CONFLECT 2020 and Beyond: A Look at the Russian Bastion Defence Strategy

Transforming Allied Maritime Potential Into Reality
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1. EXECUTIVE SUMMARY

The convergence of several strategic trends is redefining the global security environment, including significant changes in political, social, technological, economic and environmental areas. In this changing security environment, a resurgent Russia is using all means available to achieve its national goals, expand its global reach, and secure its homeland against external threats.

In many ways, the Bastion Defence reflects Russia’s traditional anti-access homeland defence strategy, now applied to protect both the strategic submarines of the Northern Fleet and access to the Atlantic. Additionally, it protects the Russian Arctic and its right flank in the event of a major conflict or war, denying access to the Murmansk and Kola area and important infrastructure such as harbours, airports, maintenance and logistical facilities, and supports a base of operations for Russian power projection towards Europe, the United States and the NATO Alliance Nations. The main goal of an anti-access strategy is not to engage an opponent but to deter him through physical defence while also leveraging softer instruments of power such as diplomatic, information, and economic means.¹

Over the last decade, Russia has transformed, increasing both the numbers and lethality of its fighting platforms. Russia now has more ships available, has increased the range of air and surface missile systems, has technologically more advanced systems, better trained forces, and several physical military bases in the Arctic that have been modernized. The Bastion Defence currently appears to consist of a geographically and horizontally layered defence, with overlapping military capabilities from a range of different weapon systems covering all domains, which vastly improves the resilience of their defence network. Traditionally, the Bastion Defence has been visualized as consisting of two main sectors: one being the outer area with the aim of conducting sea-denial operations, and an inner area with the aim of sea-control. With the establishment of the new Russian Joint Strategic Command North (OSK Sever) and the military build-up in the Russian Arctic, it should be expected that this sector, with the aim of sea-control, would also include the Russian littoral area, stretching from Wrangel Island, in the East Siberian Sea, to the Norwegian border. Whilst it will take several years before the Bastion Defence reaches its full potential, Russian military capability improves every year.

Today, Russia’s naval force structure, in general, consists of smaller naval vessels than before, but more advanced with improved weaponry. From 2008 to 2017, Russian fleet size increased, especially the number of submarines (+10), corvettes (+18) and fast attack crafts and patrol boats (+118).² There may be several reasons for this development, but Russia is clearly

¹ Sam J Tangredi, Anti-Access Warfare, Countering A2AD Strategies, (Maryland, Naval Institute Press, 2013) 77.
improving its power projection and long-range strike capabilities significantly, for example, equipping many recently commissioned combatants with the *Kalibr* cruise missile, a weapon system able to neutralize both land and sea targets all over Europe. From an economic perspective, smaller vessels are generally cheaper to acquire, and increasing the number of platforms provides defense in depth and increases resilience. Though Russia still maintains high value units or high value targets, they may not all be as strategically important since smaller submarines and corvettes may be able to deliver the same effect on targets. In this respect, Russian weapons and weapon systems are becoming more important than the platform which houses them.

With increased Russian military capability and the nation’s dependence on natural resources, Russia appears to have the ability to undermine NATO cohesion by utilizing a mixture of diplomatic, information, economic and military means. In the unlikely event of a future military crisis or conflict between Russia and one or more NATO nations, it is not impossible that one could become hostages in a trade-off to prevent war. Additionally, to de-escalate the threat of conflict, Russia could deny access to natural resources, putting a stranglehold on potential adversaries. Deterrence, force resilience and flexible response options should therefore be developed. The aim should be to deter Russia from any geographical expansion or exploiting any possible disagreements or different political opinions within the Alliance, in order to reduce the possibility of future crisis and conflict.

Many nations depend heavily on energy supplies from Russia. These resources are plentiful, easily accessible and inexpensive. However, dependence on energy supplies from Russia can be a strategic vulnerability, and therefore it may be desirable to reduce this dependence, diversify own energy supply chains and improve internal energy supply capacity and resilience. The Baltic states, for example, having inherited their energy infrastructure from the former Soviet Union, have had a historic dependence on Russia for natural gas. This has allowed Moscow to charge high prices and made the Baltics’ gas networks vulnerable to Russian influence.

Many Russian units are equipped with long-range missiles, and it appears that Russia in many situations, could have a weapon range advantage. In order to mitigate this advantage, it would be beneficial to acquire more long-range conventional missiles able to reach and attack strategic targets within Russia. The aim would be to deter Russia from military actions, and at the same time have sufficient conventional response alternatives to the increased missile threat from Russia.

The maritime domain has important infrastructure such as communication cables, electrical export cables and oil and gas pipelines, in addition to windmills and oil and gas installations. In
times of tension or war, protection and survivability of this infrastructure and the connected
deliverables should be ensured. Most of this infrastructure is civilian owned, with vested interests
to protect, maintain and repair it. However, during times of tension and war, it is likely that
additional protective means by military resources would be required. In order to achieve a
combined, comprehensive and cross domain foundation for protection of important infrastructure,
close cross-border cooperation and coordination between military and civilian resources should be
established and nurtured.

Russia’s construction of many small and medium size naval units the last decade has
increased resilience and the number of available missile carrying units. Many of these units are
not considered as primary targets for torpedoes and surface-to-surface missiles (they are too
small, too fast or built for littoral operations where missile seekers on standard surface-to-surface
missiles may have difficulties acquiring target-lock-on), and therefore, a diversified and redundant
range of capabilities able to counter the large amount of these smaller weapon-carrying-units
should be acquired or developed.

Russia is modernizing its submarine forces; it is creating tracking dilemmas for NATO with
the introduction of its new submarines. In order to mitigate this increased submarine threat, a
cross-domain comprehensive approach should also consider ways and means to integrate civilian
resources that can also mitigate the threat from submarines during tension and war.

