Research Paper

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Russia's Military Posture in the Arctic

Managing Hard Power in a 'Low Tension' Environment

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Summary

- Russia's military posture in the Arctic is informed by the changing geopolitical environment, and can no longer be considered in isolation from the country's growing tensions with the West. In this sense, the period of 'Arctic exceptionalism' – in which, by convention, the region has been treated as a zone of depoliticized cooperation – is coming to an end.

- Certainly, the Russian Arctic is not exceptional for Moscow in military-operational terms. Russia's leadership has accorded the same threat perception to the Arctic as it has to other theatres of operation. It seeks consistent control over foreign military activity in the Russian Arctic, and ensured access for Russian armed forces, particularly the Northern Fleet. Russia's military build-up in the Russian Arctic and the Kremlin's intentions are, at least for now, defensive in nature.

- Russia's military build-up in the Arctic Zone of the Russian Federation (AZRF) primarily aims to ensure perimeter defence of the Kola Peninsula for the survivability of second-strike nuclear assets. Russia's 'Bastion' defence concept consists of the projection of multi-layered sea denial and interdiction capabilities.

- Another Russian priority is to ensure the Northern Fleet's access to, and passage along, the Northern Sea Route (NSR) from the Atlantic Ocean to the Pacific Ocean. This has hitherto been achieved through military infrastructure along the NSR. However, due to the receding ice, Moscow will seek to enforce 'border control' over a larger portion of its Arctic area in the future. The revamping of dual-use border control infrastructure and facilities is deemed a priority for safeguarding Russia's vision of national security in the AZRF.

- Since the mid-2010s, Russia has deployed substantive force and capabilities along its northern border in the AZRF. Parts of the armed forces, such as the Arctic Brigade, are now Arctic-capable and have developed concepts of operations tailored to that environment. The Northern Fleet has been repurposed with the Arctic environment in mind, and has been provided with Arctic-specific military technology and training.

- Russia acts as a status quo power and a reluctant rule-follower in the Arctic, partly because international law there plays in its favour, and partly because it is in Russia's interest to do so. Despite growing tension, cooperation between Russia and other Arctic nations is likely to endure.

- Russia's military leadership rules out starting a conflict in the Arctic, and would push any Arctic-based conflict towards sea lines of communication between the North Atlantic and the Baltic Sea. However, the risk exists of escalation and miscalculation around incidents at sea.

- In dealing with Russian ambition in the region, Western military and policy planners should seek to maintain the convention of treating the Arctic as a 'low tension' area. However, planners must also acknowledge the existence of pressing military security issues in the wider Arctic. A more inclusive debate and the establishment of a regulatory framework around military security

in the Arctic would be useful. As Russia will chair the Arctic Council and the Arctic Coast Guard Forum between 2021 and 2023, this is a window of opportunity to address military security in the region.

- Innovative efforts can be made to strengthen military security and domain awareness in the region, without militarizing the issue. This should start with the creation of a military code of conduct for the High North. This would send a powerful signal that cooperation should remain an absolute priority for all Arctic states, and that maintaining the region's 'low tension' status requires action, not just words.

1. Introduction

Ever since Mikhail Gorbachev's 'Murmansk speech' in 1987, in which he defined the Arctic as a 'zone of peace and cooperation',[1] the region has been widely understood by coastal states to be an area of 'low tension'. In other words, it has been seen as a place where great-power politics between coastal states should be set aside and replaced with practical, depoliticized cooperation.

However, the Arctic is not insulated from global security challenges, especially those around the impacts of climate change. 'Arctic exceptionalism' is coming to an end. Despite its unique geography, the Arctic does not exist in isolation from the wider international context, or away from the pressures around the strained relations between Russia and the West.

After the fall of the Soviet Union, the Kremlin paid little attention to the Arctic. During the 1990s, the Russian Arctic was at best considered a burden fraught with socio-economic problems. Little was done there until an 'Arctic revival' began in the 2000s, focused on reinvesting in a region that had previously been abandoned for more than 15 years. Russia has been described as a 'confused Arctic superpower',[2] balancing cooperation and competition with other Arctic nations as part of its efforts to reassert its role as a great power.

Moscow's intentions for the Arctic are not Arctic-specific, but are related to the Kremlin's global ambitions for reviving Russia as a great power. Russia's force posture in the Arctic is informed by the changing geopolitical environment around its strained relations with the West. This explains why growing tension with the West and the risk of miscalculation could lead to a more assertive Russian posture in the Arctic in the future.

What happens militarily in the Russian Arctic has little to do with the region itself.[3] In that sense, the Russian Arctic is not exceptional for Moscow in military-operational terms. The leadership has accorded the same level of threat perception to the Arctic as it has to other theatres of operation regarding NATO and the West. For the Kremlin, the Arctic is fundamentally Russian – especially since the four other coastal nations are NATO members.

This paper focuses on Russia's military posture, force structure and military intentions in the Russian Arctic. It seeks to demystify Moscow's military build-up in the region: it explains that if Moscow is indeed militarizing the Russian Arctic, the military build-up and the Kremlin's intentions are, at least for now, defensive in nature.

[1] Gorbachev, M. (1987), 'Mikhail Gorbachev's speech in Murmansk at the ceremonial meeting on the occasion of the presentation of the order of Lenin and the Gold Star to the city of Murmansk', Barentsinfo, 1 October 1987, https://www.barentsinfo.fi/docs/Gorbachev_speech.pdf (accessed 14 May 2019).
[2] Center for Strategic and International Studies (CSIS) (2018), 'The Arctic of the Future: Strategic Pursuit or Great Power Miscalculation?', 8 May 2018, https://www.csis.org/events/arctic-future-strategic-pursuit-or-great-power-miscalculation (accessed 14 May 2019).
[3] Klimenko, E. (2015), 'Russia and the Arctic: an end to cooperation?', SIPRI, 26 March 2015, https://www.sipri.org/commentary/essay/2015/russia-and-arctic-end-cooperation (accessed 14 May 2019).

A further section deals with the implications of Russia's Arctic military posture for NATO and its key partners in the region, Sweden and Finland, arguing that all of these actors should address the issue of Russia's increased military presence now. The paper also presents policy-relevant recommendations for NATO and its partners regarding military security in the Arctic.

In terms of geography, the paper considers the Arctic Zone of the Russian Federation (AZRF), from its territorial sea to the extended continental shelf.[4] The analysis covers both the 'High North' (namely the European Arctic, where NATO and its Nordic partners are concerned with Russia's presence) and the Pacific or 'North American' Arctic.[5] The term 'Arctic Eight' refers to eight nations, consisting of a core of five 'coastal' states (Russia, the US, Canada, Denmark and Norway) plus three 'non-coastal' states (Iceland, Sweden and Finland) – the latter being states that are not bordering the Arctic Ocean.

[4] The AZRF refers to the territories of the Republic of Sakha (Yakutia), Murmansk and Arkhangelsk provinces, Krasnoyarsk territory, Nenets, Yamal-Nenets and Chukchi autonomous districts, as well as 'their internal maritime waters, territorial sea, exclusive economic zone and continental shelf adjoining to such territories, areas and islands, within which Russia enjoys sovereign rights and jurisdiction under international law'. See Burgess, P. (2010), *Foundations of the Russian Federation's State Policy in the Arctic until 2020 and Beyond*, Arctic Portal, 1 December 2010, https://icr.arcticportal.org/index.php?option=com_content&view=article&id=1791%3 (accessed 14 May 2019). For the original Russian text, see *Rossiiskaia Gazeta* (2009), 'Osnovy Gosudarstvennoi Politiki Rossiiskoi Federatsii v Arktike na Period do 2020 goda i Dal'neishuyu Perspektivu', 27 March 2009, https://rg.ru/2009/03/30/arktika-osnovy-dok.html (accessed 14 May 2019).

[5] Pezard, S. (2018), *The New Geopolitics of the Arctic*, Santa Monica: RAND Corporation, pp. 2–3, https://www.rand.org/pubs/testimonies/CT500.html (accessed 14 May 2019).

2. Perimeter Control Around the 'Bastion'

Moscow has a militarized threat assessment for the Russian Arctic. It seeks consistent control over foreign military activity in this region, and ensured access for Russian armed forces. Contrary to the rest of Russia's periphery, Moscow feels that it has a position of relative strength in the Arctic, which means that it is clearly seeking to obtain dividends from its perceived military superiority.[6]

This partly explains Russia's assertive force posture and signalling. Apart from the wider context of Moscow's great-power reassertion, the departure of US troops from the Keflavik Naval Air Station in Iceland in 2006 was undoubtedly viewed in Moscow as an opportunity to be seized. More aggressive Russian rhetoric on the region emerged in the early 2010s.[7] This culminated in August 2018 when Defence Minister Sergey Shoigu announced that competition in the Arctic could lead to potential conflict.[8]

However, Russia does not have an Arctic military strategy *per se*. Official documents detailing Russia's Arctic policy discuss military activities only in broad terms.[9] It is therefore hard to discern what a military strategy in the region would look like in isolation from other theatres of operation, notably the Baltic Sea and the North Atlantic.

The 'Bastion' defence concept

Russia's military leadership accords absolute priority to perimeter defence of the Kola Peninsula, to ensure the survivability of second-strike nuclear assets. The Kola Peninsula and its surrounding areas are considered of strategic importance for Russian national security. Perimeter defence around Kola and the extension of the 'Bastion' defence concept are designed to give Russia defence in depth.

Derived from Soviet strategy, the concept of a 'strategic bastion' was introduced by the Ministry of Defence in the early 1990s. Its aim was to provide strategic submarine operations with ensured survivability.[10] The concept also entailed concentrating a large part of the sea-based force with the Northern Fleet, as the Arctic was at that time still considered unreachable by foreign military forces and ice coverage was constant.

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[6] Baev, P. K. (2018), 'Examining the Execution of Russian Military-Security Policies and Programs in the Arctic', in Tynkkynen, V., Shinichiro, T., Gritsenko, D. and Goto, M. (eds) (2018), *Russia's Far North: the Contested Energy Frontier*, Abingdon and New York: Routledge.
[7] Åtland, K. (2018), *The Building Up of Russia's Military Potential in the Arctic Region and Possible Elements of its Deterrence*, Centre for Russian Studies, http://r-studies.org/cms/index.php?action=news/view_details&news_id=43590&lang=eng (accessed 14 May 2019).
[8] TASS (2018), 'Shoigu: Arktika stala tsentrom interesov ryada gosudarstv, chto mozhet privesti k konfliktam' [Shoigu: the Arctic has become a centre of interest for a number of states, which could be leading to conflicts], 31 August 2018, https://tass.ru/armiya-i-opk/5509944 (accessed 14 May 2019).
[9] *Rossiiskaia Gazeta* (2009), 'Osnovy Gosudarstvennoi Politiki Rossiiskoi Federatsii v Arktike'. See also The International Expert Council on Cooperation in the Arctic (2013), 'The development strategy of the Arctic zone of the Russian Federation', 14 April 2013, http://www.iecca.ru/en/legislation/strategies/item/99-the-development-strategy-of-the-arctic-zone-of-the-russian-federation (accessed 14 May 2019).
[10] Blank, S. (2011), *Russia in the Arctic*, Carlisle: Strategic Studies Institute, U.S. Army War College, p. 54, https://ssi.armywarcollege.edu/pdffiles/PUB1073.pdf (accessed 14 May 2019).

The Bastion concept still centres today on defending sea-based nuclear assets. It encompasses a region that extends from the Kola Peninsula towards the Barents Sea and the Norwegian Sea and further west to the Greenland–Iceland–United Kingdom (GIUK) gap. Control is ensured through sea denial and interdiction capabilities at sea and in the air, to provide protection for nuclear-powered ballistic-missile submarines (SSBNs) in their area of operation.[11]

The Bastion concept seeks to ensure both the security of the Kola Peninsula and access of the Northern Fleet to the North Atlantic and beyond.[12] It makes the distinction between 'inner defence', which relates to ambition of control, and 'outer defence', for ambition of denial.[13] The concept also involves creating space for sea control and sea denial activities.

Air defence forces were revamped in 2016 to serve this purpose,[14] and were deployed throughout the different Arctic bases. Military infrastructure in the Russian Arctic aims to bolster Russia's air defence and sea denial capabilities onshore and close to the coast, while the Northern Fleet has been fitted with adaptable sea denial platforms along the AZRF and beyond. Liquefied natural gas (LNG) facilities (i.e. the Yamal and Gydan LNG projects) are seen as strategic assets, and their protection increasingly factored into the Bastion defence concept.

> The Bastion concept seeks to ensure both the security of the Kola Peninsula and access of the Northern Fleet to the North Atlantic and beyond. It relates to creating space for sea control and sea denial activities.

To match its sea denial and interdiction remit for protecting the Kola Peninsula, the Northern Fleet has been gradually fitted with powerful and multi-layered air defence and coastal defence capabilities. This is in line with increased sea and air patrols in the Arctic for perimeter defence. The Northern Fleet is now operating a hardened, Arctic-capable, multi-layered air defence and sea denial system that includes:

- S-400 (NATO: SA-21 Growler) and S-300 (NATO: SA-10 Grumble) air defence systems for long-range protection;
- P-800 Oniks anti-ship cruise missiles (NATO: SS-N-26 Strobile) and Kalibr-NK land-attack cruise missiles (NATO: SS-N-Sizzler) for medium-range protection;

[11] Wezeman, S. (2016), *Military Capabilities in The Arctic: A New Cold War in the High North?*, SIPRI, p. 22, https://www.sipri.org/sites/default/files/Military-capabilities-in-the-Arctic.pdf (accessed 14 May 2019). See also House of Commons Defence Committee (2018), *On Thin Ice: UK Defence in the Arctic*, Twelfth Report of Session 2017–19, https://publications.parliament.uk/pa/cm201719/cmselect/cmdfence/388/388.pdf; and Danish Defence Intelligence Service (2018), *Intelligence Risk Assessment 2018: An Assessment of Developments Abroad Impacting on Danish Security*, https://fe-ddis.dk/SiteCollectionDocuments/FE/EfterretningsmaessigeRisikovurderinger/Risk_Assessment2018.pdf (accessed 14 May 2019).
[12] Defence Sub-Committee (House of Commons) (2017), *Oral evidence: Defence in the Arctic*, HC 879, 15 March 2017, http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/defence-subcommittee/defence-in-the-arctic/oral/48849.html (accessed 14 May 2019).
[13] CSIS (2018), 'The Arctic of the Future'. See also Olsen, J. A. (ed.) (2017), 'NATO and the North Atlantic: Revitalising Collecting Defence', *Whitehall Papers*, 87(1): pp. 1–106, https://rusi.org/publication/whitehall-papers/nato-and-north-atlantic-revitalising-collective-defence (accessed 14 May 2019).
[14] RIA Novosti (2016), 'V Rossii sformirovana 45-ya armia VVS i PVO Severnogo flota' [The Northern Fleet 45th Air and Air Defence Army was formed in Russia], 29 January 2016, https://ria.ru/20160129/1367020487.html (accessed 14 May 2019).

- Pantsir-SA (NATO: SA-22 Greyhound) and Tor M2-DT (NATO: SA-15 Gauntlet) systems for short-range base defence; and
- 3K60 BAL (NATO: SC-6 Sennight), K-300P Bastion-P (NATO: SSC-5) and 4K51 Rubezh (NATO: SSC-3 Styx) systems for coastal defence.

As the mainstay of the newly established Joint Strategic Command North ('OSK Sever'), the Northern Fleet accounts for about two-thirds of the Russian navy's nuclear strike capabilities,[15] the rest residing in the Pacific Fleet.[16] The primary function of OSK Sever is to ensure the protection of the Kola Peninsula. OSK Sever's establishment was announced in late 2013. The facility, which is based around the existing administrative and force structure of the Northern Fleet, became operational on 1 December 2014.

Based in Arkhangelsk, OSK Sever does not yet have the formal status of a military district. Nonetheless, it reports directly to the National Defence Control Centre in Moscow. This will change in late 2019, when OSK Sever will become a full-fledged military district.[17] Like the four other districts, it integrates military assets across all branches of the armed forces, including air defence units. Parts of the headquarters of the Northern Fleet are co-located in Arkhangelsk, while the actual headquarters of OSK Sever are in Severomorsk. Its area of operation is coordinated with the Central and Eastern military districts, which in turn are in charge of land-based Arctic territorial defence.

Arctic patrol and domain awareness

Since 2007, Russia has been expanding the scope of its military activities in the AZRF and beyond. Patrols by long-range strategic bombers resumed over the North Atlantic and the North Pacific in August 2007. It should be noted that such activities represent routine 'background noise', rather than an intensification of activity, and have more to do with the protection of the Bastion than aggressive intent. Nonetheless, long-range aviation patrols illustrate the Russian leadership's general willingness to maintain operational capacity[18] and ensure domain awareness around the Kola Peninsula.

