



NATO PARLIAMENTARY ASSEMBLY

DEFENCE AND SECURITY COMMITTEE (DSC)

RUSSIAN MILITARY MODERNISATION: CHALLENGES AHEAD FOR NATO ALLIES

General Report

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I. INTRODUCTION

1. Clear messaging from policy declarations and actions signal Moscow is doing its best to assert Russia's power in a multipolar world. Increasing Russian national levers of power will permit Russia to counterbalance US power in the Euro-Atlantic and beyond. Understood in Russian strategic policy publications and reinforced by the words and deeds of the nation's leaders is the idea of Russia's de facto leadership and sway in the post-Soviet space, and a Russian veto at the bargaining tables of the globe's key conflicts and challenges.

2. The bleak international security environment depicted in the Russian national security strategy and military doctrine present a broad spectrum of threats and dangers seeking to weaken or upend Russia either from the outside or within. To construct only a partial list, Russia is focused on the dangers and threats emanating from increased and widespread global instability, WMD proliferation, precision strike, information warfare, and other transnational threats such as violent extremism. The dangers of a global arms race to out-innovate in modern weapon systems also pervade the documents. It is clear Russia views its key challenge in this domain as coming from the United States and its Allies.

3. Russia's strategic documents underscore a belief in Moscow that the nation's defence goals depend on the full spectrum of national power to be at the service of defending the state: This translates into a whole of government approach to defence and deterrence, to include the nation's economic, political, and informational power as well as societal mobilisation and resilience in the defence of national interests. Ultimately, however, as Russian Chief of General Staff, Valery Gerasimov underscored recently: Russia's military forces are the ultimate guarantor of the nation's defence.

4. In light of Russia's perspective on the threats to its vital interests at home and abroad, Moscow has been engaged in a large-scale military modernisation since 2008. To mitigate the challenge of advanced military weaponry, the state has funded the State Armament Programme (SAP), which is channelling trillions of Roubles into new weapons platform development and deployment, as well as into upgrades for existing systems. Beyond the SAP, there has been a parallel restructuring of the entire armed forces to create more mobile, interoperable, high-readiness forces. Russia's modern forces have the goal of not only being able to defend Russian territory, but also maintain escalation dominance in any potential conflict in its near abroad, as well as have a limited expeditionary capability to demonstrate Russia's continued importance in global security challenges.

5. As this report highlights, Moscow's concerns about what it perceives as the Western-supported 'color revolutions' seeking to weaken the state and undermine the regime in Moscow is driving paralleled efforts to bolster domestic resilience. Russia's conception of the modern conflict environment stresses the need for a whole of nation approach to mitigate efforts by external competitors to undermine civil stability and cohesion via non-military means, such as informational, political, or economic.

6. The three-pronged effort described above to ready Russia for the challenges of the 21st century is an ongoing, large-scale undertaking about which NATO parliamentarians should be aware. NATO will continue to adapt its defence and deterrence posture to ensure the Alliance's ability to defend its populations and territory in the face of Russia's challenge. This report seeks to underline the size and scope and nuances of the Russian challenge.

II. DRIVERS OF THE REPORT: KEY METRICS TO UNDERSTANDING RUSSIA'S DEFENCE SPENDING - FACTORS HELPING AND CONSTRAINING RUSSIAN MILITARY MODERNISATION

7. A key question driving in the mind of this rapporteur at the outset of this project is a simple one: If Russia spends only marginally more than France on its defence, then how is it able to achieve such a wide array of military modernisation, force restructuring (to include maintaining over 1 million personnel), and advanced weapons R&D programmes? Using average market exchange rates, the 2020 Military Balance calculates that Russia spent approximately USD 61 billion in 2019. By comparison, France and the United Kingdom spent USD 52.3 and USD 54.8 respectively (IISS, 2020).

8. The relatively small size of Russia's GDP is often cited as something that should be limiting Russia's defence investment ability (at least not without significant cost to all other state budget allocations). Russia's GDP is often considered to hover between that of Italy or Spain's – another study recently noted it is half the size of the UK or just slightly less than the state of New York (Dick, 2019). Still, Russia has invested an average of approximately 4% of its GDP toward its defence institutions over the course of the SAP iterations (World Bank (SIPRI))¹.