In order to deter potential aggression, it may be expedient to routinely carry out large scale
joint military exercises vice the regular drumbeat of smaller domain specific exercises. Likewise, it
would be prudent to regularly demonstrate an ability to rapidly respond. At the same time, this
supports assurance measures, strengthens cohesion and shows the commitment to support one
another in times of tension and war. Russia, for example, schedules their large-scale military
exercises in a four-year cycle. These exercises rotate annually between the Western (Zapad),
Eastern (Vostok), Southern (Kavkaz) and Center (Tsentr) military districts. In addition, Russia
conducts unannounced military exercise, so called snap-exercises.3

Increased collaboration, coordination, trade and dialogue with Russia could reduce tension
and the potential for future crisis and conflict. Since many European nations are dependent on
Russian natural resources, it is very difficult to carry out effective sanctions or embargoes, and the
Alliance should carefully consider the combined effect of actions taken in response to Russian
malign influence or actions.

As a result of the so-called “peace dividend” following the end of the Cold War, NATO
nations, especially smaller European nations, re-prioritized budgets and executed fiscal policies

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3 Gady, Franc-Stefan. Sept 17, 2019. China Sends Strategic Bombers, Tanks and 1,600 Troops to Russia for Large Military Drill. :
that saw a drastic reduction in military capability. In the maritime domain for example, the number of submarines, frigates and destroyers, and maritime patrol aircraft were reduced, impacting both fighting capability and the requisite resiliency (or redundant capacity) within certain warfare domains such anti-submarine warfare. With the resurgence of the Russian Federation’s Navy and a capable Bastion Defence strategy, future assumptions and acquisitions surrounding NATO’s European maritime forces should be re-examined. Capabilities and force structures must be designed so that they are able to withstand surprise attacks and strategic shock and still maintain fighting capability until reinforcement forces arrive.
2. INTRODUCTION

Purpose
This information paper intends to address challenges the NATO Alliance might face in a 2020 and beyond conflict with Russia, if countering the Russian Bastion defence in the High North.

Scope
This paper will address strategic trends, Russian Naval Policy, the Russian Fleet development, and how these topics might influence or change the Russian Bastion Defence in the High North.

Methodology
The foundation of this report is based on research material, books, reports and articles garnered from governmental and non-governmental organizations, think tanks, academia, international institutions and media.

Background
Fundamental changes in the international security environment, driven by power transitions among states from West to East and power diffusions from governments to non-state actors worldwide, have resulted in increasing instability within the post-Cold War world order. A White House foreign policy based on increased isolationism is eroding the West’s influence and thus shifting power towards Asia, and thereby reducing the West’s ability to influence the agenda on a global scale. The redistribution of political, military, and the economics of geostrategic power, led by the developing world, will most likely affect the former-Soviet space, Middle East, North Africa, and Asia-Pacific regions. These areas are expected to witness more power politics and great power competition resulting in interstate conflict. While countries are increasingly working together to address global challenges such as poverty and climate change, recent years have seen a worrying growth in the potential for confrontation between great powers.4

The confluence of political, social, technological, economic, and environmental trends is redefining the global security context resulting from Russia’s investments in power projection. Some trends driven by technological innovation may offer opportunities to address global problems; however, the synergy resulting from these developments trends has increased complexity, disorder, and uncertainty associated with security conditions labeled the “new normal”5. In this dynamic world, we see access to, and control of, natural resources playing an increasing role in power politics, particularly as the Arctic and the High North region becomes

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5 Ibid.
increasingly accessible. This region will achieve critical geostrategic importance as competition between regional and global actors increases.

The Arctic has so far, been a very peaceful region, recognized as an area of cooperation and governed by agreed international laws and regulations. Most Arctic subject matter experts seem to agree that this is not likely to change in the near future, but increased access, increased importance, and future economic prospects of the area, could have a negative impact. NATO should proactively assess potential tension between nations and great power competition and develop mitigating actions to crisis or conflict in the Arctic region. Supporting this approach, Marie-Anne Coninsx, the European Ambassador at large for the Arctic, said during the 2018 Arctic Circle conference: “What happens in the Arctic affects the European Union and the World”.

In this era of great power competition, we see a resurgent Russia focusing resources in order to modernize its armed forces. After witnessing the Gulf Wars and NATO’s operations in Kosovo, Russian military leaders have taken note of the changing characteristics of war in the last decade. We have seen that Russian forces have gone through radical changes and improvements to reduce the technological advantage enjoyed by western nations. Russian forces have become more modern and technologically advanced and more professional. They have increased their mobility, range and sophistication of their weapons systems, which are now combat proven in conflicts such as Georgia, Crimea and Syria. These changing environments rebalance power projection and the structure of the Russian Bastion Defence, potentially threatening certain NATO members and partner nations’ security environment.

Fundamental changes in the international security environment, driven by power transitions among states and power diffusions from governments to non-state actors worldwide, have created strategic shocks resulting in increasing instability within the post-Cold War world order. These shocks have contributed to greater public discontent and increasing challenges to governance. As power is shifting away from the West toward Asia, the West’s ability to influence the global agendas is expected to diminish.

For the past two decades, the world has also been experiencing a period of significant changes in political, social, economic and environmental areas substantially influenced by rapid developments in technology. The confluence of several political, socio-economic and technological trends is redefining the global security context resulting in complexity, disorder and uncertainty that has become a new normal.