Long-range bombers are not based in the AZRF, but they operate there and use local military installations as transit points.[19] Patrol assets are those of the naval aviation forces of the Northern

[15] Åtland (2018), *The Building up of Russia's Military Potential in the Arctic Region*.
[16] The Pacific Fleet, at the other end of the Northern Sea Route (NSR) in the Pacific Arctic, is a key military component of AZRF security architecture. With headquarters in Vladivostok, it covers the Bering Strait and hosts strategic nuclear submarines based in Vilyuchinsk on the Kamchatka Peninsula.
[17] *Izvestiya* (2019), 'Severnyi flot poluchit status voennogo okruga' [Fleet of the North obtains the status of military district], 19 April 2019, https://iz.ru/869664/2019-04-19/severnyi-flot-poluchit-status-voennogo-okruga.
[18] Lasserre, F. and Têtu, P. (2016), 'Russian Air Patrols in the Arctic: Are Long-Range Bomber Patrols a Challenge to Canadian Security and Sovereignty?', *Arctic Yearbook*, https://arcticyearbook.com/images/yearbook/2016/Scholarly_Papers/11.Lasserre-and-Tetu.pdf (accessed 14 May 2019). See also Regehr, E. (2016), 'When bears still fly: responding to Russian bomber patrols in the Arctic', Simons Foundation, 10 November 2016, http://thesimonsfoundation.ca/highlights/when-bears-still-fly-responding-russian-bomber-patrols-arctic (accessed 14 May 2019).
[19] Klimenko, E. (2016), *Russia's Arctic Security Policy: Still Quiet in the High North?*, SIPRI Policy Paper No. 45, p. 21, https://www.sipri.org/sites/default/files/SIPRIPP45.pdf (accessed 14 May 2019).

and Pacific Fleets, which limits their range of operations.[20] Patrols cover the international airspace of the Barents Sea, the Greenland Sea, the Arctic Ocean, the North Atlantic and the Bering Strait.

Nonetheless, intercepts with Western radar are still considered modest (especially when considering numbers in the Baltic Sea or the Black Sea) and at a level far below that recorded during the Cold War.[21] Studies have shown that Russian long-range patrols do not venture close to the joint US–Canada North Warning System.[22]

Regular aviation patrols and manoeuvres resumed in early 2013 along the Northern Sea Route (NSR) and over the Arctic Ocean. According to official sources, the Northern Fleet carried out more than 100 patrols over the Arctic Ocean in 2018.[23] Since 2017, Russia has been routinely simulating mock air wing attacks on Norwegian military assets – primarily against the coastal radar installations in Vardø, which are funded by the US.[24]

Dangerous manoeuvring close to Norwegian airspace, especially with fighter aircraft simulating a strike in attack formation, is increasing the risk of miscalculation, especially if an interception occurs. Other unacceptable Russian military activity has included GPS jamming in northern Finland and northern Norway during the NATO exercise Trident Juncture in 2018,[25] and the announcement that the armed forces would carry out missile tests in the basin of the Norwegian Sea during Trident Juncture.[26]

North Atlantic sea lines of communication (SLOC)

Northern Fleet operations in the North Atlantic depend on unhampered access for vessels crossing Norwegian waters around the Barents Sea and Svalbard and then transiting via the Greenland–Iceland–Norway (GIN) gap.[27] The main chokepoint in the North Atlantic is the GIUK gap between Greenland, Iceland and the UK. Russia's extended ambition of denial with the Bastion defence

[20] Staun, J. (2015), *Russia's Strategy in the Arctic*, Royal Danish Defence College, https://pure.fak.dk/ws/files/7120599/Russias_Strategy_in_the_Arctic.pdf (accessed 14 May 2019).
[21] Lasserre and Têtu (2016), 'Russian Air Patrols in the Arctic'.
[22] Regehr, E. (2018), 'Replacing the North Warning System: strategic competition or Arctic confidence building?', Simons Foundation, 1 March 2018, http://www.thesimonsfoundation.ca/highlights/replacing-north-warning-system-strategic-competition-or-arctic-confidence-building (accessed 14 May 2019).
[23] Ministry of Defence of the Russian Federation (2019), 'V 2019 godu lyotchiki Severnogo flota prodolzhat polyoty v Arktike na regulyarnoi osnove' [In 2019, the pilots of the Northern Fleet will continue flying over the Arctic on a regular basis], 1 January 2019, https://structure.mil.ru/structure/okruga/north/news/more.htm?id=12210644@egNews (accessed 14 May 2019).
[24] Nielsen, T. (2019), '11 Russian fighter jets made mock attack on Norwegian Arctic radar', *The Barents Observer*, 12 February 2019, https://thebarentsobserver.com/en/security/2019/02/11-russian-fighter-jets-made-mock-attack-norwegian-arctic-radar (accessed 14 May 2019). See also Nielsen, T. (2018), 'Norway says Russia's mock attack on Vardø radar troubles stability in the north', *The Barents Observer*, 13 March 2018, https://thebarentsobserver.com/en/security/2018/03/oslo-such-behavior-does-not-promote-good-neighborly-relations (accessed 14 May 2019).
[25] Reuters (2018), 'Finland says GPS signal disruption during NATO war game came from Russia', 15 November 2018, https://af.reuters.com/article/worldNews/idAFKCN1NK2IP (accessed 14 May 2019). See also Nielsen, T. (2018), 'GPS jamming came from Kola, Defence Ministry in Norway confirms', *The Barents Observer*, 13 November 2018, https://thebarentsobserver.com/en/security/2018/11/gps-jamming-came-kola-defense-ministry-norway-confirms (accessed 14 May 2019).
[26] RFE/RL (2018), 'Russia plans missile-firing exercise off Norway amid NATO drills', 29 October 2018, https://www.rferl.org/a/russia-plans-missile-firing-exercise-off-norway-amid-nato-drills/29570878.html (accessed 14 May 2019).
[27] Globalsecurity.org (undated), 'Red Banner Northern Fleet', https://www.globalsecurity.org/military/world/russia/mf-north.htm (accessed 14 May 2019).

concept means that ensured operations and security for submarine-launched ballistic missiles (SLBMs) will require force deployment through this chokepoint.

Russian operations around the GIUK gap would have a negative impact on North Atlantic sea lines of communication (SLOC), which constitute the main routes for reinforcement and resupplies from North America to theatres of operation in Europe. The extended Bastion defence concept, honed by sea denial and interdiction capabilities at sea, is a credible threat to NATO carrier groups.[28] This would have direct consequences for NATO and its allies in terms of freedom of operation in a contested environment. Russian interdiction capabilities and the presence of naval assets might disrupt NATO reinforcements in the North Atlantic.[29]

The extended Bastion concept puts more pressure on North Atlantic SLOC as well as on the Baltic region. For Russia, linking the Arctic to the Baltic region would have the benefit of establishing a defensive posture in Arctic waters while creating a 'spill-over' of military activity towards the Baltic Sea.[30] In a contested environment, NATO reinforcements and resupplies in the North Atlantic would have to keep open sea approaches to the Baltic region. In wartime, Russia would seek to disrupt the entire SLOC in the North Atlantic, seize the initiative and control escalation there.

[28] Scanlan, O. (2017*), Written evidence submitted by Oxford Research Group*, House of Commons, 28 December 2017, http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/defence-subcommittee/defence-in-the-arctic/written/76223.html (accessed 14 May 2019).
[29] Conley, H. A. and Rahbek-Clemmensen, J. (2017), *Written evidence submitted by Heather A. Conley and Jon Rahbek-Clemmensen*, House of Commons, 19 January 2017, http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/defence-subcommittee/defence-in-the-arctic/written/45574.html (accessed 14 May 2019).
[30] Pezard, S., Tingstad, A., Van Abel, K. and Stephenson, S. (2017), *Maintaining Arctic Cooperation with Russia: Planning for Regional Change in the Far North*, Santa Monica: RAND Corporation, p. 29, https://www.rand.org/content/dam/rand/pubs/research_reports/RR1700/RR1731/RAND_RR1731.pdf (accessed 14 May 2019).

3. Military Infrastructure and Logistics in the Russian Arctic

Another Russian military priority is to ensure the Northern Fleet's access to, and passage along, the NSR from the Atlantic Ocean to the Pacific Ocean – a route that stretches from the Kara Sea to the Bering Strait. This has more to do with 'navigational assertions',[31] namely freedom of access and navigation in the AZRF, than great-power politics.

Defending a 'new' border

Military deployments allow sovereignty to be enforced over Russia's territory and borders:[32] military activities in the region are an enabler in this respect, and aim to demonstrate sovereignty rather than expand military assets. Climate change is having a tremendous impact on Russian security perceptions. In anticipating the negative consequences of climate change, Russia would be enforcing its sovereignty in the Arctic based on 'what if' scenarios.[33] Accordingly, an increase in maritime traffic through the Arctic would demand more oversight, therefore potentially increasing competition around physical access and resources.[34]

Due to receding ice, Moscow will seek to enforce 'border control' over a larger portion of its Arctic area in the future. Revamping dual-use border control infrastructure and facilities is deemed a priority in order to safeguard Russia's vision of national security in the AZRF. These new conditions are now testing Soviet-era perceptions that a direct conventional attack through the Arctic is unlikely.[35] This is fuelling Russia's fear of encirclement, in turn justifying to the Kremlin the need to protect what is seen as a 'new' border.

There is a clear understanding in the Kremlin that international traffic and shipping will undeniably expand in the Barents Sea, and that this traffic will come closer to the New Siberian Islands, leaving parts of Russian territory exposed to potential aggressors – assumed by Russian officials to be from NATO.[36] A more accessible Arctic Ocean could clear the way for a direct US or NATO presence, potentially including the deployment of Western anti-ballistic missile systems and surface assets, as

[31] Flake, L. E. (2015), 'Forecasting Conflict in the Arctic: The Historical Context of Russia's Security Intentions', *The Journal of Slavic Military Studies*, 28(1): p. 92, https://doi.org/10.1080/13518046.2015.998122 (accessed 14 May 2019).
[32] Staun (2015), *Russia's Strategy in the Arctic*, p. 30.
[33] CSIS (2018), 'The Arctic of the Future'. See also Defence Sub-Committee (House of Commons) (2017), *Oral evidence: Defence in the Arctic*.
[34] Sergunin, A. and Konyshev, V. (2017), 'Russian military strategies in the Arctic: Change or Continuity?', *European Security*, 26(2): p. 174, https://doi.org/10.1080/09662839.2017.1318849 (accessed 14 May 2019).
[35] Kristensen, K. S. and Sakstrup, C. (2016), *Russian Policy in the Arctic after the Ukraine Crisis*, Centre for Military Studies, p. 30, https://cms.polsci.ku.dk/english/publications/russian-policy-in-the-arctic/Russian_Policy_in_the_Arctic_after_the_Ukraine_Crisis.pdf (accessed 14 May 2019).
[36] Flake, L. E. (2017), 'Contextualizing and Disarming Russia's Arctic Security Posture', *The Journal of Slavic Military Studies*, 30(1): p. 21, https://doi.org/10.1080/13518046.2017.1271647 (accessed 14 May 2019).

well as an increased nuclear-submarine presence.[37] This could occur not only in the European Arctic but also in the Bering Strait and along the Northwest Passage.

Receding ice will decrease the ability of submarines to hide under the ice and cover their operations – a change that would leave them vulnerable to anti-submarine warfare (ASW) operations and satellite observation.[38] This is particularly problematic for Russian SSBNs and the sea-based nuclear deterrent.

Climate change will leave the NSR exposed and will force the Kremlin to look at the Transpolar Route as a second line of defence in the Arctic Ocean.[39] Moscow views securitizing the region through military activity as a necessary first step to enacting control in a fast-changing Arctic, especially since large parts of Russia's northern border are not protected.[40] The prospect of more activity close to Russia's Arctic border is pushing the Kremlin to invest now in surveillance, monitoring, domain awareness and defensive capabilities along the Russian coastline. This is already happening, for instance, with electronic warfare (EW) capabilities: two radio-electronic warfare centres were recently established in the Northern Fleet in the Murmansk oblast and in Kamchatka.[41] Russian superiority in the electromagnetic field will have direct consequences in terms of access to the NSR by foreign vessels.[42]

Military infrastructure development in the Russian Arctic

NSR operations have led to a complete reconstruction of forward bases and outposts in the AZRF, partly to increase search and rescue (SAR) capabilities and partly to meet Russia's ambition there. Moscow has opted to rebuild existing Soviet infrastructure and to build new military bases from scratch.

The Northern Fleet and the Russian coastguard manage a network of airfields in the AZRF, mostly serving SAR capabilities, military logistics and resupply operations. So far, 14 such airfields have been opened or rebuilt since 2014 (see Appendix). Future plans include the construction of new airstrips in Chokurdy, Kigely and Taymylyan for SAR purposes.

[37] Khramchikhin, A. (2011), 'Voyenno-Politicheskaya Situatsiya v Arktike i Stsenarii Vozmozhnykh Konfliktov' [Military-Political Situation in the Arctic and Scenarios of Possible Conflicts], *Arktika i Sever* [The Arctic and the North], 2(1): pp. 1–15, https://cyberleninka.ru/article/v/voenno-politicheskaya-situatsiya-v-arktike-i-stsenarii-vozmozhnyh-konfliktov (accessed 14 May 2019). See also Khramchikhin, A. (2013), 'Stanet li Arktika Teatrom Voennykh Deistviy po Poslednemu Peredelu Mira?' [Will the Arctic Become a Military Theatre for the Final Re-Division of the World?], *Arktika i Sever* [The Arctic and the North], 10: pp. 52–60, http://www.arcticandnorth.ru/upload/iblock/c9d/5.pdf (accessed 14 May 2019). See also Sergunin, A. and Konyshev, V. (2014), 'Russia in Search of its Arctic Strategy: Between Hard and Soft Power?', *The Polar Journal*, 4(1): pp. 69–87, https://doi.org/10.1080/2154896X.2014.913930 (accessed 14 May 2019).
[38] Carlsson, M. and Granholm, N. (2013), 'Russia and the Arctic', FOI, p. 13, https://www.foi.se/rest-api/report/FOI-R--3596--SE (accessed 14 May 2019).
[39] Stretching from the Atlantic Ocean to the Pacific Ocean, the projected Transpolar Route would cross the Arctic Ocean mostly through international waters. See Danish Defence Intelligence Service (2018), *Intelligence Risk Assessment 2018*.
[40] Defence Sub-Committee (House of Commons) (2017), *Oral evidence: Defence in the Arctic*.
[41] *Izvestiya* (2019), 'Shchit i put: russkuiu Arktiku prikroet radioelektronnyi kupol' [Shield and path: the Russian arctic will be covered by a radio-electronic dome], 7 May 2019, https://iz.ru/875561/aleksei-ramm-bogdan-stepovoi-roman-kretcul/.
[42] Felgenhauer, P. (2019), 'Russia's New Electronic Warfare Capabilities in the Arctic', *Eurasia Daily Monitor*, 16(79), 30 May 2019, https://jamestown.org/program/russias-new-electronic-warfare-capabilities-in-the-arctic/.

Forming the mainstay of Russia's permanent military presence are the three fully autonomous 'Tricolour' bases. These are located respectively on Alexandra Land Island (the 'Arctic Shamrock' base, close to Nagurskoye on Franz Josef Land); at Kotelny on the main New Siberian Island (the 'Northern Clover' base, on the Laptev Sea); and at Rogachevo on Novaya Zemlya. (See Appendix for details.) All three are strategically located and provide efficient interdiction capabilities against potential foreign military operations as part of the Bastion defence concept. Their mission is to provide the Northern Fleet with multi-layered regional air defence capabilities as well as radar installations for surveillance and early warning. The three bases are heavily armed, with a mix of long-range (S-300 and S-400), medium-range (P-800 Oniks), short-range (Pantsir and Tor M2-DT) and coastal defence (K-300P Bastion-P, 4K51 Rubezh) systems.

> Moscow views securitizing the region through military activity as a necessary first step to enacting control in a fast-changing Arctic, especially since large parts of Russia's northern border are not protected.

Several other military bases and facilities have been renovated since Soviet times or built from scratch since 2015, in addition to the three 'Tricolour' bases and the two bases operated by the Arctic Brigade in Pechenga and Alakurtti (see Section 4). Of particular note are the bases on Wrangel Island[43] and Cape Schmidt in the Pacific Arctic.[44] The absence of airfields on both bases makes operations and logistics complicated. As so often in Russia, corruption affected the construction of these bases between 2015 and 2018.[45]

Another key element of infrastructure is the Tiksi base, on the Laptev Sea coast on the Kola Peninsula. It provides SAR facilities and is also the site of an air defence and radar outpost. Air defence is ensured by a regiment of S-400 systems.[46] Tiksi is clearly intended to reinforce perimeter defence around Kola, as well as to strengthen interdiction capabilities in conjunction with the other 'Tricolour' installations. Construction in Tiksi started in 2017. The base now hosts about 100 troops from the 45th Air Force and Air Defence Army.[47] In the future, the base will be able to

[43] The Wrangel Island base (Zvyozdny airbase), located between the Chukchi and East Siberian Seas, comprises SAR capabilities, electronic warfare (EW) and radar units, and air defence capabilities – the 'usual' mix of S-300 air defence systems, Pantsir-S1 anti-aircraft systems and Rubezh anti-ship coastal systems. Naval installations harbour Pacific Fleet assets. Surveillance capabilities are reinforced by the tracked Sopka-2 radar system hardened to Arctic conditions. The radar station has been operational since 2015, but full construction is due to be completed in 2019. See Tsentr Analiza Mirovoi Torgovli Oruzhyem [Centre of Analysis for Global Arms Trade] (2018), 'V Arktike provedena trenirovka po obnaruzheniyu aviagruppy uslovnogo protivnika' [Training was conducted in the Arctic to detect the air group of a conditional opponent], 25 July 2018, http://www.armstrade.org/includes/periodics/news/2018/0725/131047832/detail.shtml (accessed 15 May 2019).