9. To explain the Russian military modernisation/defence investment puzzle, rather than only considering Russia's levels of defence investment as a percentage of GDP, a more complete picture may be drawn by the addition of purchasing power parity (PPP)² to measure the amount Russia is able to get as a return on the Roubles it invests.

10. Various PPP measures of Russia's defence spending show that total Russian defence spending averaged closer to the equivalent of USD 150-180 billion per year over the last five years (Barrie, et. al., 2020). One leading sector analyst believes this number is conservative and estimates that, with hidden or obfuscated military expenditures, Russia likely spends the equivalent of up to USD 200 billion (Connolly, 2019).

Limiting Factors: The Loss of Ukraine, Sanctions, and Oil

11. Ukraine is one of the few countries in the world with a full cycle of defence production; the others are the United States, France, Russia, and China (Gurak, 2019). During Soviet times, Ukraine, particularly eastern Ukraine³, hosted critical elements of the Soviet defence and space industries - the country inherited about 30% of the Soviet defence industry with the dissolution of the USSR in 1991; to include about 750 factories and 140 scientific and technical institutions (McLees and Rumer, 2014). Russia and Ukraine maintained a significant level of defence industrial exchange in the decades following the Cold War.

12. Russia's annexation and subsequent political, financial, and military support to illegal military units and mercenaries in the Donetsk and Luhansk regions in 2014 resulted in the government in Kyiv cutting Russia's defence industry off from the supply of many critical, and challenging to replace, defence technologies. For example, the construction and deliveries of both Admiral Gorshkov-class frigates and Admiral Grigorovich-class frigates were delayed to the Russian Navy due to the interruption of the supply of gas turbine engines from the Ukrainian supplier, Zorya-Mashproekt

¹ The World Bank figures from 2008 to 2019 draw upon the SIPRI Yearbook: Armaments, Disarmament and International Security. See World Bank, Military Expenditure (% of GDP) | Data (Russia).

² Purchasing power parity (PPP) measures prices in different areas using a specific good (or goods) to contrast the absolute purchasing power between currencies. PPP often produces an inflation rate equal to the price of the basket of goods at one location divided by the price of the basket of goods at a different location. The PPP inflation and exchange rate may differ from the market exchange rate because of poverty, tariffs and other frictions. PPP exchange rates are widely used when comparing the GDP of different countries.

³ Cities such as Kharkiv, Dnipro, and Mykolayiv are key centers of Ukrainian defence industrial production.

(Connolly, 2018). Russia's new Gremyashchiy-class corvettes were also delayed by the sanction-halted supply of German-made engines (Connolly, 2018). In addition, the French decision to block the sale of two Mistral-class amphibious helicopter carriers limited Russia's broader plans for power projection capabilities via its naval arm. The size and structure of Russia's surface fleet goals in SAP 2020 was significantly set back as a result of these and other defence industrial supply chain disruptions, and sanctions-related measures.

13. The Russian navy was not the only service impacted by the loss of the Ukrainian suppliers; the Russian air force's heavy transport modernisation ambitions were overhauled and, as a result of the reorganisation, significantly delayed due to heavy reliance on cooperation with Antonov (Cooper, 2018; Connolly and Boulègue, 2018).

14. In the years since 2014, however, Russia has been able to slowly overcome the challenges of the disruption of formerly imported technologies into its defence production by reorienting domestic defence producers to fill the gaps (Connolly 2018; Kofman, 2019). As a result of these import-substitution industrialisation measures, Russia's defence industry has become more isolated from the impact of sanctions or supply disruption, which could ultimately be a boon for the Russian domestic economy and for the success of the current forward-looking SAP 2027.

15. The fluctuating price of oil as well as the post-2014 Western sanctions regime are other variables often cited as limiting Russia's large-scale modernisation efforts. Close to half of Russia's budget depends on oil and gas-related revenues. While Russian defence spending is certainly very susceptible to oil price fluctuation, as is evidenced by the relative decline in Russian defence spending in the wake of the market for crude oil in 2014-2015, Russia was still able to increase its defence budget in real terms from 2010-2015 by over 60% (Barrie, et.al., 2020). As this report notes, by the end of 2017, Russian officials were credibly able to claim a 59.5% modernisation rate across the services of the Russian armed forces (Connolly and Boulègue, 2018). Russian defence spending will also likely be adversely impacted by the recent dual shock to the international oil market of the global economic slowdown related to the spread of the coronavirus and the paralleled decision by Saudi Arabia to increase oil production dramatically.