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6 Ibid
9 Ibid.
The redistribution of political, military, and economic aspects of geostrategic power, led by the developing world, will likely affect the former-Soviet Union areas, the Middle East, North Africa, and the Asia-Pacific Regions. As the global community emerges from the grips of COVID 19 and its crushing impact on the world’s trade and commerce, it is likely that that there will be a further exacerbation of power politics amongst great powers. This increased nationalistic competition to protect economies in a worldwide depressed market could increase strains in relationships and potentially possibly increase the risk for confrontation between great powers or through proxies.\textsuperscript{10}

Today, these trends are generating strategic impacts that are converging in the Arctic. The migration to a bi-polar or even multi-polar world order is evident in the Arctic where Chinese and Russian footprints now grow more influential every year. Northern European NATO members’ reduced defense spending across recent decades, combined with the United States’ focus on the Middle East and Asia, has made NATO relatively weaker in the region. According to the NATO’s Allied Command Transformation’s \textit{Strategic Foresight Analysis}, new and alternative global governance institutions, championed by emerging and resurgent powers, are likely to challenge the existing international organizations as they seek a voice in decision-making structures.\textsuperscript{11}

\textsuperscript{10} Ibid
\textsuperscript{11} Ibid.
3. STRATEGIC TRENDS

Climate Change

Climate change is gradually melting the polar ice and in the coming decades, the Arctic Ocean will be increasingly accessible and more broadly used by nations seeking the region’s abundant resources and trade routes. The average temperature has increased around 2-4 degrees Celsius over the last 100 years and the associated significant retreat of sea ice has made previously unreachable areas now open for maritime access several weeks each year. The summer minimum is only 60 per cent of what it was in the 1970s. Some forecasts point to an ice-free North Pole between 2030 and 2050, with some experts even suggesting ice-free summers in the 2020s.

The Arctic region has abundant renewable resources like fish and shellfish, and non-renewable resources like oil, gas, metals, minerals and rare earth elements. Currently, the predicted rise in oil and gas developments have been delayed by lower prices, but as the ice continues to recede, it is evident that we will see more activity in the Arctic region as access to exploit these resources becomes less expensive.

As a result of increased oil and gas exploration efforts, increased traffic through the Northern Sea Route, and the increased access to the Russian Arctic coastline, we observe a more challenging operating environment for the Russian Northern Fleet due to scope, scale and reduced cover. Russia has a very long Arctic coastline, and with climate change reducing barriers to access, this coastline suddenly becomes vulnerable and unprotected. For Russia, it may also be more difficult to protect its second-strike capability. The Northern Fleet, with its strategic submarines, is the cornerstone of the Russian Navy, and if the protective ice-cover disappears together with increased traffic density and industrial development in their normal operating areas, new or other protective solutions might be necessary.

Technological Development

Artificial Intelligence

Within the next decades it is likely that artificial intelligence will play an increasingly important part in military operations. According to the UK Ministry of Defence’s Global Strategic Trends (GST), funding of artificial intelligence start-up companies increased from USD 0.1 billion in 2009 to USA 1.2 billion in 2015. Artificial intelligence, together with increased processing power could, for example, have practical applications, such as identifying the best route or angle

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12 Combined Joint Operations from the Sea Centre of Excellence. 2019. NATO must address the increase in Russian littoral capability to avoid easy picking if Russia enforces the Bastion Defence. CJOS COE 2020 Cutting the Bow Wave. Norfolk. USA. 2020.
of attack for a surface-to-surface-missile in order to penetrate an opponent’s defensive systems, improved weapons and sensors weather impact calculations or increase the speed and accuracy of gathering, analyzing and distributing large amount of data and intelligence.

An example from a Norwegian research project underlines the possibilities of increased processing power. When analyzing large amounts of historic Automatic Information System data (AIS) from transponders mounted on civilian ships, the researchers were able to identify Russian civilian shipping engaged in espionage along the Norwegian coastline. Similarly, if Russia gathered, stored and analyzed large amounts of AIS data from NATO’s naval ships, they might also gain a lot of valuable information. Naval ships can turn AIS off; however, very often AIS is active in order to increase safety at sea and increase the civilian shipping awareness of military presence and activities. If Russia, over a prolonged period, collected AIS data along with other open source intelligence and data from satellites, it could parse out standard navigational tracks, normal positions for refueling and resupply, and most probable deployment and operating areas.

In crisis or conflict, information such as this is invaluable; enhanced data like this may be used for target tracking and increased maritime domain awareness, thus providing an adversary both with soft and hard kill courses of action.

**Undersea Infrastructure**

The maritime domain hosts some of the most important infrastructure in the world like communication cables, electrical export cables and oil and gas pipelines. Very often overlooked, the undersea communication cables handle almost all the world’s intercontinental digital traffic. According to the Submarine Telecoms Industry Report (STI-R), in the timeframe 1987 to 2012, almost $57 billion was invested to establish the network. The world continues to consume increasing amounts of data, with bandwidth demand projected to almost double every two years in the foreseeable future. In the period 2005-2011, the submarine fiber industry added an average of 33 percent capacity annually on all major submarine cable routes, including upgrades and new system builds. In 2016, the undersea communication cables spanned around 1.84 million kilometers with plans of an increase to around 2.1 million kilometers in 2018 and a capacity of 3,051 terabyte/second, increasing capability and maybe resilience, but it is also more infrastructure to protect.

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Worldwide, it is estimated that 95 percent of all internet traffic runs through undersea communication cables; for the European Union, around 70 percent of their natural gas demands are transported in undersea pipelines from Norway and Russia. In times of crisis or conflict, protection of vital infrastructure such as communication cables, electrical export cables and oil and gas pipelines might be of the outmost importance. With this in mind, and the fact that the Russian forces appear to have the resources, tactics and doctrines for attacking an opponent’s vital infrastructures, the need for counter or preemptive protective capabilities across the NATO Alliance is self-evident.

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4. POLICY FOR RUSSIAN NAVAL OPERATIONS UNTIL 2030

The Russian Naval Policy document from 2017, called The State Policy of the Russian Federation in the Field of Naval Operations (hereinafter called the Russian Naval Policy or RNP), set forth the goals, objectives, and priorities until 2030, including the role and place of the Russian Navy.\(^{20}\) Russia is emphasizing naval operations and power projection to both establish and maintain favourable conditions on the world's oceans to support sustainable development and implement strategic priorities of their national security policy.