[44] South of Wrangel Island in Chukotka, the Cape Schmidt base – construction of which started in 2015 – is due for completion in 2019. The small base hosts a radar unit and air defence forces, with the planned deployment of an unmanned aerial vehicle (UAV) unit for air and sea surveillance.

[45] Eye on the Arctic (2018), 'Major corruption case clouds Russian base projects in Arctic', 20 April 2018, http://www.rcinet.ca/eye-on-the-arctic/2018/04/20/major-corruption-case-clouds-russian-base-projects-in-arctic/ (accessed 15 May 2019). See also Regehr, E. and Jackett, M. (2018), 'Circumpolar Military Facilities of the Arctic Five', Simons Foundation, 16 July 2018, http://www.thesimonsfoundation.ca/highlights/circumpolar-military-facilities-arctic-five-updated-july-2018 (accessed 15 May 2019).

[46] Kommersant.ru (2015), 'Rossiya za 2015 god sformirovala v Arktike dva zenitnikh polka C-400' [In 2015 Russia formed two S-400 anti-aircraft missile regiments in the Arctic], 8 December 2015, http://www.kommersant.ru/Doc/2872267 (accessed 15 May 2019).

[47] Novosti VPK (2018), 'Rossiya nachala stroitel'stvo bazy PVO v Arktike' [Russia began the construction of an air defence base in the Arctic], 28 August 2018, https://vpk.name/news/226016_rossiya_nachala_stroitelstvo_bazyi_pvo_v_arktike.html (accessed 15 May 2019).

autonomously house a full brigade for several months. Tactical aviation capability is provided through the deployment of MiG-31s.[48]

Looking at the military infrastructure in the AZRF, one can observe a network of mostly disparate bases, which provide a forward presence along the Arctic coastline but lack coordination (see Appendix). Many bases and outposts are co-located with coastguard and border guard units. In this way, Arctic military infrastructure fundamentally serves a dual civilian/military purpose, encompassing SAR operations, border enforcement and overall domain awareness. These facilities provided limited coverage of the AZRF – and apart from SAR operations and NSR protection, troops at these bases lack a genuine role and purpose.

Furthermore, the reconstruction of bases and airfields took place under the aegis of the armed forces because most infrastructure, equipment and hardware was supplied off the shelf via the established military logistics system. With cost-efficiency in mind, it is easier for the Kremlin to use the armed forces as cheap labour than to go through a lengthy process of civilian engineering and development. The armed forces built dual-use SAR infrastructure therefore to save both costs and time.

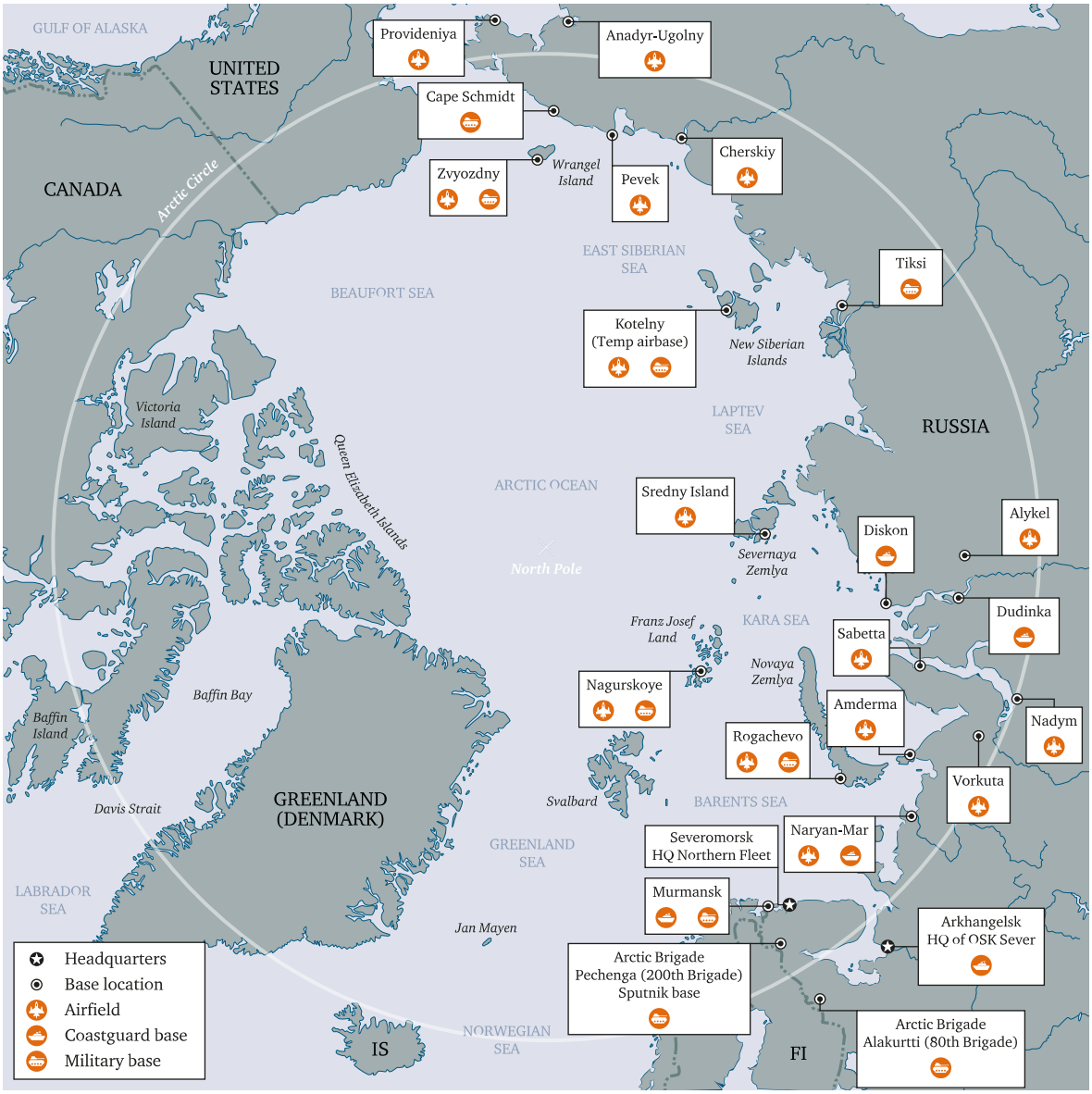
The development of Arctic military infrastructure slowed after Defence Minister Shoigu announced in December 2017 that the armed forces had finished building the Arctic bases;[49] this was taken as a sign that investments would dry up and that no new military facilities would be developed for the time being.

Russian infrastructure and logistical capabilities remain weak in the region, reflecting the difficult operating conditions there. Unpredictable weather affects air operations and radar coverage, extreme temperatures severely shorten battery life, and isolated bases require complex resupply operations for even the most basic goods. Magnetic storms and solar interference, caused by climate change, affect communications and the accuracy of satellite-based positioning systems.[50] Finally, sub-optimal daylight requires increased operations and capabilities for low-light and night-time conditions.

It is unlikely that continuous and complete radar coverage of the northern border could be achieved, as vast stretches of territory – especially in the Gulf of Ob south of the Kara Sea – would not be covered by radar systems.[51] This is a concern for the strategic submarine fleet, which is left without radar support.

[48] Eye on the Arctic (2018), 'Russia to build new military base in east Arctic', 4 September 2018, http://www.rcinet.ca/eye-on-the-arctic/2018/09/04/russia-base-arctic-tiksi-arctic-defence-military-northern-fleet/ (accessed 15 May 2019).
[49] Interfax (2017), 'Minoborony zayavilo o zavershenii stroitel'stva voennikh obyektov v Arktike' [The Ministry of Defence announced the completion of the construction of military facilities in the Arctic], 25 December 2017, https://www.interfax.ru/russia/593362 (accessed 15 May 2019).
[50] Le Mière, C. and Mazo, J. (2014), *Arctic Opening: Insecurity and Opportunity*, International Institute for Strategic Studies, Abingdon and New York: Routledge.
[51] Staun (2015), *Russia's Strategy in the Arctic*, p. 26

Map 1: Russian military infrastructure in the AZRF



Source: Author's research.

4. Arctic Force Structure

The development of Russia's Arctic-related military capabilities and forces is fundamentally linked to military reform undertaken by Defence Minister Anatoliy Serdyukov from 2007. The start of this process pre-dated the wars with Georgia in 2008 and Ukraine in 2014, as well as the current rise in tensions between Russia and the West. In short, the Arctic build-up should be interpreted as a strategic initiative in its own right, unconnected to recent conflict involving Russian interests in other theatres.

Since the mid-2010s, the Kremlin has deployed substantive force and capabilities along the coast of its northern border in the AZRF. Parts of the armed forces are now Arctic-capable, and have developed concepts of operations tailored to that environment.[52] With the creation of OSK Sever in 2013, the Russian armed forces have been slowly reshaping their Arctic command structure.[53] The Arctic forces are primarily focused on air and naval operations, with the aim of creating an integrated combined-arms force for the region.[54]

As well as seasonal rotations, Russian troops have been deployed permanently in the Arctic since 2013.[55] It should be noted that due to geography and the climate, the size of deployment ranges from that of a battalion (about 600 troops) for the smaller bases to that of a brigade (3,000 troops) for the larger bases.[56]

The Arctic Brigade

The mainstay of Russian troops under OSK Sever is the Arctic Brigade. It was formed in early 2015, in part from two army motorized infantry brigades: the 200th Separate Motor-rifle Brigade in Pechenga, and the 80th Separate Motor-rifle Brigade in Alakurtti. The Arctic Brigade is part of the 14th Army Corps, and is supplemented by Special Forces units from the 61st 'Red Banner' Naval Infantry Brigade. The main tasks of the Arctic Brigade are the protection of Russia's Arctic

[52] Connolly, G. E. (2017), *NATO and Security in the Arctic*, NATO Parliamentary Assembly Report, pp. 6–7, https://www.nato-pa.int/download-file?filename=sites/default/files/2017-11/2017%20-%20172%20PCTR%2017%20E%20rev.1%20fin%20-%20NATO%20AND%20SECURITY%20IN%20THE%20ARCTIC.pdf (accessed 15 May 2019).
[53] Novosti VPK (2018), 'Defence 24 (Polsha): Rossiya tochit zuby na Arktiku' [Defence 24 (Poland): Russia's anger builds up in the Arctic], 22 August 2018, https://vpk.name/news/225271_defence_24_polsha_rossiya_tochit_zubyi_na_arktiku.html (accessed 15 May 2019).
[54] Flake, L. E. (2014), 'Russia's Security Intentions in a Melting Arctic', *Military and Strategic Affairs*, 6(1): p. 107, https://www.inss.org.il/he/wp-content/uploads/sites/2/systemfiles/MASA6-1Eng%20(4)_Flake.pdf (accessed 15 May 2019).
[55] Under the jurisdiction of the FSB, the Federal Border Guard Service and the Coast Guard of the Border Service are also in charge of protecting Russia's external borders and AZRF coastline.
[56] Under the command of OSK Sever, there are several other units in the Murmansk oblast. Of particular interest is the 420th Naval Reconnaissance Spetsnaz Point (omrpSpN, frogmen) in Zverosovkhoz and the 45th Air Force and Air Defence Army (which includes the 1st Air Defence Division), formed in late 2015 for anti-aircraft, early-warning and surveillance purposes.

coastline, facilities and infrastructure (including that of the NSR), as well as escorting ships transiting through the NSR.[57]

The 200th Separate Motor-rifle Brigade is located at the Sputnik base in Pechenga, less than 15 km from the Norwegian border and some 65 km from Finland. Formerly belonging to the ground forces, it was subordinated to the Northern Fleet in late 2002. It was established from forces belonging to the 61st 'Red Banner' Naval Infantry Regiment, which itself was expanded into a brigade in 2014.[58] The 200th Brigade mostly serves as a mobile, all-purpose military unit equipped with heavy gear, including three motorized rifle units and a main battle tank (MBT) unit with Arctic-hardened T-80BVM tanks. It employs unmanned aerial vehicles (UAVs) for basic intelligence, surveillance and reconnaissance (ISR) operations. Deployment of an organic airborne battalion for increased mobility and response was long rumoured but has so far failed to materialize – this would have been a relatively new feature for combined-arms brigades.[59]

The 80th Separate Motor-rifle Brigade is deployed close to the village of Alakurtti, south of Murmansk and just 60 km from the Finnish border. Deployment took place in January 2015, ahead of time because of the Ukraine war and subsequent international reactions.[60] Formed from a pre-existing unit, the 80th Brigade is a high-mobility force specifically tailored to operate in Arctic conditions. Several systems were designed with the harsh climate in mind and deployed there, including: the MT-LBV armoured personnel carrier, which has wider tracks than the original MT-LB;[61] the TTM-1901 Berkut snowmobile, which is adapted to Arctic conditions; and the GAZ-3344-20 amphibious articulated personnel carrier.

The 80th is equipped with one battalion of 122-mm 2S1 Gvozdika self-propelled howitzers based on the MT-LB track. This makes it the first Arctic-capable unit equipped with organic artillery.[62] It is supported by recently deployed Tor-M2DT (NATO: SA-15 Gauntlet) and Pantsir-SA (NATO: SA-22 Greyhound) air defence systems, both adapted to Arctic conditions and based on the all-terrain DP-30PM vehicle. Air support is ensured by a small number of Mi-24 (NATO: Hind) attack helicopters as well as by Mi-8 rescue helicopters. The brigade is further strengthened by two air surveillance

[57] Frolov, I. E. (2015), 'Development of the Russian Arctic Zone: Challenges Facing the Renovation of Transport and Military Infrastructure', *Studies on Russian Economic Development*, 26(6): p. 564, https://link.springer.com/article/10.1134/S1075700715060040 (accessed 15 May 2019). See also Conley, H. (2016), *The New Ice Curtain: Russia's Strategic Reach to the Arctic*, Center for Strategic and International Studies, p. 83, https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/150826_Conley_NewIceCurtain_Web.pdf (accessed 15 May 2019).
[58] Vesti.ru (2014), 'Morskoi pekhoty v Arktike stanet bolshe' [There will be more naval infantrymen in the Arctic], 28 November 2014, http://www.vesti.ru/doc.html?id=2158990&mc_cid=fd0592b435&mc_eid=11ee4659ba (accessed 15 May 2019).
[59] Sutyagin, I. (2017), *The Russian Defence Posture in the Arctic*, House of Commons, 14 March 2017, http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/defence-subcommittee/defence-in-the-arctic/written/48797.html (accessed 15 May 2019).
[60] Sergunin, A. (2017), *Russian Military Strategies in the Arctic: Change and Continuity*, House of Commons, 6 February 2017, http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/defence-subcommittee/defence-in-the-arctic/written/46751.html (accessed 15 May 2019).
[61] Armyrecognition.com (2019), 'MT-LB multipurpose tracked armoured vehicle', 27 January 2019, https://www.armyrecognition.com/russia_russian_army_light_armoured_vehicle_uk/mt-lb_multipurpose_tracked_armoured_vehicle_technical_data_sheet_specifications_pictures_video.html (accessed 15 May 2019).
[62] Armyrecognition.com (2019), 'Russia arms itself for the Arctic', 2 July 2018, https://www.armyrecognition.com/july_2018_global_defense_security_army_news_industry/russia_arms_itself_for_the_arctic.html (accessed 15 May 2019).

regiments: the 331st and the 332nd Radio-Technical Regiments in Severomorsk and Arkhangelsk.[63] The 80th Brigade uses local means of transportation for rapid deployment – namely dog and reindeer sleds.[64]

Like many other units in the Russian armed forces, troops from the Arctic Brigade underwent rotations in Syria in 2015–18 to gain operational combat experience. The commander of the 61st Naval Infantry Brigade, Colonel Valeriy Fedyanin, was killed in September 2017 near Deir ez-Zor.[65] The 61st was also apparently present in Donbass in eastern Ukraine.[66] Arctic Brigade troops have not only been accumulating combat experience but have also been operationally overstretched.[67]

As elsewhere, Russia's Airborne Assault Troops (VDV) have an important role to play as an early-response spearhead supporting the Arctic Brigade. The 76th Guards Air Assault Division (Pskov) and the 98th (Ivanovo) Guards Airborne Division are assigned to protection of the Kola Peninsula. Alongside the 106th Guards Airborne Division (Tula), both have been practising Arctic-specific missions and exercises since at least 2014, on Arctic islands such as Kotelny, at sea and even close to the North Pole.[68] The majority of air-assault units in Russia have to undergo Arctic training.[69]

Russian Arctic troops have experienced a number of setbacks of late. As part of the Arctic Brigade, the 80th and 200th Separate Motor-rifle Brigades were due to be expanded into a single coastal defence division. Similarly, soon after the creation of the Arctic Brigade, rumours started to circulate about the creation of a second Arctic Brigade. Under the supervision of the Central military district, the 82nd Separate Motor-rifle Brigade was supposed to be sent to the Yamal Peninsula by 2017.[70]

Both plans seem to have been shelved for now, especially since several other units, and particularly the VDV, are now increasingly trained for Arctic conditions. These elements offer an extra edge for advanced deployment and a spearhead force for the Arctic Brigade. Plans to create a coastal defence division in the Chukotka Peninsula (to defend against a potential attack from Alaska)[71] are also unlikely to materialize.