16. The significant costs of Russia's military modernisation programme since 2009 has made it clear not only to external observers, but also to a growing number of Russians, that the state is choosing *guns over butter* when it comes to allocating resources to defence versus other public sector options such as health care, education, or pensions (Snegovaya, 2020). The imbalance between defence spending and investment in other public sectors has been a driver of social discontent in recent years and has been resulting in protests and even a notable decline in President Vladimir Putin's, as well as his party's, favourability ratings (Foy, 2020). The twin economic shocks of the coronavirus pandemic and the related oil and gas market declines have been particularly hard on Russia. To counteract the damage to President Putin and his party, Russia has announced significant spending increases over the past summer to raise declining living standards and household incomes (Foy, 2020).⁴

III. POLICY AND STRATEGY: BREAKING DOWN RUSSIA'S NATIONAL SECURITY STRATEGY + RUSSIAN MILITARY DOCTRINE

17. National security strategies and military doctrines establish strategic priorities, outline perceived threats, and detail desired responses to potential security challenges. While national security strategies provide insight into a country's strategic priorities and worldview, military doctrines map the fundamental principles guiding the organisation of military forces in the pursuit of national interests. A short review of Russia's military doctrine and national security strategy, therefore, lends important insights into the nation's military posture, force planning and development, and modernisation efforts, as well as an understanding of the nation's worldview.

⁴ The introduction to section IV *Russia's Armament Programmes: SAP 2020 and SAP 2027* has additional information on the dual shock of lower oil prices and the coronavirus pandemic.

18. Clearly, the strategic context at any given moment not only impacts the focus of military modernisation efforts, but also the extent to which they can be deemed successful. Exogenous factors such as the regional and international security environments as well as endogenous variables such as the domestic political structure and demographic trends are essential considerations: the evolution of the external and internal strategic contexts has been significant when considering Russia and the Euro-Atlantic and global security environment over the past decade.

19. Russia's current military doctrine and national security strategy date from December 2014 and 2015 respectively – analysts believe both documents will be updated this coming year, due to three major factors: the cycle of Russian defence investment; the advances of the State Armament Programme driving Russia's military modernisation efforts; and the rapidly evolving international security environment, particularly in the Euro-Atlantic space (Massicot, 2019).

20. Russia's military doctrines and national security strategies of the past two decades suggest a shift in Russian perceptions of both Russia's role in the international system and the evolution of threats to its national interests. For example, while Russia's 2010 military doctrine is concerned about NATO's potential encroachment into its near abroad, the 2014 doctrine sees this as a clear and present reality undermining Russia's interests and restricting its freedom of action (Russia's Military Doctrines, 2010; 2014). Accompanying these changes in perception has been a noticeable shift to a more aggressive foreign policy by Moscow⁵, to include force deployment to Syria to shore up the government in Damascus, significant political, financial, and military support to militant groups in Ukraine, and a notable increase in military brinkmanship along NATO's eastern flank.

21. More specifically, the 2014 Military Doctrine identifies several main dangers⁶ confronting Russia. The doctrine highlights NATO's growing military capabilities and increasing international role, along with the Alliance's eastward expansion via the imposition of forces and infrastructure close to Russia's borders and in its near adjacent waters as principal dangers. Advanced military technologies are also seen as a key challenge to Russia's implementation of its defence and security goals, as are non-nuclear high precision weapons systems, advanced missile defence systems, and the advent of space-based weaponry. The development and deployment of advanced strategic missile defence systems are described as 'undermining global stability' and established norms related to the balance of strategic forces. (Military Doctrine of the Russian Federation, 2014). The only specific reference to Western systems is to the United States' Prompt Global Strike⁷ concept, but it is otherwise inferable that Russia sees the challenge in the military technology domain as coming from the West.

22. The document also highlights concern about various actors using information warfare and political subversion in conjunction with or independent of military force to destabilise or overthrow regimes via internal interference to disrupt social cohesion. This reference underscores Russia's ongoing and increasing concern for so-called foreign manipulated 'colour revolutions', which it believes its enemies use as an instrument of their modern warfare to destabilise and overthrow unfriendly regimes.