The RNP further states that the Russian Navy should ensure defence of the national interests of Russia and its allies on the world's ocean by military means, to maintain military and political stability at the global and regional levels, and also deter aggression against Russia from the sea.\(^{21}\) The RNP lists several risk and threats, including the aspiration of the United States and its Allies to dominate the world's ocean including the Arctic.\(^{22}\)

It further states that Russia will not allow significant superiority of naval forces from other states over the Russian Navy and that it will strive to ensure its position as the second most combat capable navy in the world.\(^{23}\) Following a number of statements of requirements for the Russian Navy, there is a definite focus on Russia's desire to establish a balanced naval structure with a high quality, new conventional naval force equipped with modern weapons, and maintain the combat potential of the strategic nuclear force at a high level.\(^{24}\)

All these aspects of the RNP increase the probability for increased rivalry and military competition between NATO and Russia, particularly considering increased military spending by NATO nations, implemented military assurance measures and the NATO Command Structure Adaptation. These actions may increase tension and further motivate Russian military build-up.

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\(^{22}\) Ibid.

\(^{23}\) Ibid.

\(^{24}\) Ibid.
5. **GENERAL RUSSIAN NAVAL DEVELOPMENT**

Around 2007, Russia launched an extensive modernization programme across its armed forces. The Russian Navy got its fair share and the equivalent of 177 billion USD in funding. Many scholars would argue that Russian ambition is to establish or re-establish a large blue water navy such as it had during the Cold War. At first blush, it might seem like the case, but in fact, since 2008 the largest increase of naval units is in medium and smaller classes of ships, boats, and crafts. These smaller vessels are better suited for brown water or littoral operations rather than blue water operations as seen in the North Atlantic, weather-wise, one of the most demanding and difficult areas for naval operations on the globe.

From 2008 to 2017, the Russian Navy increased its number of corvettes from 50 to 68 units, its number of submarines from 61 to 71 units of different types, and the number of Fast Patrol Boats (FPBs), Fast Attack Crafts (FACs) and armed Patrol Boats (PBs) from 172 to 290 units. In contrast, during the same period, the number of cruisers, destroyers, and frigates decreased from 32 units to a total number of around 25 ships.

Additionally, the Russian Navy has enhanced its power projection and long-range strike capabilities significantly, equipping many of their recently commissioned units with the *Kalibr* naval land-attack cruise missiles. This weapon system has a claimed range of approximately 2500 km and gives Russian forces in the North Atlantic, the Norwegian Sea or even Bastion Defence areas in the High North, precision strike capability deep into NATO territory. The *Kalibr* missile is also combat proven in operations in Syria making it not a potential but a proven threat.

According to a Finnish study, *the Russia of Power*, the primary mission of the Russian submarine forces is to destroy adversary submarines, aircraft carriers, major surface vessels, attack convoys, provide target data for other assets, repel landings, and destroy an opponent’s coastal oil and gas production systems. Recent Russian actions, as indicated by training and exercises, reveals a firm commitment to enforce the Russian Bastion Defence, in order to protect their strategic submarines.

In August 2019, around 30 Russian warships from three different fleets, conducted the largest Russian naval exercise since the Cold War, operating principally off the coast of Norway.

On October 30, 2019, the Norwegian newspaper *Verdens Gang*, issued an article stating that Russia had initiated the largest submarine operation since the 1980s, involving around 10

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submarines. According to the article, two Russian Sierra class submarines with titanium hulls were operating west of the Norwegian Bear Island, and two multi-role submarines and one attack submarine were operating between Bear Island and the Norwegian mainland, evidently closing access to the Eastern part of Barents Sea where they had deployed strategic submarines. Most of the information in this article was later confirmed by the Norwegian National Joint Headquarters.

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6. RUSSIA’S TECHNOLOGICAL DEVELOPMENT

New Submarines

The *Yasen* class (Project 885 *Yasen* and the Project 885M *Yasen-M*) are a series of new nuclear-powered guided missile submarines. The design is based on both the *Akula* and *Alfa* class submarines and will replace most Soviet era nuclear attack submarines. The first of class, K-329 *Severodvinsk*, was commissioned in 2013. *The Yasen* class measures 390 feet long and has a displacement of 13,800 tons. Armament consist of four 5,333mm torpedo tubes and four 650mm torpedo tubes, which can accommodate homing torpedoes and 3M54 *Klub*-missiles.

In addition, it has 24 vertical launch missiles tubes, each capable of carrying P-800 *Oniks* supersonic anti-ship cruise missiles. According to the U.S. Naval Institute’s Combat Fleets of the World, *Severodvinsk* has a 200-megawatt nuclear reactor, which provides it a speed of 16 knots surfaced and perhaps as much as 35-40 knots submerged. Expected maximum submerged silent speed is 20 knots. Even though production of the *Severodvinsk* started back in 1993, it is considered to have a very low acoustic signature and is projected to be very difficult to track by NATO assets. Many scholars even regard the *Severodvinsk* as being on par with the latest Western submarines and with its considerable weapon arsenal, must be a viable threat which NATO must counter.

The *Borei II* class nuclear powered ballistic missile boats (Project 955), are replacing the Soviet era *Delta III*, *Delta IV* and *Typhoon* classes of submarines. Currently four units have been built, with two delivered to the Pacific Fleet and two to the Northern Fleet. The first unit in the Northern Fleet, *Yuri Dolgorukiy*, entered service in 2013 with the second unit, *Knyaz Vladimir* delivered to the Northern Fleet June 1st, 2020. A total of eight *Borei* class submarines are planned. *Yuri Dolgorukiy* is equipped with 16 RSM-56 *Bulava* ballistic missiles, while the other may have up to 20 missiles where each can carry up to ten nuclear warheads. *Yuri Dolgorukiy* also has six 5,333mm torpedo tubes for launching RPK-2 *Viyuga* (SS-N-15) missiles which can carry a weapons payload of a Type 40 torpedo or a 90R nuclear depth charges.