[63] Regehr and Jackett (2018), 'Circumpolar Military Facilities of the Arctic Five'.
[64] Eye on the Arctic (2016), 'Arctic soldiers training with reindeer in Russia', 1 February 2016, http://www.rcinet.ca/eye-on-the-arctic/2016/02/01/arctic-soldiers-training-with-reindeer-in-russia/ (accessed 15 May 2019).
[65] Rbc.ru (2017), 'V Moskve ot poluchennikh v Sirii ran umer komandir brigady morskoi pekhoty' [In Moscow, the commander of the naval infantry brigade died of wounds in Syria], 1 October 2017, https://www.rbc.ru/society/01/10/2017/59d0eb1f9a794765768648ca?story=58c7ff469a7947398567fb3d (accessed 15 May 2019).
[66] Akai707 (2016), 'Russia's 61st Separate naval Infantry Brigade in the Donbass', Bellingcat, 15 November 2016, https://www.bellingcat.com/news/uk-and-europe/2016/11/15/russias-61st-separate-naval-infantry-brigade-donbass/ (accessed 15 May 2019).
[67] Baev, P. K. (2019), 'Threat Assessments and Strategic Objectives in Russia's Arctic Policy', *The Journal of Slavic Military Studies*, 32(1): pp. 25–40, https://doi.org/10.1080/13518046.2019.1552662 (accessed 15 May 2019).
[68] Åtland (2018), *The Building up of Russia's Military Potential in the Arctic Region*. See also Pettersen, T. (2014), 'Russian paratroopers conquer North Pole', *The Barents Observer*, 10 April 2014, http://barentsobserver.com/en/security/2014/04/russian-paratroopers-conquer-north-pole-10-04 and Sutyagin (2017), *The Russian Defence Posture in the Arctic*.
[69] Sutyagin, I. and Bronk, J. (2017), 'III. Geographical Distribution and Mission Assignments of Russian Military Units', *Whitehall Papers*, 89(1): p. 125, https://doi.org/10.1080/02681307.2017.1338472 (accessed 15 May 2019).
[70] Sutyagin (2017), *The Russian Defence Posture in the Arctic*.
[71] Tass.ru (2016), 'Divizia beregovoi oborony poyavitsa na Chukotskom napravlenii v 2018 godu' [The coastal defence division will appear on the Chukotka direction in 2018], 23 August 2016, https://tass.ru/armiya-i-opk/3560660 (accessed 15 May 2019).

The Northern Fleet

As the mainstay of OSK Sever, the Northern Fleet is responsible for military operations in the European Arctic (see Appendix). It fell into neglect after the collapse of the Soviet Union: the number of patrols substantially decreased, as did the number of operational assets, and the order of battle fell from about 100 combat-ready surface vessels to fewer than 40 today.[72] Only in the late 2000s did the Northern Fleet start to procure new hardware and modernize existing assets. It resumed patrols of the Arctic in the summer of 2008,[73] and by 2015 was demonstrating an increased operational presence consistent with the publication of Russia's new maritime doctrine in that year.

As in Soviet times, the Northern Fleet is not trying to achieve naval superiority in the Arctic.[74] Its primary task is to maintain strategic forces in a state of constant readiness, and to ensure the survivability both of infrastructure on the Kola Peninsula and of strategic submarine assets. Unhampered access to the North Atlantic through the Barents and Norwegian Seas and further west via the GIUK gap is another priority.[75]

Another key mission is the protection of the NSR and the coastline up to the Bering Sea – beyond which protection falls under the responsibility of the Pacific Fleet. Other Northern Fleet missions include protecting Russia's exclusive economic zone (EEZ) from illegal activities and environmental dangers, and ensuring safety of navigation.[76]

Such missions go beyond the traditional roles of a Russian fleet, and are closer to civilian tasks than purely military functions. Naval forces' involvement in them is explained by the lack of civilian actors able to carry out these missions.[77] Just as building SAR bases is easier using off-the-shelf military infrastructure, it is easier for such functions to be performed by the Northern Fleet.

Reflecting larger procurement trends in the navy under the state armament programmes (GPV) for 2020 and 2027, the Northern Fleet will remain a brown- and green-water force focused on protecting coastal areas and archipelagos along the NSR, and on denying foreign military forces access to the AZRF.[78] Meanwhile, its ocean-going ambitions will increasingly be tempered by the reality of procurement and modernization.

As with the rest of the navy, procurement of surface vessels is carried out both with the modernization of existing assets in mind and in order to provide smaller, more adaptable vessels

[72] Flake (2014), 'Russia's Security Intentions in a Melting Arctic', p. 102.
[73] Blank (2011), *Russia in the Arctic*, p. 58.
[74] Flake (2017), 'Contextualizing and Disarming Russia's Arctic Security Posture', p. 21.
[75] Åtland, K. (2011), 'Russia's Armed Forces and the Arctic: All Quiet on the Northern Front?', *Contemporary Security Policy*, 32(2): p. 270, https://doi.org/10.1080/13523260.2011.590354 (accessed 15 May 2019).
[76] *Rossiiskaia Gazeta* (2009), 'Osnovy Gosudarstvennoi Politiki Rossiiskoi Federatsii v Arktike'. See also The International Expert Council on Cooperation in the Arctic (2013), 'The development strategy of the Arctic zone of the Russian Federation'.
[77] Granholm, N., Carlsson, M. and Korkmaz, K. (2016), *The Big Three in the Arctic: China's, Russia's and the United States' strategies for the new Arctic*, FOI, p. 24, https://www.foi.se/rapportsammanfattning?reportNo=FOI-R--4296--SE (accessed 14 May 2019).
[78] Connolly, R. and Boulègue, M. (2018), *Russia's New State Armament Programme: Implications for the Russian Armed Forces and Military Capabilities to 2027*, Research Paper, London: Royal Institute of International Affairs, p. 20, https://www.chathamhouse.org/sites/default/files/publications/research/2018-05-10-russia-state-armament-programme-connolly-boulegue-final.pdf (accessed 15 May 2019).

equipped with stand-off missile systems, notably Kalibr-NK land-attack cruise missiles (NATO: SS-N-Sizzler) and P-800 Oniks anti-ship cruise missiles. With the addition of several ice-class ships in the 2020s, the Northern Fleet will be able to conduct sea denial and interdiction missions in light-ice conditions, although at a limited operational tempo (see Appendix).

> If the Northern Fleet is supposed to be an 'Arctic fleet', the problem is that the majority of its assets are not Arctic-specific, operating beyond the region and in other strategic directions.

The Northern Fleet is ageing and not in particularly good order. As is the case elsewhere in the Russian armed forces, the Northern Fleet lacks air mobility assets,[79] and most importantly transport aircraft for troops, mid-air refuelling tankers for strategic aviation, and patrol aircraft for ASW operations. Unless substantive investment is made to revamp the Northern Fleet, it will become merely a 'Bastion guardian' for the strategic submarine fleet – thus limiting its blue-water capabilities and its historic role as a force multiplier for other fleets.

If the Northern Fleet is supposed to be an 'Arctic fleet', the problem is that the majority of its assets are not Arctic-specific, operating beyond the region and in other strategic directions.[80] This situation is worsened by the Northern Fleet's general lack of ice-class surface vessels and its heavy reliance on Rosatomflot civilian icebreakers to ensure passage along the NSR and transit in ice conditions east of the Barents Sea and Novaya Zemlya.[81] This 'icebreaker gap'[82] in Russia does not help the range of operations of the Northern Fleet.

The entry into service of the Northern Fleet's first icebreaker of its own, the *Ilya Muromets*, in 2018 alleviated this situation somewhat.[83] However, the presence of one ice-class ship does not provide complete operational superiority. The overall dearth of ice-class platforms leaves surface assets vulnerable and exposed,[84] and limits their range of operations. This further underlines the point that the Kremlin will seek to push any hostilities away from the Arctic.

[79] Sutyagin (2017), *The Russian Defence Posture in the Arctic*.
[80] Foxall, A. (2017), *Russia's Policies towards a Changing Arctic: Implications for UK Security*, Russia Studies Centre, Research Paper No. 12, The Henry Jackson Society, p. 9, http://henryjacksonsociety.org/wp-content/uploads/2017/09/Russias-Policies-towards-a-Changing-Arctic-1.pdf (accessed 15 May 2019).
[81] Golts, A. (2016), 'Russian Military Build-Up in Arctic Highlights Kremlin's Militarized Mindset', *Eurasian Daily Monitor*, 13(139), 1 August 2016, https://jamestown.org/program/russian-military-build-up-in-arctic-highlights-kremlins-militarized-mindset/ (accessed 15 May 2019).
[82] The 'gap' usually refers to the asymmetry in the number of icebreakers between the US and Russia. See Gao, C. (2018), 'The "Icebreaker Gap": How Russia is Planning to Build More Icebreakers to Project Power in the Arctic', *The National Interest*, 19 August 2018, https://nationalinterest.org/blog/buzz/icebreaker-gap-how-russia-planning-build-more-icebreakers-project-power-arctic-29102 (accessed 15 May 2019).
[83] The diesel-electric icebreaker *Ilya Muromets* (Project 21180) entered into active service in Severomorsk in early 2018. A second platform is scheduled for construction but will not enter the Northern Fleet before the late 2020s. In the future, the fleet should operate a new class of patrol icebreakers under Project 23550.
[84] Baev, P. K. (2017), *Russia's Geopolitical Ambitions and Military Activities in the Arctic*, House of Commons, 30 January 2017, http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/defence-subcommittee/defence-in-the-arctic/written/46259.html (accessed 15 May 2019).

Arctic-specific military technology

The armed forces are developing new technologies to adapt operations to the Arctic environment. Since Russia created its domestic drone industry in the late 2000s, UAVs have been introduced in the Northern Fleet for ISR purposes (SAR, navigation assistance, coastal surveillance, etc.). The Northern Fleet is exploiting a fleet of Gorizont, Forpost and Orlan-10 UAVs.[85] These platforms are hardened for Arctic conditions and tested in extreme weather. A UAV unit was set up in Anady-Ugolny in 2015.[86] Larger drones, when they enter service in the army, will probably be used to resupply the remotest bases in the future.

Arctic-specific land platforms are also being developed. The Arctic Brigade is operating upgraded T-80BVM MBTs and BTR-82A armoured personnel carriers (for assault landing), both adapted to Arctic conditions. Current plans to host some 100 T-80 MBTs at Arctic bases are somewhat unrealistic.[87] The armed forces have procured snow-going all-terrain vehicles (ATVs) such as the Chaborz M-3 combat buggy developed by the Chechnya-based University of Spetsnaz,[88] the TTM-4902PS-10 Ruslan two-link tracked ATV carrier,[89] and the amphibious scouting Trekol ATV. The Arctic Brigade uses snowmobiles equipped with cargo holds, such as the TTM-1901-40 Berkut-2 and the A-1 double snowmobile, for patrol operations.

Another innovative technology relates to deep-sea communication cables. In April 2018, Russia announced the laying of a trans-Arctic fibre-optic cable supposed to link military facilities on the Arctic seabed from Kola to Vladivostok.[90] Interestingly, the *Yantar* oceanographic research vessel, which entered service in October 2015, is rumoured to be a spy ship gathering information on communication cables.[91]

Because the environment is physically inhospitable, Russia is investing in innovative means of ensuring perimeter control and enforcing border security: underwater drone technology, space-based assets, small satellites to ensure better coverage, and smart conventional weapons to limit the need for troops on the ground. However, these alternative means of securing the Arctic have longer development time horizons, and are unlikely to be in place before the 2030s or 2040s at the earliest.

[85] Federal'noe Agenstvo Novostei (2017), 'VMF RF sformiruet polki bespilotnikh letatel'nikh apparatov' [The Russian Navy will form shelves of unmanned aerial vehicles], 28 March 2017, https://riafan.ru/686147-vmf-rf-sformiruet-polki-bespilotnyh-letatelnyh-apparatov (accessed 15 May 2019).
[86] Granholm, Carlsson and Korkmaz (2016), *The Big Three in the Arctic*, pp. 28–29.
[87] Sukhankin, S. (2018), 'Russia's Push for Militarization of the Arctic Continues', *Eurasian Daily Monitor*, 15(93), 18 June 2018, https://jamestown.org/program/russias-push-for-militarization-of-the-arctic-continues/ (accessed 15 May 2019).
[88] Staalese, A. (2018), 'Chechens developed combat vehicle for Arctic operations', *The Barents Observer*, 11 May 2018, https://thebarentsobserver.com/en/security/2018/05/chechens-developed-combat-vehicle-arctic-operations (accessed 15 May 2019).
[89] Ministry of Defence of the Russian Federation (2016), 'Arkticheskie motostrelki Severnogo flota osvaivayut vozhdenie unika'nikh vezdekhodov' [Arctic motorized infantry of the Northern Fleet master driving unique all-terrain vehicles], 15 January 2016, https://structure.mil.ru/structure/okruga/west/news/more.htm?id=12073818 (accessed 15 May 2019).
[90] *Izvestiya* (2018), 'Arktiku oputayut kabelyamy' [The Arctic gets entangled with cables], 23 April 2018, https://iz.ru/733829/aleksei-ramm-evgenii-dmitriev-bogdan-stepovoi/arktiku-oputaiut-kabeliami (accessed 15 May 2019).
[91] Sanger, D. E. and Schmitt, E. (2015), 'Russian Ships Near Data Cables Are Too Close for U.S. Comfort', *New York Times*, 25 October 2015, https://www.nytimes.com/2015/10/26/world/europe/russian-presence-near-undersea-cables-concerns-us.html?_r=0 (accessed 15 May 2019).

Finally, experience in the Arctic is influencing military research and development. In 2018, arms manufacturer Kalashnikov unveiled several pieces of tactical gear, including a body suit,[92] for Special Forces soldiers. Military research also presented a blood substitute that can be used in extreme conditions.[93] These are marginal advancements, but they show that Arctic operations are being thought through comprehensively in the Kremlin.

Arctic training and exercises

The operational experience and mobility of Russia's Arctic forces have been honed through repeated military exercises since 2015, when Arctic training resumed.[94] Drills now encompass a vast array of missions, with capabilities reinforced with Arctic-specific hardware.

Exercises mostly focus on the overall combat readiness of the Northern Fleet and Arctic-capable troops, military logistics over long distances and border defence.[95] During the Vostok-2018 exercise, the Northern Fleet conducted large-scale operations off the Pacific coast, passing twice through the NSR after spending two months at sea.[96] The armed forces emphasize survival and cold-weather training. Most air-assault units in Russia reportedly have to undergo Arctic training.[97] Arctic-specific training is also used on sea mammals, according to reports of recent developments[98] – although it is hard to assess the veracity of these reports or the overall usefulness of such training.

The training of troops focuses on rapid-reaction deployments,[99] coastal assault landings,[100] amphibious assault operations with naval artillery support,[101] fighter aircraft strikes onshore (such

[92] Tass.ru (2018), 'Kontsern "Kalashnikov" razrabotal arkticheskuyu ekipirovku dlya podrazdelenii spetsnaza' [Concern "Kalashnikov" developed Arctic equipment for special forces units], 27 September 2018, https://tass.ru/armiya-i-opk/5612356 (accessed 15 May 2019).
[93] VPK Novosti (2018), 'Polyarnoe khladnokrovie: dlya Arktiki sozdayut nezamerzayushchie fizrastvory' [Polar coolness: antifreeze saline solutions are being created for the Arctic], 14 November 2018, https://vpk.name/news/234580_polyarnoe_hladnokrovie_dlya_arktiki_sozdayut_nezamerzayushie_fizrastvoryi.html (accessed 15 May 2019).
[94] Geber, N. (2015), 'Russia's Arctic Policy: Objectives and Prospects', *Journal of Public and International Affairs*, p. 37, https://jpia.princeton.edu/sites/jpia/files/2015.pdf (accessed 15 May 2019).
[95] Klimenko (2016), *Russia's Arctic Security Policy*, p. 23.
[96] Staalesen, A. (2018), 'As Arctic flotilla enters Barents Sea, it is joined by FSB Coast Guard', *The Barents Observer*, 8 October 2018, https://thebarentsobserver.com/en/security/2018/10/arctic-flotilla-enters-barents-sea-it-joined-fsb-coast-guard (accessed 15 May 2019).
[97] Sutyagin and Bronk (2017), 'III. Geographical Distribution and Mission Assignments of Russian Military Units', p. 125.
[98] Roblin, S. (2019), 'The Real "Submarines": Check Out Russia's Combat Dolphins, Spy Whales and Killer Seals', *The National Interest*, 4 May 2019, https://nationalinterest.org/blog/buzz/real-submarines-check-out-russia%E2%80%99s-combat-dolphins-spy-whales-and-killer-seals-55667 (accessed 15 May 2019).
[99] Golts (2016), 'Russian Military Build-Up in Arctic Highlights Kremlin's Militarized Mindset'. See also Ministry of Defence of the Russian Federation (2018), 'Na Severnom flote nachalis' ucheniya soedineniy sukhoputnykh i beregovykh voysk' [Exercises of ground and coastal troops began in the Northern Fleet], 4 April 2018, https://function.mil.ru/news_page/country/more.htm?id=12169871@egNews (accessed 15 May 2019).
[100] VPK Novosti (2018), 'Arkticheskaya gruppirovka Severnogo flota vpervye vysadit desant v rayone Tiski' [Arctic grouping of the Northern Fleet will land for the first time in the area of Tiksi], 28 August 2018, https://vpk.name/news/225959_arkticheskaya_gruppirovka_severnogo_flota_vpervyie_vyisadit_desant_v_raione_tiksi.html (accessed 15 May 2019). See also Ministry of Defence of the Russian Federation (2016), 'Podrazdelenie arkticheskoi brigady Severnogo flota v khode ucheniya vysadilis' na poberezzhie ostrova Zampya Aleksandry' [The divisions of the Arctic brigade of the Northern Fleet first landed on the coast of the island of Alexandra Land during the exercise], 30 September 2016, https://structure.mil.ru/structure/okruga/north/news/more.htm?id=12098051@egNews (accessed 15 May 2019).
[101] Baev, P. K. (2018), 'Russia's Ambivalent Status-Quo/Revisionist Policies in the Arctic', *Arctic Review on Law and Politics*, 9: p. 414, https://doi.org/10.23865/arctic.v9.1336 (accessed 15 May 2019).

as the mock attack on the Vardø radar installations in Norway) and anti-sabotage operations.[102] This essentially means that the Russian armed forces are training to push the fight away from the Arctic as much as possible, and to establish an out-of-area defensive perimeter through sea denial.[103] This is justified by the need to ensure the security of the Kola Peninsula and freedom of navigation for the Northern Fleet.