⁵ Russia's full-scale military aggression against Georgia in 2008 and occupation of two Georgian regions was the clear demonstration of Russia taking the aggressive stance in its foreign policy and attempting to forcefully redraw the borders in Europe, which it subsequently continued in the following years.

⁶ As used in Russia's official documents, military "threats" are international factors/events that can trigger an armed conflict, whereas military "dangers" are situations with the potential to escalate into military threats (Sinovets and Renz, 2015).

⁷ The US Department of Defense identified the prompt global strike (PGS) mission in 2003 as its effort to develop the ability to strike any target around the world with conventional weapons in a little as an hour, without having to use its forward deployed forces. For more information on the evolution of the PGS mission, see Woolf, Amy, "Conventional Prompt Global Strike and Long-Range Ballistic Missiles: Background and Issues," Congressional Research Service, 14 February 2020. <https://fas.org/sgp/crs/nuke/R41464.pdf>.

Achieving Russia's Defence Goals: Moscow's Identified Means to an End

23. To meet the challenges the international security environment poses to Russia, the military doctrine focuses on a broad restructuring and modernisation of the armed forces. This translates to calls for significant changes to the structure and equipment of the Russian military in line with the "political, socio-economic, military-technical and demographic conditions and capabilities of the Russian Federation" (Russia's Military Doctrine, 2014).

24. To do this, the doctrine prioritises the development and employment of advanced, high-tech weapons and equipment, such as: high precision and hypersonic weapons, electronic warfare systems, drones and autonomous underwater vehicles, information and control system (op. cit.). It also calls for an increased focus on the centralisation and digitalisation of command and control systems; faster preparation for and conduct of military operations; indirect and asymmetrical operational methods; and, the use of irregular military formation and private military companies (op. cit.). At the strategic level, nuclear weapons are recognised as remaining the ultimate guarantor of the defence and security of the nation (op. cit.).

25. A key focus in the military doctrine is a paring down and streamlining of all services to create a less bulky structure bolstered by formations in a near constant state of readiness. To this end the doctrine focuses on improving the quality of education and training (operational, combat, special, and mobilisation) across the services; ensuring the provision of modern armaments and specialised equipment, as well as the personnel's proficiency in using them.

26. Key elements identified in the doctrine for the successful modernisation of the Russian forces are the strengthening the country's military-scientific potential, undergirded by a strong defence industrial sector (op. cit.). Success in this endeavour will allow for the development of new types of high precision weapons, as well as the means of countering them. It will also focus on advanced aerospace defence assets, communication systems, reconnaissance and command systems, radio jamming systems, unmanned aerial vehicles, modern transport aviation, among others (op. cit.).

Reinforcing the doctrine: Russia's National Security Strategy

27. Russia's National Security Strategy (NSS), which followed the national military strategy by a year, does much to shore up the concepts outlined in the military doctrine and outline in more detail not only the dangers and threats to national interests, but also just what is at stake for Russia. The NSS breaks down Russian interests into sections: national defence, state and social security; Russian citizens' quality of life; economy; Russia's science, technology, and education sectors; and, health, culture, and environment (Russia's NSS, 2015; Facon, 2017). An interesting element about the Russian NSS noted by analysts is the repeated reference to 'traditional Russian spiritual-moral and cultural-historical values', which are under threat from the West on one end and terrorists/violent extremists on the other (Facon, 2017; Oliker, 2016).

28. The key for Russia to face down the vast range of threats emanating from an increasingly destabilised world is a whole of government and society approach to Russia's defence and deterrence posture going forward. The extent of the nation's success in its drive to modernise its military is underscored as a key metric to determining the overall ability to maintain an effective defence and deterrence posture (Oliker, 2016; Facon, 2017).

29. By dividing Russia's threat perception into two distinct categories, this report can better outline Russia's broader approach to military modernisation within the context of its evolving perceptions of modern conflict and the threats to Russian interests. As noted above, the threat from rapidly advancing (Western) military technologies, which can act as a force multiplier and mobility enabler, requires Russia to modernise the entire structure of its armed forces, not just the equipment

supporting them. The second is the fear of foreign manipulation of Russia's domestic stability via informational, political, or economic interference – backed by the threat of credible military action⁸.