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Auxiliary Submarines

Russia operates a small force of nuclear-powered auxiliary submarines. These submarines can operate at depths of several thousand meters.\(^{35}\) One of these submarines, the *Losharik*, has been described as a “spy submarine” capable of conducting multiple clandestine missions. According to an article by Michael Birnbaum in the Washington Post, Russian submarines have been operating frequently near undersea cables.\(^{36}\)

In the same article, there is a quote from U.S. Navy Rear Admiral Andrew Lennon, Commander of NATO’s submarine forces, saying that Russia has taken an interest in NATO nation’s undersea infrastructure. The Russian auxiliary submarines can most likely conduct oceanographic research, underwater intelligence gathering and damage or destroy underwater infrastructure such as communication cables, electrical cables and oil or gas pipelines. Since around 95 percent of all internet traffic runs through undersea communication cables and around 70 percent of the European Union demands for oil and gas are transported via pipelines, in times of crisis or conflict, NATO and EU members are vulnerable to attack and sabotage on the undersea infrastructure.\(^{37}\)

Underwater Drone

According to sources in the Pentagon, Russia conducted the first launch-test of the *Poseidon* underwater drone, November 27, 2016.\(^{38}\) A mother submarine initially carries the *Poseidon*, which is a nuclear weapon, and it is estimated to be able operate at a maximum speed of 100 knots. If it is detonated close to populated areas, the results could be devastating. The National Interest reported that Russia had started underwater testing of its *Poseidon* thermonuclear torpedo.\(^{39}\) As reported by Michael Peck in 2019, the *Poseidon* is an 80-feet-long nuclear-powered submersible robot that is essentially an underwater ICBM. It is designed to travel autonomously across thousands of miles, detonate outside an enemy coastal city, and destroy it by generating a tsunami.
Surface-to-Air Missiles

In 2018, Russia tested the S-500 surface-to-air missile system, successfully striking an airborne target 299 miles away, the equivalent of 481 km.\footnote{Macias, Amanda. 2018. Russia quietly conducted the world’s longest surface-to-air missile test. CNBC. 2018. Downloaded March 2020: https://www.cnbc.com/2018/05/24/russia-quietly-conducted-the-worlds-longest-surface-to-air-missile-test.html} This is perhaps the world’s longest successful surface-to-air missile engagement test. Russia claims that the S-500 is capable of intercepting hypersonic missiles, stealth aircraft, and drones. It is also expected that Russia would make a naval version of the missile system.\footnote{Olsen, Alf Ragnar. 2018. Russerne tester S-500 luftvern. AldriMer.no. 2018. Downloaded March 2020: https://www.aldrimer.no/russerne-tester-s-500-luftvern/} The S-500 missile, under development since 2007, has been delayed several times. Nevertheless, according to the Russian Deputy Prime Minister Yuri Borisov, in a 2019 statement, several successful tests have been conducted and the missile is on schedule for deployment earlier than expected.\footnote{Macias, Amanda. 2019. Russian CEO who oversees the Kremlin’s military-industrial complex says the S-500 “will enter service very soon”. CNBC. 2019. Downloaded March 2020: https://www.cnbc.com/2019/07/03/russian-ceo-who-oversees-kremlins-defense-industry-s-500-ready-soon.html}

In an article from Sputnik News, Lt-Gen Viktor Gumenny, the Deputy Commander of Russia’s Aerospace Forces, revealed that the first S-500 system would likely be put into service around 2020.\footnote{Danichev, Alexei. 2017. Russian Aerospace Forces to Receive S-500 Air Defence Systems in several Years. Sputnik News. 2017. Downloaded March 2020: https://sputniknews.com/military/201710231058470825-s-500-prometey-triumf-m-air-defense-system/} According to Sebastian Roblin at the National Interest, the S-500 system intends to serve as a high-altitude anti-ballistic missile system for home defence; its very long range could make it usable for A2AD and anti-satellite tasks. Fully operational, it represents a valuable component in deterring NATO air dominance, especially if it can target stealth aircraft like the F-22 and F-35, as some sources and US officials claim.\footnote{Keck, Zachary. 2018. Russia’s S-500, the Ultimate Missile Defense System. The National Interest. 2018. Downloaded March 2020. https://nationalinterest.org/blog/buzz/russias-s-500-ultimate-missile-defense-system-115161}

Long-Range Missiles

According to the Norwegian Intelligence Service Annual Report 2020, one of the leading trends within Russian weaponry is the development of sea and air launched long-range cruise missiles.\footnote{Norwegian Intelligence Service. 2020. Focus 2020 The Norwegian Intelligence Service’s assessment of current security challenges. Norway. 2020.} These missiles are fitted on a growing number of platforms, have a range of several thousand kilometers, and are emerging as an important part of Russian non-nuclear deterrent structure. Interestingly, it was a new land-based cruise missile being deployed which was the main cause of the USA withdrawal from the INF Treaty in August 2019.

During an October 2015 attack on terrorist groups operating in Syria, Russian vessels in the Caspian Sea fired a total number of 26 Kalibr missiles from approximately 1800km. These missiles, fired from frigates, corvettes and a submarine reportedly have a maximum range of 2500 km. They may be able to threaten and attack targets all over Europe.\footnote{MissileThreats. 2020. Kalibr at a Glance. Downloaded March 2020: https://missilethreat.csis.org/missile/ss-n-30a/}
The 9M730 Burevestnik is a Russian inter-continental cruise missile with nuclear propulsion. According to a Russian newspaper, the Nezavisimaya Gazeta, the Burvestnik is a nuclear rocket with a solid-fueled booster.\textsuperscript{47} During flight, a ramjet or a turbojet engine likely drives the missile. Accuracy and reliability of the missile is still in question. According to a report from CNBC, five tests have been conducted with the longest flight so far at about 35 km.\textsuperscript{48} This may indicate that the nuclear propulsion system did not ignite. High costs and unsuccessful tests might lead to a reduced scope or termination of this missile programme.