Since 2014, Russia has been parachuting in troops at 89° north, less than 100 km from the North Pole. Every year, using the temporary Barneo base, some 100 airborne troops operate an outpost for about one month in April.[104] VDV units from Pskov (the 76th Guards Air Assault Division), Ivanovo (the 98th Guards Airborne Division) and Tula (the 106th Guards Airborne Division) rehearse survival techniques and rescue operations.[105] The physical presence of Russian forces close to the North Pole shows there is still a perception, lingering from Soviet times, that attacks from US long-range strategic aviation could come from the North Pole. An increased NATO and US presence in the North Atlantic, Greenland, the North Pacific and the Bering Strait would be assessed as a liability for Russia's security. This explains why the Arkhangelsk Air Defence Sector remains paramount to North Pole monitoring and early warning.[106]

Russian troops have now been training in Arctic conditions for more than four years, and many troops from the Arctic Brigade have received live combat experience in Syria. However, it is hard to assess the overall level of preparedness for Arctic conditions, especially considering the harsh climate and hostile physical environment. The upcoming military exercise Tsentr-2019, starting in August 2019, will feature an important Arctic component and will provide important lessons for observers in the West.[107]

[102] Tass.ru (2018), 'Korabli Severnogo flota proveli ucheniya po protivodiversionnoy oborone v Chukotskom more' [Ships of the Northern Fleet held an anti-sabotage defence exercise in the Chukchi Sea], 20 September 2018, https://tass.ru/armiya-i-opk/5586324 (accessed 15 May 2019).
[103] Defence Sub-Committee (House of Commons) (2017), *Oral evidence: Defence in the Arctic.*
[104] Regehr and Jackett (2018), 'Circumpolar Military Facilities of the Arctic Five'.
[105] Eye on the Arctic (2015), 'North Pole camp for Russian paratroopers', 26 March 2015, http://www.rcinet.ca/eye-on-the-arctic/2015/03/26/north-pole-camp-for-russian-paratroopers/ (accessed 15 May 2019).
[106] Konyshev, V. and Sergunin, A. (2014), 'Is Russia a Revisionist Military Power in the Arctic?', *Defense & Security Analysis*, 30(4): p. 324, https://doi.org/10.1080/14751798.2014.948276 (accessed 15 May 2019).
[107] Buchanan, E. and Boulègue, M. (2019), 'Russia's Military Exercises in the Arctic Have More Bark Than Bite', *Foreign Policy*, 20 May 2019, https://foreignpolicy.com/2019/05/20/russias-military-exercises-in-the-arctic-have-more-bark-than-bite/.

5. Russia's Arctic Military Intentions

The Arctic as a theatre of operation

Russia sees the Arctic as a military continuum between theatres of operation in the Baltic Sea, the North Atlantic and ultimately as far away as the North Pacific.[108] In terms of operations, however, the entire Arctic falls under the specific command of OSK Sever all the way from the Atlantic to the Pacific. The Arctic is not part of an operational continuum with the Baltic Sea, which is under the responsibility of a different command.

Keeping the Arctic as a separate area of operation is impossible: what happens in the Arctic, Moscow would argue, does not begin in the Arctic and nor would it stay there. This applies both to 'vertical escalation' (i.e. military flashpoints that would enlarge in geographical scope towards the Arctic as violence expanded) and to 'horizontal escalation' (i.e. a spill-over effect from another theatre of operation, notably the Baltic Sea). The same logic also applies to situations combining a mix of both vertical and horizontal escalation, for example if a local outbreak of violence were to spread out across the Arctic during a theatre-wide conflict. Indeed, military assets and concepts of operations in the Russian Arctic are part of a wider, coordinated strategy.

The military leadership is opposed to the idea of starting a conflict in the Arctic. On the contrary, it would aim to push any conflict away from the region towards SLOC in the North Atlantic and towards the Baltic Sea. The goal would be to remove tensions from the Russian Arctic as quickly as possible, and to establish perimeter control for protection of the Kola Peninsula. This is justified by the necessity of ensuring the survivability of Russia's sea-based nuclear deterrent, as well as for ensuring freedom of navigation for the Northern Fleet and strategic submarines.

As elsewhere, Russia's primary threat perception in relation to the Russian Arctic concerns NATO's military capabilities and projected intentions. Russia's approach to the region is therefore not about the Arctic itself, but about mitigating the potential impact of the presence of NATO and US troops beyond the North Atlantic. Seen from the Kremlin, most of the Arctic *is* Russian, and the non-Russian Arctic *is* NATO. Indeed, four of the five Arctic coastal nations are members of NATO.

Any move from NATO and its allies to build military capabilities in the Arctic, whether through exercises or posturing, will undoubtedly feed Russia's 'besieged fortress' logic. In broad terms, the Kremlin is concerned that NATO forces could challenge Russia's sense of military superiority in the region.[109] This could endanger the understanding that the Arctic should remain as a designated 'low tension' area, thus pushing Russia to overreact and increasing the risk of miscalculation.

[108] Sergunin and Konyshev (2017), 'Russian military strategies in the Arctic', p. 173.
[109] Defence Sub-Committee (House of Commons) (2017), *Oral evidence: Defence in the Arctic*.

Is Russia 'militarizing' the Arctic?

One of the principal debates around Russia's military activity in the Arctic relates to whether Moscow is 'militarizing' the AZRF. Clarifying this issue is important. Although the scope of military activity in the Russian Arctic seems impressive in isolation, it is not commensurate either with the region's geographical scale or with the nature of the theatre of operation. Overall, the presence of Russian troops and assets remains sparse and fragmented in relative terms.

Most Russian capabilities are not intended to project offensive means but merely to *take back control* of the Arctic coast and waters along the AZRF. Russia has a fundamentally defensive understanding of the Arctic. Russian military capabilities and deployments should be assessed in terms of perimeter defence – involving the Bastion concept of protection for the Kola Peninsula and Russia's sea-based nuclear deterrent.

With military capabilities in disarray since the fall of the Soviet Union, the rebuilding of Russian forces is starting from a very low point.[110] Even today, following several years of modernization, deployments fall short of their Soviet equivalents. In this context, Russia is simply re-establishing a military presence that used to be the norm during the Cold War. This pattern is not Arctic-specific *per se*, but is a trend observed in other military districts and in a broader perspective.[111]

There is indeed 'militarization' of the AZRF, but deployments and activities remain for now 'more eyes and ears than muscle'.[112] Russia's military presence in the Arctic is also a reflection of a broader trend observed in other theatres. As such, Russia's build-up is more a military reinvestment *in* the Russian Arctic than *for* the Arctic.[113] By the same logic, strategic assets on the Kola Peninsula happen to be located in the Arctic but do not affect the region itself in terms of operations.[114] Military thinking is driven by the imperative to bridge existing vulnerabilities due to 'fading control'[115] in a region where Russia used to consider itself invulnerable; recent deployments aim to fill these perceived gaps. As so often in Russia, any vacuum is filled by military means.

From a Western perspective, Russia is securitizing the AZRF with military assets to protect its national interests there. Although 'non-militarized securitization'[116] of the Russian Arctic seems like a contradiction in terms, it is the case in practice. With climate change in mind, Russian military activities are anticipatory and show long-term planning for a changing environment.[117] Maintaining a permanent, combat-ready presence is key to this logic as retreating sea ice renders the northern border increasingly vulnerable. The Russian leadership's aim is to make military assets in the AZRF more mobile and better trained and equipped for perimeter defence and border protection.

[110] Pezard (2018), *The New Geopolitics of the Arctic*, p. 4.
[111] Pezard et al. (2017), *Maintaining Arctic Cooperation with Russia*.
[112] See statement by Anton Lavrov during the panel 'Military Issues: Realities on the Ground' at the 2016 Conference on U.S.-Russia Relations in the Arctic: https://harriman.columbia.edu/event/conference-us-russia-relations-arctic.
[113] The author gives credit for this quote to Jørgen Meedom Staun.
[114] Baev (2018), 'Russia's Ambivalent Status-Quo/Revisionist Policies in the Arctic', p. 410. See also Klimenko (2016), *Russia's Arctic Security Policy*, p. 20.
[115] Sutyagin (2017), *The Russian Defence Posture in the Arctic*.
[116] Khrushcheva, O. and Poberezhskaya, M. (2016), 'The Arctic in the Political Discourse of Russian Leaders: The National Pride and Economic Ambitions', *East European Politics*, 32(4): p. 559, https://doi.org/10.1080/21599165.2016.1231669 (accessed 15 May 2019).
[117] Sergunin and Konyshev (2017), 'Russian military strategies in the Arctic'.

Russia's Arctic military build-up should not be overestimated. Assets deployed there can undoubtedly be used for offensive purposes, but Moscow's intentions are not in that vein, at least for now. Just as military capabilities in the Russian Arctic are fundamentally dual-use in nature, they do not yet have an aggressive contour. At best, they perform Russia's chest-thumping reassertion and act as a 'repellent more than deterrent'.[118] They are intended to intimidate Arctic neighbours and NATO during peacetime – and to disrupt operations in wartime.

Should the Kremlin's existing interests in the region fade over time (energy extraction, exploitation of the NSR, seabed claims etc.), the Russian military presence in the Arctic might actually diminish, even potentially prompting a 'demilitarization' of the region.[119] This would happen if Moscow did not manage to transform military might into political dividends internally.

Incidents at sea and the risk of miscalculation

While Arctic deployments are justified in the eyes of the Kremlin, there is also the question as to whether they are *legitimate* and *tolerable* for the West. Russia's military interests in the Arctic pre-date the war with Ukraine, but Western perceptions that Russia is a regional threat have been reinforced by the events of 2014 in Ukraine.[120] Russia went from being an 'acceptable' Arctic partner to a threatening neighbour. Indeed, the logic goes that the depth and extent of Russian military activities by far surpass the country's basic needs for sovereignty enforcement, border protection and SAR activities.[121]

A potential cause for concern in the West is the growing asymmetry of power and means with Russia across all operational domains in the Arctic.[122] The Russian armed forces have developed Arctic-specific concepts of operations and tactics, alongside Arctic-capable combat systems. Overall, the combination of the presence of Russian military assets and continued tensions with the West increases the risk of miscalculation.

As Russia's perceived military superiority will be challenged by receding ice and a greater international presence in the Arctic, the Kremlin might be tempted to opt for a more militarized understanding of the region. The war with Ukraine has already affected established cooperation mechanisms in the region.[123] The Kremlin might feel that there are fewer incentives to cooperate with the West or with existing Arctic institutions, primarily the Arctic Council, especially if seeking to secure a position of power and bolster patriotic messages at home.[124]

[118] Staun (2015), *Russia's Strategy in the Arctic*.
[119] Baev (2019), 'Threat Assessments and Strategic Objectives in Russia's Arctic Policy', p. 37.
[120] Käpylä, J. and Mikkola, H. (2015), *On Arctic Exceptionalism: Critical Reflections in the Light of the Arctic Sunrise Case and the Crisis in Ukraine*, Helsinki: The Finnish Institute of International Affairs, Working Paper 85, p. 12, https://www.fiia.fi/wp-content/uploads/2017/01/wp85.pdf (accessed 15 May 2019).
[121] Conley (2016), *The New Ice Curtain*. See also 'Security Challenges in the Arctic and their Implications for NATO', Berlin: German Council on Foreign Relations, 27 October 2016, https://dgap.org/en/node/28897 (accessed 15 May 2019).
[122] Flake (2014), 'Russia's Security Intentions in a Melting Arctic', p. 100.
[123] Käpylä and Mikkola (2015), *On Arctic Exceptionalism*, p. 12.
[124] Baev, P. K. (2015), 'Russia's Arctic Aspirations', in Jokela, J. (ed.) (2015), *Arctic Security Matters*, EUISS Issue Report No. 24, p. 54, https://www.iss.europa.eu/sites/default/files/EUISSFiles/Report%2024.pdf (accessed 15 May 2019).

In this context, it should be noted that the Arctic was not always construed as a 'zone of peace' in the Kremlin, and there is now the risk that military priorities might override the cooperation narrative[125] – particularly in a post-Putin environment. This is highly relevant for incidents at sea, which represent a potential risk of escalation and policy errors.[126] Whereas previous incidents were typically either settled at sea peacefully or managed diplomatically through practical coastguard cooperation, there is always the risk that future incidents might become securitized.[127] Channels of communication have been greatly diminished since 2014, and practices that were in place during past incidents have not been properly tested in the current geopolitical environment.

Furthermore, Russia's behaviour during the *Arctic Sunrise* incident showed how seriously the Kremlin takes perimeter defence and the protection of its economic resources. In September 2013, the crew of the Greenpeace ship *Arctic Sunrise* were forcibly detained after attempting to climb an oil rig in Russia's EEZ. The incident demonstrated Moscow's interdiction intentions and ability to react through military force, even to civilian incursions in (or even close to) Russia's EEZ.

Box 1: Tension around Svalbard

The Northern Fleet has been patrolling the area around the Svalbard archipelago since 2004, and is maintaining a visible presence both physically in Barentsburg through investments and through rhetoric against Norway.

Russia nurtures grievances against Norway over the status of the Svalbard archipelago, and these grievances carry the risk of raising tensions. Moscow argues that Norway is not abiding by Article 9 of the Svalbard Treaty, which stipulates that the archipelago cannot be used for 'warlike purposes' (namely for permanent military fortifications and naval bases) unless for self-defence. While Russia sees Article 9 as a complete demilitarization clause, Oslo understands it as not prohibiting all military activity or coastguard operations. Article 9 remains unclear, and Russia uses it to denounce Norway's operation of radar installations and satellite stations such as the European Incoherent Scatter Scientific Association (EISCAT) radar, the SvalSat satellite station, and the SvalRak rocket range in Ny-Ålesund. According to the Kremlin, these installations are part of NATO efforts to destabilize Russia and to conduct intelligence operations against Russian long-range aviation capabilities and SLBM launches.

Past incidents at sea involving fishing boats in the fisheries protection zone (FPZ) fuel Oslo's security concerns. The Russian military drill Zapad-2017 sparked controversy when the pro-defence blog Aldrimer published an article arguing that the Northern Fleet and Airborne troops (VDV) had simulated several amphibious assault landings on Svalbard. This was refuted by Norwegian authorities and NATO, but nevertheless fed the national debate in Norway around the protection of the archipelago from a potential Russian threat and around NATO's Article 5 commitment.

[125] Le Mière and Mazo (2014), *Arctic Opening*.
[126] Pezard, S., Tingstad, A. and Hall, A. (2018), *The Future of Arctic Cooperation in a Changing Strategic Environment: Insights from a Scenario-Based Exercise Organised by RAND and Hosted by NUPI*, Santa Monica: RAND Corporation, https://www.rand.org/content/dam/rand/pubs/perspectives/PE200/PE268/RAND_PE268.pdf (accessed 15 May 2019).
[127] Previous examples of incidents in the fisheries protection zone (FPZ) of Svalbard involving the Norwegian and Russian coastguards include cases such as that of the *Chernigov* in 2001, the *Elektron* in 2005 and the *Sapphire II* in 2011. See Østhagen, A. (2018), 'Managing Conflict at Sea: The Case of Norway and Russia in the Svalbard Zone', *Arctic Review on Law and Politics*, 9: pp. 100–23, https://doi.org/10.23865/arctic.v9.1084 (accessed 15 May 2019). See also Åtland, K. and ven Bruusgaard, K. (2009), 'When Security Speech Acts Misfire: Russia and the Elektron Incident', *Security Dialogue*, 40(3): pp. 333–54, https://doi.org/10.1177/0967010609336201 (accessed 15 May 2019).

6. Military Implications for Other Arctic States, NATO and its Partners

Security does not work in a vacuum, and it is today impossible to keep the Arctic isolated from the wider security context involving Russia and the West.[128] In this regard, the Arctic is no longer exceptional.