30. The following sections assess the State Armament Programmes (SAP) that have overhauled Russian equipment since 2008 to increase firepower, speed, precision, and mobility to address the first threat category. After an overview of the SAP, the report will highlight the structural reforms across the Russian armed forces and broader whole of nation mobilisation efforts underway to stave off the challenge from the second category of threat.

IV. RUSSIA'S ARMAMENTS PROGRAMMES: SAP-2020 AND SAP-2027

31. Russia's defence procurement priorities are framed in state armaments programmes (SAP), which forecast defence investment planning for 10-year periods, but are in fact updated every 5 years.⁹ As strategic planning documents, SAPs divide defence funding between the acquisition of new weapons systems, the modernization and repair of existing military equipment, as well as investments in defence innovation. These armament plans are the result of lengthy negotiations between the defence and finance ministries, lead industry contractors, and other military-industrial stakeholders.

32. As experts have observed, Russia's approach to the SAP has three principal expressions. First, and most predominant, is essentially a retention strategy which involves the transplantation of modern technology and Western approaches on to legacy Soviet structures. Second, is the identification of a foreign, often US/Western, military capacity or concept and to emulate its advantages and then fit it into the Russian military concept. Third, Russia has sought to develop asymmetric ways and means to counter capabilities it cannot match (Radin, et. al., 2019; Crane, Oliker, and Nichiporuk, 2019; IISS, 2020).

33. SAP-2020 was signed into law at the end of 2010 and outlined a goal to achieve a 30% share of modern equipment by 2015 and 70% by 2020 - to achieve this the plan allocated an investment of USD 626 billion (RUB 19 trillion)¹⁰ over the lifecycle of the programme (Crane, Oliker, and Nichiporuk, 2019). SAP-2020 was complementary to the wider military modernization programme that followed the 2008 Russia-Georgia war, which sought to improve force effectiveness (DeGhett, 2016).

34. In December 2017, President Putin approved the newest armament plan – known as SAP-2027 – to shape the country's procurement for the coming decade. As noted above, while SAPs are supposed to be updated every five years, the transition to SAP-2027 came two years later than planned due to the 2014 fall in oil prices, which complicated defence forecasting, thereby pushing back the planned announcement of the revised SAP (Cooper, 2018). With a projected USD 325 billion (RUB 19 trillion)¹¹ planned for the period between 2018 and 2027 the newer SAP-2027 is more limited in scope and aims than its predecessor (Crane, Oliker, and Nichiporuk, 2019).

35. Although both SAP-2020 and SAP-2027 are strictly classified, enough information is publicly available to understand at least the contours of Russia's procurement goals. As part of the broader restructuring, SAP-2020 directed significant funding towards the naval and aerospace forces, while SAP-2027 is balanced towards the Russian ground forces and improving elite rapid reaction forces (Special Forces (Spetsnaz), Airborne and Air Assault Troops, and Naval Infantry) (Bowen, 2020). It

⁸ While this may read like exactly what Russia did in its campaign against Ukraine in 2014 or, to a lesser degree, what it has done in its campaigns of intimidation against the states in its 'near abroad'; this is in fact what the Russian government perceives the West's strategy; to contain Russia and undermine its international influence (Monaghan, 2016; Giles, 2016).

⁹ The term "state armaments programme" (SAP) is often abbreviated as GPV, which corresponds to the Russian equivalent term "gosudarstvennaia programma vooruzheniia."

¹⁰ RUB 19 trillion = USD 626 billion at the 2010 exchange rate. It averages 63 billion a year

¹¹ RUB 19 trillion = USD 325 billion at the 2017 exchange rate. It averages USD 32.5 billion a year

is also clear that SAP-2027 is designed to consolidate the relatively successful implementation of its predecessor, SAP-2020.

36. Prior to the COVID-19 pandemic outbreak, experts agreed that, unless recession hit, Russia would likely meet the SAPs' goals (Connolly et. al, 2018). At the end of 2019, Russia felt confident SAP-2027 was economically viable: Russia's Defence Minister Sergei Shoigu announced on 24 December that the country's modernisation strategy was reaching its stated goals, with the share of new, modernised equipment reaching 68.2 per cent, and the nuclear forces reaching 76 per cent of its modernisation target (McDermott, 2020).