R-28 Sarmat is a liquid fueled inter-continental ballistic missile that has been under development since around 2009. Its estimated maximum speed is around Mach 20.7 or 7.1 km/s, and its estimated range is 10,000 to 18,000 km.\textsuperscript{49} The first prototype of the missile was completed in 2015 and the missile was originally scheduled to enter service in 2018 with 50 missiles on order. However, there have been some delays. At least five missile tests are scheduled in 2020 and it is expected that the Sarmat will enter service in 2021.

**Hypersonic Missiles**

Russia has stated that it is developing hypersonic weapon systems in order to ensure that they are able to penetrate any air and missile defences.\textsuperscript{50} In March 2018, Vladimir Putin announced the development of two of these systems, the Avangard hypersonic glide vehicles and the Kinzhal hypersonic air-launched ballistic missile.\textsuperscript{51}

The Avangard has a reported range of more than 6,000 km. It weighs around 2,000 kg and can carry a conventional or a nuclear payload.\textsuperscript{52} The Avangard is transported to its apogee by a ballistic missile, and then as a boost-glide weapon, it separates from its rocket, and continues towards the target. According to a speech by Vladimir Putin, the Avangard is maneuverable and can maintain an atmospheric speed of up to Mach 20 (6.28km/s).

The Kinzhal hypersonic missile has a claimed range of around 2,000 km, (greater than Mach 10) and the ability to conduct evasive maneuvers.\textsuperscript{53} Deployed on a MIG-31B aircraft, it can carry both a conventional and a nuclear warhead and is designed to target missile defence systems, and missile defence warships.\textsuperscript{54} Deployed within the Russian Bastion Defence bubble in

\textsuperscript{49} CSIS Missile Defense Project 2020. Downloaded April 2020: https://missilethreat.csis.org/missile/rs-28-sarmat/
\textsuperscript{50} TASS Russian News Agency. 2018. Downloaded March 2020: https://tass.com/defense/992297
\textsuperscript{52} https://missilethreat.csis.org/missile/avangard/
\textsuperscript{53} UPI News. Unia, Daniel. 2018. Russia test-fires Kinzhal hypersonic missile. 8141520791270/?ur3=1
the High North, the *Kinzhal*, with its claimed indefensibility, is essentially providing a strong sea denial capability in the Norwegian Sea and the Barents Sea.
7. **BASTION DEFENCE**

**History**

According to Professor Rolf Tamnes from the Norwegian Institute for Defence Studies, the traditional role of the Russian Navy was to support Russia’s ground forces. This began to change in the 1950s with the build-up of a large attack submarine force and from the 1960s, large investments were made in order to build a blue-water fleet, including an ambitious strategic submarine procurement program which could enable power projection and support political goals around the world. 55

Initially, the Soviet Union submarines had limited missile range and they needed to penetrate the heavily monitored and protected Greenland-Iceland-United Kingdom line (GIUK gap) in order to threaten the US. With the introduction of inter-continental missiles on the Delta and Typhoon class submarines, this changed. Gradually, the operational pattern changed from patrol areas off the US coast with long transits, to operations within protected areas in local and Arctic waters.

The main goal of the Soviet Union’s Navy changed to focus on protecting the strategic submarines and vital infrastructure, with a form of layered defence. The Soviet concept of protecting their strategic submarines eventually became commonly known as the Bastion Defence. It originates most likely from a series of articles published in “Navies in War and Peace” in the 1972-73 issues of *Morskoi Shornik*, the professional journey of the Soviet Navy.

Sergei G. Gorshkov, then Admiral of the Fleet of the Soviet Union, authored these concepts and Western scholars concluded that the Soviet Union had given up on the earlier priorities of fighting the Alliance’s SSBN fleet in favor of protecting its own SSBN force in home waters. 56 The strategic framework centers on Russian ambition to conduct sea denial operations towards the GIUK gap and thus, establish sea control across mainland Norway, Bear Island, Svalbard and perhaps as far south as the Vestfjorden area in Norway.

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Bastion indicates the patrol area of Russian strategic submarines.

Darker shaded area: Ambition of Control

Lighter shaded area: Ambition of denial.
Concept

Defending strategic submarines is still likely to be the main purpose behind the Bastion Defence concept. Additionally, it also ensures the Northern Fleet access to the Atlantic and protects the Russian Arctic and the Russian right flank in a major conflict or war. In addition, the Murmansk and Kola area also encompasses important harbours, airports, maintenance, and logistic facilities. With the receding ice-coverage, the Russian Arctic also has increased its economic importance with many new oil and gas fields discovered, important oil and gas infrastructure development, and increased traffic through the Northern Sea Route (NSR).

The development and build-up of military infrastructure along the NSR serves more than one purpose. It increases surveillance along the NSR, adding a layer of defence installations with radar sites, missile sites and military airports as a protective barrier along the Russian Arctic littorals. Many of these facilities are likely able to support the protection of mainland Russia against ballistic missiles or aircraft approaching Russia via the North Pole region.

Traditionally, the Bastion Defence has been visualized as consisting of two main sectors. One being the outer area with the aim of conducting sea-denial operations and an inner area with the aim of sea-control. With the establishment of the new Russian Joint Strategic Command North (OSK Sever) and the military build-up in the Russian Arctic, it should be expected that the area with the aim of sea-control would include the Russian littoral area stretching from Wrangel Island, in the East Siberian Sea, to the Norwegian border.

Geographically Layered Defence

If one assumes that the Russian tradition of organizing its land forces in a layered defence equally applies to their naval forces, we can assume the geographical areas in the Northern Atlantic and the Arctic where Russia might deploy and enforce their Bastion Defence. This holds especially true if the geographical area is seen in conjunction with the Russian naval order of battle including the lack of capable aircraft carriers and the possibility of establishing forward operating bases for surface-to-air missiles, coastal-artillery missiles, and fighter aircraft.