For this reason, it is time to begin a more inclusive debate and set up a regulatory framework around military security in the Arctic.[129] Arctic states need to address Arctic military affairs. Innovative efforts can be made to strengthen military security and domain awareness in the Arctic, without militarizing the region and while maintaining its 'low tension' status.

Dealing with the risk of miscalculation

The wider geopolitical context in terms of relations between Russia and the West has already spilled over into the Arctic and has affected security dialogue.[130] As elsewhere, the atmosphere of mistrust and animosity fosters a lack of appetite for engagement, especially on security issues.[131]

Sources of potential miscalculation are numerous. Russia's perception of its own strength and superiority in the Arctic could embolden it and make it more assertive, heightening the risk of miscalculation and the potential for policy errors, whether in the soft security or military realms. The recent tightening of navigational conditions along the NSR, for instance, points to this possibility.[132]

Increased human activity in Arctic waters will also undoubtedly lead to more incidents at sea and environmental accidents, which will require careful management to ensure they do not escalate.

[128] Jágerský, I. (2016), 'Russia's Interests And Militarization of the Arctic', *Journal of International Relations*, IX(4): pp. 328–40, http://fmv.euba.sk/www_write/files/dokumenty/veda-vyskum/medzinarodne-vztahy/archiv/2016/42016/MV_2016_1_328-340_Jagersky_97-2003.pdf (accessed 15 May 2019).
[129] Connolly (2017), *NATO and Security in the Arctic*, p. 3.
[130] Käpylä, J. and Mikkola, H. (2019), 'Contemporary Arctic Meets World Politics: Rethinking Arctic Exceptionalism in the Age of Uncertainty', in Finger, M. and Heininen, L. (eds) (2019), *The Global Arctic Handbook*, Cham: Springer. See also Klimenko (2015), 'Russia and the Arctic'.
[131] Russian International Affairs Council (2016), *Russia and the US in the Arctic*, Working Paper 30, p. 4, https://russiancouncil.ru/upload/Russia-USA-Arctic-Paper30-en.pdf (accessed 15 May 2019).
[132] Strict regulations are already in place for vessels with foreign flags, including requirements for advance notification of passage and the use of Russian icebreakers as escorts. New provisions in 2017 prohibit the transport of Russian energy resources by vessels that are not registered under a Russian flag or built in a Russian shipyard. These stringent regulations are contrary to the freedom-of-navigation rules under the UN Convention on the Law of the Sea (UNCLOS). Since early 2019, Russian authorities have further tightened the conditions of passage for foreign military assets, including submarines: such vessels will no longer be able to transit without providing advance notification to the authorities. In practice, this is a legal manoeuvre denying the provision for innocent passage under UNCLOS. See Novosti VPK (2018), 'Rossiya ogranichit inostrannym voennym korablyam prokhod po Sevmorputi' [Russia will limit the passage of the Northern Sea Route to foreign military vessels], 3 December 2018, https://vpk.name/news/236679_rossiya_ogranichit_inostrannyim_voennyim_korablyam_prohod_po_sevmorputi.html (accessed 15 May 2019).

Conflicting seabed claims between Arctic nations, competition over energy exploration,[133] legal and illegal fishing activities and other issues are further causes for concern.[134] Even day-to-day activities such as routine patrols or the exercise of freedom of navigation can produce misunderstandings that could escalate into tension.[135]

Arctic nations should be aware that more military activity, especially on Russia's side, could result in the kind of geopolitical and security tensions involving Russia and the West that already exist in other theatres.[136] If an incident spills over from one theatre to another, the Arctic must remain an area of 'low tension'. To manage the risk of miscalculation, two priorities should prevail: re-engaging Russia and establishing a common military code of conduct for the Arctic.

Re-engaging Russia in the Arctic

The Arctic is a place where military confidence-building measures (CBMs) could be employed in order to maintain the region's 'low tension' status and the sense of the Arctic as deserving of exceptionalism as a zone of peace. The format for such discussions, however, needs careful consideration. The Arctic Council is not equipped for military security discussions,[137] and other existing formats are not quite fit for purpose.[138] Short of a dedicated forum for military security discussions, the best existing format for such engagement is the Arctic Security Forces Roundtable (ASRF).

The ASRF has been meeting since 2011. It includes the Arctic Eight as well as other interested countries such as the UK and France, but Russia has not attended since 2013. The ASRF is an important format where soft security and shared challenges are discussed. It is an important first step towards a regional security architecture,[139] and is also the only format where hard security issues are actually addressed.[140] Russia should be invited to return to this roundtable.

Efforts should concentrate on proving to the Kremlin that cooperation is in everybody's interest,[141] and that Russia will face the same negative security consequences of climate change as every other state. Regular Track 2 and Track 1.5 discussions on military security matters should be initiated. They should include low-level people-to-people interaction between officers of the Arctic Eight.

[133] That said, the fact that the vast majority of discovered oil and gas deposits in the Arctic are located within undisputed and clearly delineated national EEZs weakens the narrative that an 'energy race' or 'scramble for resources' is under way in the region. See Le Mière and Mazo (2014), *Arctic Opening*.
[134] The Arctic Institute (2018), 'Areas of (no) conflict in the Arctic', 1 May 2018, https://www.thearcticinstitute.org/areas-no-conflict-arctic/ (accessed 15 May 2019).
[135] Pezard et al. (2017), *Maintaining Arctic Cooperation with Russia*, p. 134.
[136] Olesen, M. R. (2014), *Cooperation or Conflict in the Arctic: A Literature Review*, DIIS Working Paper 2014:08, Copenhagen: Danish Institute for International Studies, p. 16, http://pure.diis.dk/ws/files/70921/wp2014_08_Runge_Olesen_for_web.pdf (accessed 15 May 2019).
[137] The Arctic Council is an intergovernmental forum whose mandate does not include military security affairs. This should remain so, at least for the sake of preserving the 'low tension' environment in the Arctic. Furthermore, directly placing military security on the agenda of the Arctic Council would undoubtedly diminish Russia's willingness to cooperate there.
[138] Several multilateral soft security platforms involving Russia are in place. These include the Barents Euro-Arctic Council (BAEC) and the Arctic Coast Guard Forum (ACGF). They do not, however, address military security issues, but rather soft security cooperation and common responses in respect of SAR, civilian emergency prevention and preparedness, and environmental safety.
[139] Le Mière and Mazo (2014), *Arctic Opening*.
[140] Another format, the Arctic Chiefs of Defence Staff (ACDS), has apparently not convened since 2013.
[141] Käpylä and Mikkola (2019), 'Contemporary Arctic Meets World Politics'.

Dialogue should focus on outlining where parties agree to differ, and a record should be kept of where progress has or has not been made. Bilateral CBMs between Russia and the other coastal states can also be encouraged.[142]

The priority is to promote greater transparency in respect of regional military activity, especially naval deployments. In the event of a major disaster in the Arctic that requires interstate cooperation, civilian and coastguard response capabilities are likely to be overwhelmed, and military assets are therefore likely to be called into play to provide essential support.[143] In such instances, military activity will de facto be present.

Arctic-specific military-to-military channels of communication must be established between regional forces,[144] if only to coordinate during emergency response or critical SAR operations. Furthermore, information-sharing on military domain awareness in the context of the changing environment would be beneficial.[145]

The priority is to promote greater transparency in respect of regional military activity, especially naval deployments.

Addressing the role of military forces in environmental response would strike a chord in Russia. Past efforts, such as the Arctic Military Environmental Cooperation (AMEC) project,[146] have proven useful. Moscow is active in the environmental aspect of Arctic cooperation, and Russian troops often take part in environmental clean-ups and mitigation of harmful oil spills.[147]

Developing cooperation will take time, but such efforts are necessary to restore a modicum of trust between Arctic partners with regard to Russian military intentions. This cannot be achieved until a military code of conduct for the High North is defined.

A military code of conduct for the High North

There is an urgent need to define and enforce what should be *legitimate* and *acceptable* military practice in the Arctic among stakeholders. Similar conduct has been broadly defined in other areas, for instance in SAR and environmental cooperation, but the field of military security lags behind.[148]

Clearly outlining the 'rules of the road' of military conduct would help to promote transparency and decrease the risk of miscalculation. It would also regulate irresponsible behaviour, brinkmanship-

[142] Konyshev, V. and Sergunin, A. (2019), 'The Changing Role of Military Power in the Arctic', in Finger, M. and Heininen, L. (eds) (2019), *The Global Arctic Handbook*, Abingdon and New York: Routledge.
[143] Pezard et al. (2017), *Maintaining Arctic Cooperation with Russia*, p. 24. See also Le Mière and Mazo (2014), Arctic Opening.
[144] Kristensen and Sakstrup (2016), *Russian Policy in the Arctic after the Ukraine Crisis*, p. V.
[145] Russian International Affairs Council (2016), *Russia and the US in the Arctic*, p. 20.
[146] The AMEC included Norway, Russia and the US from 1996 until 2016.
[147] RIA Novosti (2016), 'S ostrovov Arktiki vyvezut bolee 2 tysyach tonn opasnogo metalloloma' [More than 2000 tons of hazardous scrap metal will be exported from the islands of the Arctic], 27 May 2016, https://ria.ru/20160527/1440042839.html (accessed 15 May 2019). See also RIA Novosti (2016), 'Vse rossiiskie voennye obyekty v Aktike prokhodyat ekologicheskuyu ekspertizu' [All Russian military facilities in the Arctic are undergoing environmental assessment], 27 May 2016, https://ria.ru/20160527/1440038346.html (accessed 15 May 2019).
[148] Le Mière and Mazo (2014), *Arctic Opening*.

prone activities and dangerous military activities. Such a code should be signed by all states engaging in military activity in the Arctic, not just coastal states.

The goal is not to restrict freedom of navigation, peacetime operations or innocent passage. With confidence-building in mind, the code should determine what is considered intentional and unintentional military behaviour. Starting with defining what is *unacceptable* might be easier, for instance imposing clear restrictions on electromagnetic warfare in peacetime. Conducting GPS and radar jamming in peacetime, as Russia did during NATO's Trident Juncture exercise, is highly detrimental to civilian aviation and maritime safety, and is prone to causing accidents. Such activity goes beyond what is legitimate in terms of military practice in the Arctic.

A military code of conduct could build on existing arrangements, notably the OSCE[149] Vienna Document on confidence- and security-building measures (CSBMs). Another relevant consultancy mechanism is the Incidents at Sea Agreement (INCSEA), which regulates naval and air military interactions on a bilateral basis. In that regard, INCSEA-type instruments could be expanded to multilateral institutions such as NATO, while including Russia.

If the code of conduct embodies a moral obligation among respectable partners, there is no reason why it could not be enshrined at the level of the Arctic Council. The symbolic value of the document would not betray the spirit of 'low tension' associated with the Arctic Council. It would be in Russia's interest to abide by such a code in order to preserve the 'low tension' environment in the Arctic, and to ensure compliance by all parties with international law in the cooperative spirit that the Kremlin values in Arctic affairs.

The Arctic from the perspective of NATO and its partners

In the current context, NATO is not the ideal forum for discussing military security affairs in the Arctic with Russia. The presence of NATO in the Arctic would militarize the region, which goes against the 'low tension' understanding, and would further feed the Kremlin's 'besieged fortress' mentality.

However, this does not mean that NATO and its Nordic partners Sweden and Finland (NATO+2) should entirely stay away from military affairs in the Arctic. Keeping a watchful eye, maintaining and exercising capability, and increasing domain awareness are different from 'militarizing' the Arctic. NATO and its allies should act now to clear the debate about NATO's role in the Arctic, as well as to broaden NATO's overall awareness to issues beyond the North Atlantic.

The Arctic is not a single region in terms of national interests, and NATO+2 members have diverging, in cases even contradictory, ambitions in the region. Coastal allies and partners do not share a common vision of the essentials: Arctic leadership, an agreed definition of the area of operation, and the extent of Russia's security challenge. These issues might build uncertainty over NATO's ability to guarantee its commitments and to deploy beyond the North Atlantic. More clarity is needed, especially around NATO's commitment in the European Arctic.

[149] Organization for Security and Co-operation in Europe.

For now, Russia has been defining the future of military activities in the Arctic. It is time that the West and NATO caught up with Russia: the Kremlin cannot be left to believe it 'owns' Arctic military signalling. Nor should Russia believe that it can operate unhampered in a potentially contested environment.[150]

Clearing the debate at NATO level

The creation of the Joint Force Command Norfolk (JFC-N) in 2017 showed that NATO is facing up to issues concerning the Arctic, and also to the complexity of the operational environment. The Alliance nevertheless remains constrained as to how far north it can look. A more holistic and proactive approach to the North Atlantic that includes the Arctic would be beneficial.

NATO engagement on Arctic matters can only start with small steps, such as placing the region on the agenda and carrying out an assessment of NATO's role and approach there. This could start, for instance, with information-sharing arrangements on domain awareness and best practices in SAR activities among coastal states.

Further ahead, NATO should recognize that the Arctic is an integral part of North Atlantic operations. The idea for an 'Arctic working group' was initially pushed at the NATO Parliamentary Assembly in 2017, notably with Russia and China in mind.[151] This initiative should be encouraged and deepened: the idea would be to develop policy aimed at addressing common security challenges in the region,[152] as well as at articulating Arctic-specific concepts of operation. Discussions should systematically include Sweden and Finland as Arctic stakeholders, alongside interested members such as the UK and the Baltic states.[153]

> For now, Russia has been defining the future of military activities in the Arctic. It is time that the West and NATO caught up with Russia: the Kremlin cannot be left to believe it 'owns' Arctic military signalling.

Beyond NATO+2, Arctic nations should be encouraged to strengthen regional defence and military cooperation under the Nordic Defence Cooperation (NORDEFCO) framework involving Denmark, Finland, Iceland, Norway and Sweden. This was established in 2009 as a defence cooperation structure. A new level of cooperation was defined in 2018, notably for intelligence-sharing and defence-sector cooperation.[154] NORDEFCO's Vision 2025 insisted on improving defence capabilities and military cooperation.

[150] Defence Sub-Committee (House of Commons) (2017), *Oral evidence: Defence in the Arctic*.
[151] Connolly (2017), *NATO and Security in the Arctic*, p. 10.
[152] Foxall (2017), *Russia's Policies towards a Changing Arctic*, pp. 2, 13. See also Boulègue, M. (2018), 'NATO Needs a Strategy for Countering Russia in the Arctic and the Black Sea', Chatham House Expert Comment, 2 July 2018, https://www.chathamhouse.org/expert/comment/nato-needs-strategy-countering-russia-arctic-and-black-sea (accessed 15 May 2019).
[153] Coffey, L. and Kochis, D. (2018), *Brussels NATO Summit 2018: Time to Get Serious About the Arctic*, The Heritage Foundation, https://www.heritage.org/defense/report/brussels-nato-summit-2018-time-get-serious-about-the-arctic (accessed 15 May 2019).
[154] See NORDEFCO (2018), *Annual Report 2018*, http://www.nordefco.org/Files/AnnualReport-NORDEFCO.digital_compressed.pdf (accessed 15 May 2019).

NATO and its partners require a posture that is credible beyond the North Atlantic, as well as the capabilities to prove this posture and to deliver the necessary signalling. Indeed, Russia is increasing the gap with NATO in terms of Arctic operations and capabilities. The more time passes, the more effort it will take NATO to close this gap. A readjustment might be necessary now before the cost of entry to Arctic operations becomes too high.

Domain awareness

Maintaining the Arctic's 'low tension' status will require a balancing act on the part of NATO. The Alliance will need to pay a sufficient amount of watchful attention to the region, but without establishing a direct military presence. Such a process will necessarily start with allowing naval access to and beyond the North Atlantic for reinforcements, as well as ensuring freedom of operation in a contested environment. This will include improving the Alliance's 'comprehensive situational awareness'[155] in terms of domain awareness capabilities such as radar and air surveillance/ISR systems, early-warning systems, and radio communication and satellite coverage. The process could be streamlined through the creation of an Arctic surveillance and domain awareness Centre of Excellence (CoE), which could be located in Iceland or Norway.

More domain awareness will improve the security of the GIUK gap and North Atlantic SLOC.[156] The JFC-N serves primarily to keep SLOC open in the North Atlantic for reinforcements and resupplies in the Baltic. If NATO troops were to operate in a contested environment where freedom of manoeuvre were not guaranteed along SLOC, the prospect of being forced into Arctic waters (specifically, the Norwegian Sea and Baltic Sea) would have to be considered in contingency planning.

