval Academy (1990), International Surface Warfare Officer School in Coronado, CA, US (1996), US Naval War College, Staff Course, Newport, R.I. (2000), Sevastopol Naval Institute with Master degree in military art (2004), US Naval War College, Command Course, Newport, R.I. (2013).



## Ihor Kabanenko

ret. Admiral, Ukrainian Navy

Ihor Kabanenko is a retired Admiral with the Ukrainian Navy. During his naval carrier he occupied positions from missile's boat commander assistant – fire control officer to the Chief of Staff of the Ukrainian Navy. He served as the Military Representative of Ukraine to NATO, Chief of Operations of the Ukrainian Armed Forces, and the First Deputy Chief of Defence.

He retired in 2013. From May to August 2014, Ihor Kabanenko served as the Ukrainian Deputy Minister of Defense, and from August to October 2014 – as Deputy Minister of Defense of Ukraine for European Integration. Ihor defended his PhD thesis in the sphere of risk management and military conflicts resolution. He is the author of a number of publications in defense & security sphere.

Currently he is the president of UA.RPA (Ukrainian Advanced Research Project Agency), which focuses on high-tech solutions and products for defense.

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