There are two Atlantic islands-chains, which create natural areas for defence. The first chain is well known as the Greenland, United Kingdom, and Iceland gap (GIUK-gap).
In the Cold War era, this was a heavily defended and patrolled area for NATO forces in order to deny Soviet Union submarines from deploying into the South Atlantic and threaten mainland USA. Considering this area from the Russian Northern Fleet perspective, it may very well seem like a suitable area for their first line of defence.

In a North Atlantic conflict scenario, the shortest route for reinforcements from North America would pass through the GIUK gap, an area that would be channeling for shipping, possibly making picture compilation and target acquisition easier for an opponent. As the topographical map above shows, the waters south and north of the GIUK-gap are much deeper than the gap itself and may be more favourable operating areas for submarines. However, with Iceland as an operating base for NATO maritime patrol aircrafts and anti-submarine frigates, increasing endurance and operating time, the GIUK-gap would likely be an undesirable operating area for a prolonged time. In addition, maritime patrol aircraft would operate from airports in northwestern parts of UK and western part of Norway, increasing the threat for Russian submarines.

In the unlikely event of an armed conflict between Russia and NATO, striking and occupying operations should be expected from Russian joint forces, especially on vital infrastructure and military forces. Important airbases like Keflavik (Iceland), Andoeya (Norway) and Kinloss (Scotland) as well as submarine bases like Faslane (Scotland) and Haakonsvern (Norway) would likely be on a high priority target list. Other strategic and operational targets, such as national and NATO headquarters, and important civilian infrastructure such as harbours and petroleum depots, would likely be targeted as well.

This would demand extensive military and logistical efforts. Even though Special Forces operations, air strikes and precision strike may be conducted, it may not be sustainable over a prolonged period. Nevertheless, in times of crisis or conflict, it should be expected that Russia
would deploy submarines to areas north and south of GIUK in order to conduct sea denial operations and threaten Allied sea lines of communication (SLOC), trying to ensure their submarines the best operating conditions possible. Submarines deployed to this area would have the ability to conduct short-notice precision strikes, both in large parts of central Europe, the United Kingdom and the North American continent.

The second likely area of deployment for Russian submarines is the chain of islands stretching from Northern Greenland, via the Svalbard archipelagos and the Bear Island to mainland Norway.

This area is much closer to the Northern Fleet's operating bases and therefore, operations are easier to support logistically. A recent Russian naval exercise demonstrated that Russian submarines have deployed to this area, in what seemed to be an exercise enforcing the Bastion Defence. If this alternative is considered together with the current Russian line of airbases in the Arctic, the islands of Franz Joseph Land (Nagurskoye Airbase), Novaja Zemlja (Rogachevo Airbase) and the Zevernaja Zemlja (Stredny Ostrov Airbase), the Norwegian islands of Svalbard and the Bear Islands seem like a natural extension of this protective line. If forward operating bases for aircraft, coastal defence missile or surface-to-air missile systems were established here, it would increase Russian weapon and sensor range, increase aircraft endurance in the Norwegian Sea, the Barents Sea and the Greenland Sea. In addition, it would likely reduce NATO’s ability to conduct sustained anti-submarine warfare operations supported by maritime patrol aircraft and thereby, increasing freedom of maneuver for Russian submarines. The fact that NATO enjoys significant superiority over Russia when it comes to aircraft carriers will then likely be less important, since Russian aircraft may be able to operate from a number of unsinkable islands fortified with surface-to-air missile and coastal-artillery missiles, also providing a protective umbrella over their submarines (see visualization Annex Three).

“Imagine for a moment that you are the Commanding Officer off Russia’s northernmost military district, responsible for the defence of your countries most important military capabilities. You look at the map and realize that your key military bases are within artillery range from NATO territory. Would you be able to accept that? I would not!”

(Lieutenant General Kjell Grandhagen, Norwegian Army Summit, 2018)

Vertically Layered Defence

After analyzing the West’s approach to the Gulf wars and NATO’s operations in Kosovo, Russian military leaders observed the changing characteristics of war. In the last decade, we have seen that Russian forces have gone through radical changes and improvements in order to reduce the western countries technological advantage. Russian forces have modernized, advanced technologically and become more professional. They have increased their mobility and many of their weapon systems are combat proven in conflicts and wars, like Georgia, Crimea and Syria.

As modern weapon systems are implemented and the number of available systems increase, the Bastion Defense concept achieves greater reliability. Though several years from full operational capability, the collective capability is expected to evolve, adapt and improve thus, an accelerated response to mitigate the challenges presented to the Alliance is required.

In the picture below, the orange range ring indicates threat coverage for a Russian naval vessel equipped with Kalibr missiles operating just south of Svalbard. Here it is indicated a missile range of 1500 km which is the estimated range for the surface-to-surface version of the missile, but operations in Syria have proven a range for the weapons system of up to 1800 km towards land-targets. Maximum range of the Kalibr missiles is estimated to be around 2500 km.

The red rings indicate S-400 surface-to-air missiles (SAM) threat rings with an estimated range of 400 km. On the picture the S-400 systems are placed on the North Cap in mainland Norway, the southern tip of Svalbard and Bear Island. In addition, one system is placed at the island Jan-Mayen, in the middle of the Norwegian Sea.
Scale and distances are not entirely accurate on the picture due to scale, map projection and limitations in the drawing program. For example, the distance from the southern tip of Svalbard to Trondheim, where the circle crosses mainland Norway, is around 1450 km, and the distance from the southern tip of Svalbard to Greenland is around 1075 km (where the circle is).