37. The reality of 2020, however, has proven otherwise. The significant economic impact of the COVID-19 pandemic has forced Russia to announce defence budget cuts. In September 2020, the Ministry of Finance suggested cutting SAP 2027 spending by 5 per cent between 2021 and 2023, which would reduce spending on by about USD 2.87 billion (RUB 225 billion)¹² and thereby reduce total defence expenditures by about 2% (Tétrault-Farber and Darya, 2020)¹³. Total cuts to defence spending could amount to as much as USD 4.12 billion (RUB 323 billion) (McGerty, 2020).¹⁴

38. Russia's decision to reduce military spending comes as the country is facing a clear economic crisis. The coronavirus pandemic is impacting Russia's economy significantly, with real GDP predicted to contract by 4.1 per cent (World Bank Group, 2020). Moreover, low oil prices, which in April fell to USD 20 per barrel, have placed an additional burden on Russia's domestic budget – Russia's budget is balanced at USD 42.40 per barrel, though President Vladimir Putin recently said 'it would be better' if they surpass USD 46 per barrel (Paraskova, 2020a). Given the current oil market trends, which seem to be hovering in the low USD 40s per barrel (Paraskova, 2020b), Russia's decision to reduce defence outlays may indeed signal that SAP-2027 is farther from reach than initially predicted. Russia's National Wealth Fund, which is reported to have had approximately USD 150 billion in March 2020, will likely be able to cover some of the short fall for the short-term depending how and if Russian officials decide to use it during the economic crisis (Paraskova, 2020a).

A. NAVAL FORCES AND COASTAL DEFENCES

39. As noted above, the Russian navy benefitted significantly from SAP-2020, as it was allocated approximately USD 165 billion (RUB 5 trillion)¹⁵ over the programme duration, which corresponds to around 26% of SAP-2020's total funding. The money was used to finance the acquisition of, among others, more than fifty surface combat vessels and more than two dozen modern submarines (including nuclear-powered ballistic missile submarines for the Strategic Nuclear Forces) (Connolly and Boulègue, 2018). In view of the strategic importance of coastal defence, SAP-2020 prioritised building new classes of small, well-armed surface combat vessels, particularly frigates, corvettes, and small missile ships (Cooper, 2018). Less expensive than guided missile destroyers and cruisers, the ships are, however, made more powerful by their ability to carry new anti-ship and land-attack cruise missiles (Crane, Olikier, and Nichiporuk, 2019). Despite the industrial delays, the share of modern surface ships increased from 41% in 2013 to 54% by 2017 (Connolly and Boulègue, 2018).

40. The re-equipment of coastal defence units with new missile systems was very successful: Thirteen divisions of Bal and Bastion missile defence systems, with ranges of 130km and 500km, respectively, were acquired. By the end of 2017, the share of such modern weapons was reported to be 96%, compared with just 53% in the navy as a whole (Cooper, 2018). The modernization of Russia's coastal missile systems is slated to continue under SAP-2027 (Connolly and Boulègue, 2018).

¹² RUB 225 billion = USD 2,872 million at the 2020 exchange rate of RUB 1 = USD 0.0127546.

¹³ The same proposal includes spending cuts of 10% for other sectors, except for the court system, government debt servicing, and civil servants' wages (Tétrault-Farber and Darya, 2020).

¹⁴ RUB 323 billion = USD 4,124 million at the 2020 exchange rate of RUB 1 = USD 0.0127546.

¹⁵ RUB 5 trillion = USD 165 billion at the 2010 exchange rate.

41. SAP-2020 planned the acquisition of seven Yasen-class submarines. The programme was delayed; by the end of 2017, only one such submarine had been commissioned, with six in various stages of construction due to unforeseen cost overruns. When completed, the new nuclear-powered submarines will add a significant long-range cruise missile capability. The acquisition of eight Lada-class diesel-electric submarines was also hampered by the inability to develop a quiet air-independent power unit (Crane, Olikier, and Nichiporuk, 2019).

42. An important project started in SAP-2020 was the development of the Zircon ship-launched hypersonic cruise missile. The Zircon is deployable on surface and subsurface naval platforms as well as on the Bastion-P mobile coastal defence system missile, and is designed to be capable of hitting both ground and naval targets at up to 1000 km. Russia reportedly conducted the first successful test of the Zircon on 6 October 2020, when the test missile was launched from the North Sea frigate Admiral Gorshkov and struck a maritime target 450km away at a top speed over Mach 8 (Stashwick, 2020). When fully operational, analysts note it could have a profound impact on naval warfare (Baev, 2019).