Closer liaison between JFC-N and the Danish Joint Arctic Command, located in Nuuk in Greenland, would benefit the protection of SLOC, although domain awareness systems would have to be tremendously improved. Greater coordination should be sought between NATO and the Northern Group,[157] as it is now focusing on military mobility and situational awareness.[158]

It might help to invest in Arctic-capable military assets and infrastructure, although this would be a costly endeavour. Anti-submarine warfare (ASW) is a good place to start, since NATO lacks

[155] NATO Parliamentary Assembly (2017), *2017 Annual Presidential Report*, p. 28, https://www.nato-pa.int/download-file?filename=sites/default/files/2018-06/NATO_PA_PresidentReport2017ENGLight_0.pdf (accessed 15 May 2019).
[156] Smith-Windsor, B. (2017), *Written evidence submitted by Dr Brooke Smith-Windsor*, House of Commons, 18 January 2017, http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/defence-subcommittee/defence-in-the-arctic/written/45443.html (accessed 15 May 2019).
[157] The Northern Group was established in 2010 between Nordic states, the Baltic states, the UK, Germany and the Netherlands.
[158] Defence-aerospace.com (2018), 'Northern Group Defence Ministers agreed to form a simplified military mobility space', 7 June 2018, http://www.defense-aerospace.com/articles-view/release/3/193784/northern-group-ministers-agree-to-form-a-simplified-military-mobility-space.html (accessed 15 May 2019).

capabilities, concepts of operation and practice in that domain.[159] This could help with conducting air policing operations 'with teeth' to ascertain an awareness beyond the GIUK gap.[160]

Investing in underwater listening posts in the Norwegian Sea to monitor the movement of submarines could be a way forward. During the Cold War, underwater listening operations took place between Andøya in northern Norway and Bear Island in Svalbard under the US Sound Surveillance System (SOSUS),[161] since renamed the Integrated Undersea Surveillance System (IUSS).

Finally, NATO should take stock of existing capabilities and bases in the UK, Iceland, Greenland, Norway and Denmark in order to rationalize defence spending according to existing infrastructure and know-how. For instance, the UK has clear comparative advantages in keeping SLOC open in the North Atlantic.[162] Finland has been participating actively in joint regional situational awareness with NATO, and possesses expertise in that field.

Arctic training

Russian troops have been training for Arctic conditions since at least 2015, have developed specific concepts of operations and maintain high levels of preparedness. Meanwhile, Trident Juncture 2018 revealed logistical and coordination issues in operations on the Northern Flank of the Alliance. NATO+2 should streamline its efforts, while keeping in mind that NATO should train *for* Arctic conditions but should avoid conducting drills *in* the Arctic. A more visible NATO presence would fuel Russia's rhetoric that NATO is indeed getting closer.

The Alliance should focus more on conducting operations in extreme cold-weather environments. Existing endeavours, such as the Centre of Excellence for Cold Weather Operations (CoE-CWO)[163] in Norway, or US troops training for cold weather in Finland, should be supported and broadened.

The UK-led Joint Expeditionary Force (JEF) could be trained and organized as a fully Arctic-capable spearhead force in support of NATO operations on the Northern Flank. JEF took part in Trident Juncture 2018, and most of the nine participating countries were Arctic (and Baltic) nations.[164] JEF should be made a permanent standing force as part of the Very High Readiness Joint Task Force (VJTF), while ensuring the continued presence of Sweden and Finland therein.

[159] Roughead, Admiral G. (2018), *The Trident Returns: Reactivating the U.S. Second Fleet and Revitalizing Anti-Submarine Warfare in the Atlantic*, Center for Strategic and International Studies, 26 October 2018, p. 1, https://csis-prod.s3.amazonaws.com/s3fs-public/publication/181026_NorthernConnectiont3.pdf?ywxysewWtnBSapLAUzO9figx6OKwrjG7 (accessed 15 May 2019).
[160] Wegge, N. and Keil, K. (2018), 'Between Classical and Critical Geopolitics in a Changing Arctic', *Polar Geography*, 41(2): pp. 87–106, https://doi.org/10.1080/1088937X.2018.1455755 (accessed 15 May 2019).
[161] Åtland (2011), 'Russia's Armed Forces and the Arctic', p. 270.
[162] Depledge, D. (2018), *Britain and the Arctic*, Cham: Palgrave.
[163] See Norwegian Armed Forces (undated), 'Centre of Excellence – Cold Weather Operations', https://forsvaret.no/en/cwo (accessed 31 May 2019).
[164] Reynolds, D. (2019), 'Shaping the Future: The UK's Joint Expeditionary Force', *Jane's Defence Weekly*, 27 February 2019, https://www.janes.com/images/assets/806/86806/Shaping_the_future_The_UKs_Joint_Expeditionary_Force.pdf (accessed 15 May 2019).

7. Conclusion

It is no longer quiet on the Northern Front.[165] Because climate change is not a linear process, annual variations in the extent of ice floes will be unpredictable, and this will have an impact on coastal states in unprecedented ways. The Arctic today will not be the same as the Arctic that Russia and other coastal states will experience by the 2040s and 2050s, when the Arctic Ocean will be navigable.

It seems that the golden era of 'low tension' is slowly coming to an end: the Arctic is now a place of growing military security wariness, albeit with enduring scope for cooperation. It is time to puncture the myth of 'Arctic exceptionalism' and recognize that the region can no longer be insulated from the broader military security context.

It is yet to be determined whether Arctic nations will continue their cooperative course, or whether strategic competition will increase in the polar seas. Just as space conquest was a venting mechanism for great-power competition during the Cold War, the Arctic could very well become the arena for the new 'Great Game' of the 21st century.

Arctic matters will remain on the Russian policy agenda and will outlast the tenure of President Vladimir Putin. The nature of economic and military activities, however, will depend on how the Kremlin manages to turn political and symbolic rhetoric into economic dividends. In the future, this could push Moscow into altering, to an extent, its cooperative approach with other Arctic nations. This would have serious security implications. Although not a given, military build-up could very well become an escape strategy for the Kremlin, or even potentially an end in itself. The 'militarization' of the Russian Arctic, for now defensive in nature, would then have a more offensive contour in respect of NATO and its partners.

So far, Russia has been acting as a status quo power and a reluctant rule-follower in the Arctic, partly because international law plays in its favour, and partly because the Kremlin values a cooperative stance and it is in its interest to preserve the current arrangements. Despite growing tension, cooperation is likely to endure. For the West, working continuously with Russia, especially on military security affairs, will avoid transferring the current security tensions into the Arctic.

Russia will chair the Arctic Council and the Arctic Coast Guard Forum (ACGF) between 2021 and 2023, taking over from Iceland. There might now be a window of opportunity to prepare the ground for a more inclusive debate around military security in the region. This would send a powerful signal that cooperation should remain an absolute priority for all Arctic states, and that maintaining the 'low tension' status takes action, not just words.

[165] See the ongoing 'play on words' in Åtland (2011), 'Russia's Armed Forces and the Arctic'. See also Klimenko (2016), *Russia's Arctic Security Policy*; and Buchanan, E. (2019), 'Not All Is Quiet on the Arctic Front', *The Moscow Times*, 25 March 2019, https://www.themoscowtimes.com/2019/03/25/not-all-is-quiet-on-the-arctic-front-a64904 (accessed 15 May 2019).

Appendix

1. Russian Arctic military bases

'Arctic Shamrock' on Franz Josef Land

The 'Arctic Shamrock' (or 'Trefoil') is located close to Nagurskoye on Alexandra Land Island, Franz Josef Land. At 80° north, it is the closest permanent outpost to the North Pole. It is the largest building standing that far north. Construction started in 2015, and the base became fully operational in late 2018.[166] The base is manned by some 150 troops on 18-month, fully autonomous, rotations.

The main task of the base is to provide the Northern Fleet with air defence capabilities, notably via S-300 (NATO: SA-10 Grumble) air defence systems and Pantsir-S1 anti-aircraft systems for short-range coverage. An electronic warfare and radar company operates at the base, notably with the P-18 Terek early-warning system. Naval facilities include K-300P Bastion-P (NATO: SSC-5) coastal defence systems armed with P-800 Oniks anti-ship cruise missiles (NATO: SS-N-26 Strobile) and 4K51 Rubezh (NATO: SSC-3 Styx) anti-ship systems.[167] The base also serves as an SAR outpost.

Close to Trefoil, troops run the Nagurskoye airbase, comprising two landing strips – including a 2,500-metre runway that can accommodate fighter aircraft and refuelling tankers. This strip was completed in 2015 and operates all year round, even in winter.[168] An Il-76 transport aircraft landed for the first time in April 2015.[169] The Nagurskoye airbase was created with strike aviation in mind:[170] with the help of Il-78 refuelling tankers to extend their operational range, an air wing of MiG-31 (NATO: Foxhound) or Su-34 (NATO: Fullback) fighter aircraft could reach the Thule airbase in Greenland[171] and push onwards to North America.[172] Modernized MiG-31BM could possibly be deployed to Nagurskoye in the near future.

[166] RT (2017), 'Arctic Shamrock: Russian MoD offers interactive 360° tour of unique military base (PHOTOS)', 17 April 2017, https://www.rt.com/viral/384986-russian-arctic-military-base-tour/ (accessed 15 May 2019).
[167] Armyrecognition.com (2018), 'Russia arms itself for the Arctic'.
[168] Tass.ru (2018), 'Bolee 13 tisyach tonn gruzov dostavyat na Zemlyu Frantsa Yosefa dlya stroitel'stva aerodroma' [More than 13 thousand tons of cargo will be delivered to Franz Josef Land for the construction of an airfield], 25 September 2018, https://tass.ru/armiya-i-opk/5602481 (accessed 15 May 2019).
[169] Ministry of Defence of the Russian Federation (2015), 'Ekipazh Il-76 VVS vpervye sovershil posadku na arkticheckiy aerodrom' [The crew of the IL-76 Russian Air Force first landed on an Arctic airfield], 30 April 2015, https://function.mil.ru/news_page/country/more.htm?id=12027522@egNews (accessed 15 May 2019).
[170] Interfax (2016), 'Shoigu priyekhal s proverkoi na Zemlyu Frantsa-Yosefa' [Shoigu arrived to oversee Franz Josef Land], 18 April 2016, https://www.interfax.ru/russia/504324 (accessed 15 May 2019).
[171] Danish Defence Intelligence Service (2018), *Intelligence Risk Assessment 2018*.
[172] Defence Subcommittee (House of Commons) (2017), *Written evidence submitted by Bruce Jones*, 17 February 2017, http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/defence-subcommittee/defence-in-the-arctic/written/47407.html (accessed 15 May 2019).

'Northern Clover' on New Siberian Island

Located at 75° north, the 'Northern Clover' base was built on Kotelny Island, in the New Siberian Islands archipelago on the Laptev Sea. Opened in December 2016,[173] it can permanently host 250 troops, including the 99th Arctic Tactical Group, a radar unit and other support units.

Like the facilities on Franz Josef Land, Northern Clover aims to provide regional air defence. It is heavily armed, with S-300 air defence systems, Pantsir-S1 anti-aircraft systems, Bastion-P coastal systems (increasingly replacing ageing Rubezh anti-ship systems)[174] and anti-ship systems. These systems are officially for protection of the NSR and territorial defence.

Northern Clover is linked to the Temp airbase, where Pantsir-S1 coastal systems were deployed in 2014.[175] It is likely that the Temp airfield will be used mostly for SAR and civilian emergency purposes.[176] There are also plans to build a runway extension to accommodate Il-76 transport aircraft.[177]

Rogachevo base on Novaya Zemlya

Alongside SAR facilities, Rogachevo primarily serves as an air defence base for the Northern Fleet. It is the largest of the three 'Tricolour' bases and can host a full-size battalion. Radar installations for surveillance and early warning became operational in April 2015.

In addition to S-400 (NATO: SA-21 Growler) systems,[178] facilities are equipped with a triad of S-300 air defence systems, Pantsir-S1 anti-aircraft systems and Rubezh anti-ship coastal systems. This is the first time since the early 1990s that missile systems have been deployed to Novaya Zemlya.[179] Air defence is strengthened with the presence of P-800 Oniks systems. Such systems create a potential interdiction bottleneck between the Barents Sea and Pechora Sea, thereby potentially limiting freedom of access and operations for foreign forces.[180] Development and operations at Rogachevo are deemed of strategic importance for the Northern Fleet.[181]

The airfield adjacent to the base serves for resupply and logistics. It was previously announced in 2012 that a squadron of MiG-31 fighters would be deployed there.

[173] Staalesen, A. (2016), 'New Arctic military base is declared ready for operation', *The Barents Observer*, 14 December 2016, https://thebarentsobserver.com/en/security/2016/12/new-arctic-military-base-declared-ready-operation (accessed 15 May 2019).
[174] *Izvestiya* (2018), '"Bastiony" prikroyut "Rubezhi" v Arktike' ['Bastions' will cover the 'Frontiers' in the Arctic], https://iz.ru/785340/roman-kretcul-aleksei-ramm/bastiony-prikroiut-rubezhi-v-arktike (accessed 15 May 2019).
[175] VPK (2018), 'Minoborony rasskazalo o stroitel'stve obyektov v Arktike' [The Defence Ministry spoke about the construction of facilities in the Arctic], 7 November 2018, https://vpk.name/news/233695_minoboronyi_rasskazalo_o_stroitelstve_obektov_v_arktike.html.
[176] Granholm, Carlsson, and Korkmaz (2016), *The Big Three in the Arctic*, p. 28.
[177] Regehr and Jackett (2018), 'Circumpolar Military Facilities of the Arctic Five'.
[178] Granholm, Carlsson, and Korkmaz (2016), *The Big Three in the Arctic*, p. 28.
[179] Wahlstrom (2016), 'Russia's Arctic militarization: words versus actions'.
[180] Ibid.
[181] Ministry of Defence of the Russian Federation (2018), 'Odnoy iz prioritetnykh zadach Severnogo flota na 2018 god yavlyayetsya kompleksnaya ekspeditsiya na arkhipelag Novaya Zemlya' [One of the priorities of the Northern Fleet for 2018 is a comprehensive expedition to the Novaya Zemlya archipelago], 14 February 2018, https://structure.mil.ru/structure/okruga/north/news/more.htm?id=12162873@egNews (accessed 15 May 2019).

Table 1: Airfields and bases operated by the Northern Fleet and the Russian coastguard along the AZRF

Airfield	Location	Mission
Alykel	Norilsk, Krasnoyarsk Krai	SAR, resupply
Amderma	Nenets Autonomous Okrug	SAR, resupply
Anadyr-Ugolny	Chukotka Autonomous Okrug	SAR, EW, UAV operations, long-range patrols (Tu-22M3), satellite communications
Chersky	Sakha Republic	SAR, resupply
Nadym	Yamalo-Nenets Autonomous Okrug	SAR, resupply
Naryan-Mar	Nenets Autonomous Okrug	SAR, coastguard outpost
Pevek	Chukotka Autonomous Okrug	SAR, resupply
Provideniya	Chukotka Autonomous Okrug	SAR, resupply
Sabetta	Yamal Peninsula	SAR, FSB centre for the protection of the Yamal LNG project
Severomorsk-1 and 3	Murmansk Oblast	SAR, tactical aviation (Su-25 and MiG-29), transport (Il-96)[182]
Sredny Island	Severnaya Zemlya	SAR, radar surveillance, tactical group
Tiksi base	Kola Peninsula	SAR, air defence, tactical aviation
Vorkuta	Pechora basin, Komi Republic	SAR, long-range patrol (Tu-22M3),[183] early-warning radar station[184]

2. Northern Fleet naval assets

Warships

The order of battle of the Northern Fleet officially comprises 37 surface vessels,[185] including the *Admiral Kuznetsov* aircraft carrier, whose fate is still undetermined.[186] Only 10 of the 13 larger vessels are currently operational. These include the flagship of the fleet, the Kirov-class nuclear-powered missile cruiser *Pyotr Velikiy* (Project 11442). Another Kirov-class unit, the *Admiral Nakhimov*, is under repair at the Sevmash shipyard in Severodvinsk. The *Pyotr Velikiy* will also spend some time in repair after the *Nakhimov* resumes active service in 2021.[187] Kirov-class

[182] Eye on the Arctic (2018), 'Russia upgrades Northern Fleet airbase', 3 July 2018, http://www.rcinet.ca/eye-on-the-arctic/2018/07/03/russia-military-base-severomorsk-upgrade-arctic/ (accessed 15 May 2019).
[183] VPK (2018), 'Ekipazhi Tu-22M3 vypolnili posadku na Arkticheskiy aerodrom Vorkuta v khode ucheniy' [The crews of Tu-22M3 landed on the Vorkuta Arctic airfield during the exercise], 5 October 2018, https://vpk.name/news/230103_ekipazhi_tu22m3_vyipolnili_posadku_na_arkticheskii_aerodrom_vorkuta_v_hode_ucheniia.html (accessed 15 May 2019).
[184] Regehr and Jackett (2018), 'Circumpolar Military Facilities of the Arctic Five'.
[185] Russianships.info (2019), 'Russian Navy 2019: List of Active Russian Navy Ships and Submarines', http://russianships.info/eng/today/ (accessed 31 May 2019).
[186] Tass.ru (2018), 'Russia finds alternative to sunken floating dock for naval ships', 7 November 2018, http://tass.com/defense/1029654 (accessed 15 May 2019).
[187] Tvzvezda.ru (2017), 'Modernizatsiya atomnogo raketnogo kreysera "Petr Velikiy" zaymyot 3.5 goda' [The modernization of the nuclear-powered missile cruiser "Peter the Great" will take 3.5 years], 22 July 2017, https://tvzvezda.ru/news/opk/content/201707221115-upwj.htm (accessed 15 May 2019).

cruisers are heavily armed, notably with P-700 Granit (NATO: SS-N-19) anti-ship cruise missiles, and can host three helicopters.