By themselves, these two missile systems might not appear that challenging; however, one should be not be fooled by missile range-rings on a map and these developments should not be underestimated. Nevertheless, for the Bastion Defense to reach its full potential, these systems must be integrated with submarines, air surveillance systems, and surface surveillance systems able to effectively locate, identify and track contacts to generate timely and accurate targeting data. Additionally, SAM systems and Kalibr missile systems, along with other platforms and weapon systems like anti-ship-missiles, air-surveillance aircraft, fighter aircraft and short-range SAM systems, will require a comprehensive systems integration as well.

Between all these systems, proper coordination via robust command and control networks must be in place. For example, if several NATO fighter aircraft are approaching an area protected by land-based SAM systems, Russian ships with long range SAM systems, short-range SAM and fighter aircraft, one can see that a lot of coordination is needed in order to achieve successful engagements. First, it must be decided which unit will engage first or if several units are to engage simultaneously. Secondly, proper target allocation must be ascertained so that all of the approaching enemy aircraft are engaged. Thirdly, units must be dedicated to re-engage any aircraft that avoid the first attack, all while avoiding blue on blue engagements with friendly units. With these challenges in mind, an overlay of robust, secure and cross domain command and control hierarchies will be required to enable timely and accurate coordination of effects, and the
new Russian Arctic Command, OSK Sever, established in 2013, appears to have been established precisely to create such an integrated combined force for the Arctic region. Though not yet fit for purpose, its capabilities are growing. Year on year, the Russian force structure is on a trajectory of modernization and capability improvement. Notwithstanding competing priorities, NATO should look carefully at its ability to proactively mitigate these increasingly complex challenges presented by the Bastion Defence, in order to be able to effectively deter and defend in this strategically critical region.

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8. CONCLUSION

Since 2008, Russia has managed to transform its naval forces significantly. Today, its naval force structure in general consists of smaller units than before; however, they are more technologically advanced, and they have a better and modern weapon inventory, increasing resilience by providing a wider range of possibilities to attack targets all over Europe. Russia is developing a strong and resilient multi-layered Bastion Defense consisting of a variety of different capabilities. Though some years away from its maximum potential, with credible and trained forces, it seems like the Bastion Defense will be a very hard nut to crack. Even though it is called the Bastion Defense, it appears to include offensive actions, like seizing tactical and operational important geographical areas or conducting long-range attacks on important military and civilian infrastructure.

In many ways the Bastion Defense can be considered as an anti-access network created to protect strategic submarines, but it also ensures the Northern Fleet access to the Atlantic, it protects the Russian Arctic and the Russian right flank in a major conflict or war. The emergence of Russian military capabilities coincides with several strategic trends and is redefining the global security environment, including significant changes in political, social, economic, and environmental areas substantially enhanced by recent technology developments. In this changing security environment, a resurgent Russia appears to be using all means available to aggressively pursue and protect increasingly farther-reaching national goals.

9. ANNEXES

Annex One: Digital sea lines development, 2011-2018
Annex Two: Northern Fleet Order of Battle
Annex Three: Visualization of Vertically Layered Defence
Annex One: Digital sea lines development, 2011-2018

<table>
<thead>
<tr>
<th>Regional markets</th>
<th>Length</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transatlantic</td>
<td>95,175 km</td>
<td>24,574 km</td>
</tr>
<tr>
<td>Transpacific</td>
<td>192,086 km</td>
<td>82,700 km</td>
</tr>
<tr>
<td>Americas</td>
<td>45,336 km</td>
<td>31,350 km</td>
</tr>
<tr>
<td>Austral Asia</td>
<td>45,059 km</td>
<td>63,999 km</td>
</tr>
<tr>
<td>EMEA&lt;sup&gt;60&lt;/sup&gt;</td>
<td>94,331 km</td>
<td>16,350 km</td>
</tr>
<tr>
<td>Indian Ocean Pan-East Asia</td>
<td>115,837 km</td>
<td>16,159 km</td>
</tr>
<tr>
<td><strong>Summarized:</strong></td>
<td>587,824 km</td>
<td>235,132 km</td>
</tr>
</tbody>
</table>

<sup>60</sup> Europe, the Middle East and Africa
Annex Two: Russian Navy Development 2008-2017, a numerical comparison

<table>
<thead>
<tr>
<th>Country</th>
<th>JFS 2008-2009</th>
<th>JFS 2017-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ships&lt;sup&gt;61&lt;/sup&gt;</td>
<td>Ships</td>
</tr>
<tr>
<td>Russia</td>
<td>1 Aircraft Carrier</td>
<td>1 Aircraft Carrier</td>
</tr>
<tr>
<td></td>
<td>15 Submarines (SSBN)</td>
<td>13 Submarines (SSBN)</td>
</tr>
<tr>
<td></td>
<td>26 Submarines SSGN/SSN</td>
<td>28 Submarines (SSGN/SSN)</td>
</tr>
<tr>
<td></td>
<td>20 Submarines (SSK)</td>
<td>23 Submarines (SSK)</td>
</tr>
<tr>
<td></td>
<td>5 Cruisers</td>
<td>7 Submarines (AUX)</td>
</tr>
<tr>
<td></td>
<td>15 Destroyers</td>
<td>14 Destroyers</td>
</tr>
<tr>
<td></td>
<td>42 Frigates</td>
<td>11 Frigates</td>
</tr>
<tr>
<td></td>
<td>50 Corvettes</td>
<td>68 Corvettes</td>
</tr>
<tr>
<td></td>
<td>172 Fast Attack Craft / Patrol Craft&lt;sup&gt;62&lt;/sup&gt;</td>
<td>290 Fast Attack Craft / Patrol Craft</td>
</tr>
</tbody>
</table>

<sup>61</sup> Ships in reserve modus are generally not included

<sup>62</sup> Includes Fast Attack Crafts, Fast Patrol Boats, Patrol Boats and Boarder Guard units equipped with weapons.
Annex Three: Visualization of Vertically Layered Defence

- Surveillance aircraft
- S-400 Coverage
- Kalibr missile range
- Submarine operating area
10. REFERENCES


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