43. Modernisation of large surface combatants lagged, which resulted in an overall reduction of Russia's surface fleet due to the pace of ship retirements. Design work for a new destroyer, the Lider-class, has been carried out, but it is still to be determined when construction will begin. The ship will be nuclear powered, stealthy, and equipped with the S-500, Kalibr, and Onyx long-range anti-aircraft missile systems (Boulègue, 2019). Russia's sole aircraft carrier, the Admiral Kuznetsov,¹⁶ will be undergoing repairs and modernisation until at least 2022, and modernisation on the rest of existing vessels will likely also be carried out under SAP-2027. Even though Moscow called for the development of new heavy aircraft carriers in 2017, analysts believe there is little chance these ships will be built over the SAP-2027 period (Connolly and Boulègue, 2018).

44. Overall, a large-scale overhaul of the Russian navy is unlikely to take place by 2027. A reason for the low expectations is that Russia's shipyards showed a mixed performance during the implementation of SAP-2020 – only the Black Sea Fleet has seen a substantial modernisation of its submarine force, as it received 6 Improved Kilo-class submarines. The country's shipbuilding industry encountered serious challenges in delivering high-quality ships on schedule, on budget, and in the desired numbers. In particular, the industry seemed capable of supplying more advanced versions of older designs, but faced difficulty when developing newer, post-Soviet models (Connolly, 2017). The limitations on Russia's shipbuilding industry have been exacerbated by Western sanctions, the US and European restrictions on military exports – particularly dual-use technology – and the squeeze on Moscow's defence budget. Under SAP-2027, the naval forces are expected to receive a lower share of the defence budget than in SAP-2020 (Crane, Olikier, and Nichiporuk, 2019). As a result of the funding pressures, SAP-2027 eschews the development of large surface vessels, such as destroyers or amphibious assault ships, and instead focuses on modernizing legacy ships or procuring smaller, more adaptable vessels, like frigates and corvettes (Connolly and Boulègue, 2018).

B. AEROSPACE FORCES AND AIR DEFENCES

45. Approximately 25% of SAP-2020 funding was earmarked for the Russian aerospace forces, which equalled USD 155 billion (RUB 4.7 trillion) at the time in 2010, but was greatly reduced in value given the significant devaluation of the ruble after the dual hit in 2014 of collapsing oil prices and international sanctions imposed on Russia after its illegal annexation of Crimea and military intervention in Ukraine.¹⁷ The Defence Ministry announced at the end of 2017 that the share of modern fixed wing aircraft was 55% and helicopters 76%¹⁸ (Connolly and Boulègue, 2018). More than 1,000 aircraft, both fixed and rotary-wing, have been acquired since 2014 (Lindley-French,

¹⁶ Work to overhaul the Admiral Kuznetsov aircraft carrier began in 2017, after the ship had been operating off the Syrian coast. Work has been complicated by two accidents: one in 2018, when a crane fell on the deck; and, another when fire broke out on 12 December 2019.

¹⁷ RUB 4.7 trillion = USD 155 billion at the 2010 exchange rate.

¹⁸ Compared to 23% and 39%, respectively, in 2013

2019). Russia has sought to replace its combat aircraft inventory with a mix of modernised and next-generation aircraft. While new designs have lagged, the modernisation of Soviet-era systems using improved munitions, sensors, and engines, has increased the lifespan and capabilities of several aircraft models; especially an upgraded version of the Soviet Su-27 (Flanker)¹⁹.

46. The development of the Su-57 (Felon) stealth air-to-air fighter is supposed to be Russia's attempt to match the F-35 Joint Strike Fighter's industry-leading capabilities. Although its development program suffered delays, the fighter was deployed to Syria in early 2018 for two days of combat testing. Importantly, although classed as a fifth generation jet, the Su-57 is currently using the same engine as the Su-35S; the engine that is supposed to enhance its stealth is just beginning to undergo testing, having been delayed due to difficulties in developing the associated technology (Cooper, 2018; Crane, Olikier, and Nichiporuk, 2019). Overall, analysts consider it unlikely that Russia will be able to introduce significant quantities of the Su-57 during the SAP-2027 period, given the earlier production and design delays (Bowen, 2020).