The Slava-class guided-missile destroyer *Marshal Ustinov* (Project 1164) is another important projection asset of the fleet. It went back to active service in mid-2017 after five years under repair.[188] It is heavily armed, with S-300F Fort systems (the sea-based variant of S-300s), 9K33 Osa-MA surface-to-air (SAM) systems and P-500 Bazalt cruise missiles, in addition to a 533-mm torpedo system and modernized radio-electronics.

Smaller vessels complement the Northern Fleet's displacement. The Gorshkov-class frigate *Admiral Gorshkov* (Project 22350) entered active service in mid-2018 after at least six years of delays and failed tests. Another seven vessels of this class are planned, with only three laid down so far. For now the second unit, the *Admiral Kasatanov*, is scheduled to enter service in autumn 2019.[189] The frigates are armed with Kalibr-NK land-attack cruise missiles and P-800 Oniks anti-ship cruise missiles, making them effective assets for interdiction operations at sea.

Three of the five existing Udaloy-class (Project 1155) anti-submarine ships are reported active. The fleet has six small Project 1142M (Grisha-class) anti-submarine ships for brown- and green-water operations. At least five amphibious landing ships supplement the fleet (the heavy landing ship *Ivan Gren* of Project 11711[190] and several large Project 775 vessels).

The order of battle is strengthened by one active Sovremenny-class destroyer (*Admiral Ushakov* of Project 956) out of the four existing units, and a fleet of nine minesweepers for brown- and green-water operations.

Construction of the first Lider-class destroyer (Project 23560, nuclear-powered) started in 2018, with official completion scheduled for 2025. Eight vessels from this class will serve in the Northern and Pacific Fleets, albeit in the distant future. They will be equipped with Kalibr, Onyx and S-500 long-range anti-aircraft missile systems.[191]

The Northern Fleet welcomed its first ice-class ship in early 2018, when the diesel-electric icebreaker *Ilya Muromets* (Project 21180) arrived in Severomorsk and entered active service.[192] This denotes a new role for the Northern Fleet in terms of ice-condition operations: the *Ilya Muromets* will likely support passage of other assets as well as assist in patrol and tugging missions.

[188] Staalsen, A. (2017), 'After 5 years of upgrade, destroyer "Marshal Ustinov" is back in Barents Sea', *The Barents Observer*, 23 May 2017, https://thebarentsobserver.com/en/security/2017/05/after-5-years-upgrade-destroyer-marshal-ustinov-back-barents-sea (accessed 15 May 2019).
[189] Tass.ru (2018), 'Russian Navy to get cutting-edge frigate in 2019', 4 July 2018, http://tass.com/defense/1011973 (accessed 15 May 2019).
[190] Nielsen, T. (2018), 'Russia's largest landing ship to sail north through major NATO exercise', *The Barents Observer*, 14 October 2018, https://thebarentsobserver.com/en/security/2018/10/russias-largest-landing-ship-sail-north-through-major-nato-exercise (accessed 15 May 2019).
[191] Khrolenko, A. (2017), 'Atomnyi esminets "Lider": kak Rossiya poluchit prevoskhodstvo v Mirovom okeane' [Atomic destroyer 'Leader': how Russia will gain superiority in the oceans], RIA Novosti, 27 July 2017, https://ria.ru/20170729/1499181539.html?inj=1 (accessed 15 May 2019).
[192] Ministry of Defence of the Russian Federation (2018), 'Dizel'-elektricheskiy ledokol "Il'ya Muromets" pribyl na Severnyi flot' [The diesel-electric icebreaker *Ilya Muromets* has arrived to the Northern Fleet], 2 February 2018, https://structure.mil.ru/structure/forces/navy/news/more.htm?id=12157076@egNews (accessed 15 May 2019).

A second platform is scheduled for construction, but will not enter the Northern Fleet before the late 2020s.

In the future, the fleet is likely to operate a new class of patrol icebreakers under Project 23550.[193] The first ship of the two, the *Ivan Papanin*, was laid down in 2017[194] but is unlikely to enter service before the mid-2020s, as construction is already encountering delays.[195] The project is inspired by armed icebreakers of the Norwegian Svalbard class,[196] and the new ships will give the fleet an operational edge in sea denial and ISTAR[197] operations (the vessels will deploy Ka-27 ASW helicopters and UAVs).

Icebreakers

Although not part of the Northern Fleet, the Rosatom fleet of civilian icebreakers is still crucial to military access and operations.[198] Russia officially has 46 icebreakers, including four nuclear-powered units.[199] The bulk of the fleet is supposed to be decommissioned in the 2020s, yet construction of new vessels is severely delayed. Russia is likely to experience an 'icebreaker gap'[200] between the scheduled decommissioning of older platforms and the entry into service entry of new ones – unless the lifespans of the former are extended through considerable maintenance, repair and overhaul (MRO).

Three units of the LK-60 class (Project 22220) nuclear-powered icebreakers are under construction[201] and will replace the ageing Arktika class. The three units should be rolled out starting in 2020 at the earliest, due to turbine manufacturing delays.[202] Rosatom is pushing for the construction of another two LK-60-class units for the NSR.[203]

[193] Naval Technology (undated), 'Ivan Papanin (Project 23550) Class Arctic Patrol Vessels', https://www.naval-technology.com/projects/ivan-papanin-project-23550-class-arctic-patrol-vessels/ (accessed 31 May 2019).
[194] Goldstein, L. J. (2018), 'Is Russia's Planned "Combat Icebreaker" a Serious Threat?', *The National Interest*, 2 April 2018, https://nationalinterest.org/feature/russias-planned-combat-icebreaker-serious-threat-25187 (accessed 15 May 2019).
[195] Tass.ru (2018), 'Dva patrul'nykh korablya arkticheskoy zony sdadut flotu v 2023–2024 godakh' [Two patrol ships of the Arctic zone will surrender to the fleet in the years 2023–2024], 21 March 2018, http://tass.ru/armiya-i-opk/5051964 (accessed 15 May 2019).
[196] Yuferev, S. (2017), '"Boyevoy ledokol" rossiyskogo flota: korabl' proyekta 23550' ['Fighting icebreaker' of the Russian fleet: Project 23550 ship], *Voennoe Obozrenie*, 14 November 2017, https://topwar.ru/129377-boevoy-ledokol-rossiyskogo-flota-korabl-proekta-23550.html (accessed 15 May 2019).
[197] Intelligence, surveillance, target acquisition and reconnaissance.
[198] Farley, R. (2017), 'How Russia Could Win a War in the Arctic', *The National Interest*, 13 June 2017, https://nationalinterest.org/blog/the-buzz/how-russia-could-win-war-the-arctic-21134 (accessed 15 May 2019).
[199] Rosatomflot (undated), 'Atomnei ledokolie' [Atomic icebreakers], http://www.rosatomflot.ru/flot/.
[200] Wishnick, E. (2017), 'Tensions with Russia Heat Up the Melting Arctic', PONARS Eurasia Policy Memo No. 464, http://www.ponarseurasia.org/memo/tensions-russia-heat-melting-arctic (accessed 15 May 2019).
[201] Staalesen, A. (2016), 'Yard launches construction of third nuclear-powered icebreaker', *The Barents Observer*, 25 July 2016, https://thebarentsobserver.com/en/arctic/2016/07/yard-launches-construction-third-nuclear-powered-icebreaker (accessed 15 May 2019).
[202] Kommersant.ru (2018), '"Arktika" ne sdayotsya' ['The Arctic' is not giving up], 10 September 2018, https://www.kommersant.ru/doc/3737331 (accessed 16 May 2019).
[203] Rosatom (2018), 'Predpriyatiya Rosatoma prinyali uchastiye v VII Murmanskoy mezhdunarodnoy delovoy nedele' [Rosatom enterprises took part in the VII Murmansk International Business Week], 16 October 2018, http://www.rosatom.ru/journalist/news/predpriyatiya-rosatoma-prinyali-uchastie-v-vii-murmanskoy-mezhdunarodnoy-delovoy-nedele/ (accessed 16 May 2019).

A new class of nuclear icebreaker, the LK-120 Lider-class (Project 10510), was unveiled in June 2018.[204] Units will be built at the Zvezda shipyard near Vladivostok, but will not be commissioned before the 2030s at least – if they are ever built, as the project is already experiencing funding issues.[205] The LK-120 was at the centre of domestic political contention around lobbying and vested interests after United Shipbuilding Corporation (OSK) denounced a 'political' contract aimed at subsidizing Zvezda.[206]

The decommissioned *Sovietskiy Soyuz* nuclear-powered icebreaker is due to be converted to an Arctic military command post,[207] although plans remain uncertain.

Submarines

Most submarine units of the Northern Fleet are based in Gadzhiyevo, on Yagelnaya Bay on the Kola Peninsula. The order of battle of the Northern Fleet comprises 41 submarines,[208] and will follow the modernization and procurement cycles of nuclear-powered ballistic-missile submarines (SSBNs), nuclear-powered guided-missile submarines (SSGNs) and nuclear-powered attack submarines (SSNs) under the state armament programme for 2027. Legacy diesel-electric submarines will be modernized. In terms of operations, the fleet of more than 30 nuclear-powered submarines can nevertheless deploy only some seven to eight units at sea, making it relatively fragile.[209]

Furthermore, maintaining and modernizing the nuclear deterrent is not Arctic-related, but an absolute military priority across all fleets. Russia's modernization of the fleet of submarines focuses on increasing their operational radius as well as on under-ice training and operations,[210] after below-ice patrols resumed in 2009. The recent increase in submarine activity and patrols in the region, which have apparently reached Cold War levels,[211] shows that Russia projects force to the North Atlantic and through the GIUK gap.[212]

The Northern Fleet has six Delta-IV SSBNs (Project 667 BDRM, NATO: Delta II), with only four to five currently operational. Modernization plans include the introduction of a new sonar system and the new R-29RMU Sineva (NATO: SS-N-23 Skiff) submarine-launched ballistic missiles (SLBMs). The latter is a third-generation missile system which entered service in 2007 and can carry four to

[204] Kommersant.ru (2018), '"Lider" posylayut na "Zvezdu"' ['Leader' is sent to the 'Star'], 28 July 2018, https://www.kommersant.ru/doc/3700113 (accessed 16 May 2019).
[205] Digges, C. (2018), 'Putin slated to announce construction of enormous sci-fi nuclear icebreaker', Bellona, 7 August 2018, http://bellona.org/news/nuclear-issues/nuclear-russia/2018-08-putin-slated-to-announce-construction-of-enormous-sci-fi-nuclear-icebreaker (accessed 16 May 2019).
[206] RBK (2018), 'Glava OSK rasskazal o "zolotoy logistike" pri stroitel'stve "Lidera"' [The head of USC spoke about the 'golden logistics' during the construction of the 'Leader'], 25 October 2018, https://www.rbc.ru/politics/25/10/2018/5bd096139a794768faab8bbb?from=main (accessed 16 May 2019).
[207] RIA Novosti (2017), 'Atomnyy ledokol "Sovetskiy Soyuz" utiliziruyut' [The atomic icebreaker 'Soviet Union' is being recycled], 31 August 2017, https://ria.ru/20170831/1501471612.html (accessed 16 May 2019).
[208] Russianships.info (2019), 'Russian Navy 2019'.
[209] Defence Sub-committee (House of Commons) (2017), *Oral Evidence: Defence in the Arctic*.
[210] Devyartkin, P. (2018), 'Russia's Arctic strategy: military and security (part II)', The Arctic Institute, https://www.thearcticinstitute.org/russias-arctic-military-and-security-part-two/ (accessed 16 May 2019).
[211] House of Commons Defence Committee (2018), *On Thin Ice*, p. 20.
[212] Kristensen and Sakstrup (2016), *Russian Policy in the Arctic after the Ukraine Crisis*, p. 30. See also Conley and Rahbek-Clemmensen (2017), *Written evidence submitted by Heather A. Conley and Jon Rahbek-Clemmensen*.

10 nuclear warheads over 8,000 km.[213] Each vessel can carry up to 16 missiles. The fleet of SSBNs is currently undergoing MRO but should be decommissioned after the 2030s.

Borei II-class (Project 955A, NATO: Dolgorukiy-class) SSBNs will replace the ageing fleet of Delta-IVs. The first unit of this class serving in the Northern Fleet, the *Yuri Dolgorukiy*, was deployed in early 2013. Five other submarines are in various stages of development at the Sevmash yard in Severodvinsk, but are experiencing delays with diesel generators.[214] Several units should be delivered to the Northern Fleet by the mid-2020s. The Borei II class will be equipped with up to 16 Bulava SLBMs, each fitted with up to six nuclear warheads.[215]

The Yasen-class multi-purpose SSGN (Project 885-M) serves as an attack submarine with guided-missile systems. The first unit, the *Severodvinsk*, entered service in 2014; the second vessel, the *Kazan*, is still undergoing sea trials.[216] Six extra submarines in this class are in various stages of construction, but nowhere near completion. They are harboured in Zapadnaya Litsa on the Kola Peninsula. The Yasen-class SSGN is supposed to replace the ageing Akula-class and Oscar-class submarines. Yasen are armed with Kalibr missile systems, still being trialled,[217] as well as P-800 Oniks anti-ship cruise missiles. Development of the Yasen programme, however, has been slowed down for the benefit of Borei-class SSBNs, leading to crippling delays.[218]

The Akula-class SSBN *Dmitri Donskoy* (Project 941UM, NATO: Typhoon) was recently modernized to conduct tests for Bulava missiles. The three legacy Antey-class (Project 949A, NATO: Oscar 2-class) and the six Shchuka-B-class (Project 971, NATO: Akula III) SSGNs are also undergoing MRO to equip them with Kalibr and Oniks systems.

[213] Zhukov, R. (2015), 'Ballisticheskaya raketa "Sineva": kharakteristiki, opisaniye' [Ballistic missile 'Sinev': characteristics, description], FB, 10 December 2015, http://fb.ru/article/219005/ballisticheskaya-raketa-sineva-harakteristiki-opisanie (accessed 16 May 2019).
[214] Mil.Press Today (2018), 'SSBN Knyaz Oleg stays without diesel generator for almost a year', 1 February 2018, http://mil.today/2018/Weapons6/(accessed 16 May 2019).
[215] Regehr, E. (2018), 'Nuclear Submarines in the Arctic: Limiting Strategic Anti-Submarine Warfare', Arctic Security Briefing Papers, Simons Foundation, http://www.thesimonsfoundation.ca/sites/default/files/Nuclear%20Submarines%20in%20the%20Arctic-Limiting%20Strategic%20Anti-Submarine%20Warfare%20-%20Arctic%20Security%20Briefing%20Paper%2C%20December%204%202018.pdf (accessed 16 May 2019).
[216] Nielsen, T. (2017), 'Rogozin floats out new attack submarine', *The Barents Observer*, 31 March 2017, https://thebarentsobserver.com/en/security/2017/03/rogozin-floats-out-new-attack-submarine (accessed 16 May 2019).
[217] VPK (2018), 'Atomnaya podlodka Severnogo flota "Severodvinsk" vypolnila raketnuyu strel'bu "Kalibrom" – shtab SF' [The nuclear submarine of the Northern Fleet 'Severodvinsk' performed the Kalibrom missile firing – headquarters of the NF], 5 December 2018, https://vpk.name/news/237068_atomnaya_podlodka_severnogo_flota_severodvinsk_vyipolnila_raketnuyu_strelbu_kalibrom__shtab_sf.html.
[218] Connolly and Boulègue (2018), *Russia's New State Armament Programme*, p. 22.

Acronyms and Abbreviations

ACDS	Arctic Chiefs of Defence Staff
ACGF	Arctic Coast Guard Forum
AMEC	Arctic Military Environmental Cooperation
ASRF	Arctic Security Forces Roundtable
ASW	anti-submarine warfare
ATV	all-terrain vehicle
AZRF	Arctic Zone of the Russian Federation
BAEC	Barents Euro-Arctic Council
CBM	confidence-building measure
CoE	Centre of Excellence
CSBM	confidence- and security-building measure
EEZ	exclusive economic zone
EW	electronic warfare
FPZ	fisheries protection zone
FSB	Federal Security Service
GIN	Greenland–Iceland–Norway
GIUK	Greenland–Iceland–United Kingdom
GPV	Russian state armament programme
INCSEA	Incidents at Sea Agreement
ISR	intelligence, surveillance and reconnaissance
ISTAR	intelligence, surveillance, target acquisition and reconnaissance
IUSS	Integrated Undersea Surveillance System
JEF	Joint Expeditionary Force
JFC-N	Joint Force Command Norfolk
LNG	liquefied natural gas
MBT	main battle tank
MRO	maintenance, repair and overhaul
NATO	North Atlantic Treaty Organization
NORDEFCO	Nordic Defence Cooperation
NSR	Northern Sea Route
OSCE	Organization for Security and Co-operation in Europe
SAR	search and rescue
SLBM	submarine-launched ballistic missile
SLOC	sea lines of communication
SOSUS	Sound Surveillance System
SSBN	nuclear-powered ballistic-missile submarine
SSGN	nuclear-powered guided-missile submarine
SSN	nuclear-powered attack submarine
UAV	unmanned aerial vehicle
UNCLOS	United Nations Convention on the Law of the Sea
VDV	Airborne Assault Troops
VJTF	Very High Readiness Joint Task Force

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Cover image: A soldier on patrol at the Russian military base on Kotelny Island, beyond the Arctic Circle, on 3 April 2019.

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