47. The aerospace forces also increased its numbers of air-launched weapons, especially emphasising air-to-air missiles, air-to-surface Precision-Guided Munitions (PGMs), and long-range cruise missiles (Barrie, 2018). Work was also carried out on the development of the Kinzhal, a manoeuvrable air-launched ballistic missile; initially tested using the MiG-31 (Foxhound) in 2018, the missile is also planned to be used with the Su-34 medium-range bomber and the Tu-22M3 long-range strategic bomber of the Strategic Nuclear Forces.

48. Approximately 18% of SAP-2020 was earmarked for air and space defence, with the main goal of developing and purchasing large numbers of advanced surface-to-air missiles (SAMs), as well as spacecraft and launch systems (Connolly and Boulègue, 2018; Lindley-French, 2019). By the end of 2017, the share of modern armaments in the air defence forces had reached 68% (Cooper, 2018).

49. To rebuild Russia's missile early warning system, more than ten Voronezh radars were meant to be purchased by 2020; eight had entered into service by 2017 (Cooper, 2018). The Russian government has announced it will have the system operational in Crimea by the end of 2020 (Jones, 2019). The most significant air defence development, however, was the rapid rise of divisions equipped with the advanced S-400 Triumf missile system, from only four in 2011 to 36 by the end of 2017 (Cooper, 2018; Lindley-French, 2019)²⁰. The next-generation S-500 Prometey missile system was supposed to have been deployed starting 2015, but the programme was delayed. On 23 August 2020, Russian Deputy Prime Minister Yuri Borisov announced to journalists at Russia's Army-2020 forum that testing of the system has started and that it will be deployed by 2021 (Batyayev, 2020). Another missile defence system that was expected to enter service in 2015 was the medium-range S-350 Vityaz; 38 divisions were supposed to be deployed by 2020, but this has also fallen behind schedule. Between 2012 and 2017, nineteen divisions of the short-range Pantsyr-S1 (SA-22 Greyhound) air defence system also entered service (Cooper, 2018).

50. SAP-2020 also provided for the modernisation of Russia's space-based systems, with 55 military satellites launched into orbit between 2012 and 2017. Russia has also been developing new military satellites, such as the Repei reconnaissance system and the Kosmos-2519 'satellite inspector', which analysts claim could, in the future, form the basis of an anti-satellite system (Hendrickx, 2017). The development of the new Angara family of space launchers was also a

¹⁹ For example, the Su-30SM (Flanker-C), Su-30M2, and Su-35S (Flanker-E) fighters. According to the command of the Russian aerospace forces, 100 Su-30SM and 68 Su-35S were delivered by the beginning of 2018 (Barrie, 2018). Since 2012, more than 70 Su-34 (Fullback) models were brought in to replace the aging Su-24 and Su-24M (Fencer), of which some have also started to be upgraded to the Su-24M2. See: Crane, Olikier, and Nichiporuk, 2019. Large numbers of helicopters were also acquired, but not newly developed, in particular the Soviet design Ka-52 (Hokum) and Mi-28N (Havoc) combat helicopters, along with several variants of the Mi-8 (Hip). Development of the Ka-52 Katran carrier helicopter started (Cooper, 2018).

²⁰ Russia also deployed more than 700 launchers of its S-300 (SA-10 Grumble) long-range SAM system by the same date (Crane, Olikier, and Nichiporuk, 2019).

high priority, due to the increasing unreliability of Soviet-era launchers (Cooper, 2018). Several space launch failures, however, have complicated the goal of building a useful grouping of military satellites (Baev, 2019).

51. Under SAP-2027, the share of the procurement budget allotted to the aerospace forces is expected to stay about even. With SAP-2020 having replaced much of the legacy combat aircraft, SAP-2027 will likely focus on filling certain procurement gaps. For example, SAP-2020 did not provide an adequate supply of military transport and refuelling aircraft, especially for Russia's Airborne Assault Troops (VDV) (Connolly and Boulègue, 2018). As noted above, Russia's reliable access to military transport aircraft was halted by the breakdown in Moscow's relations with Ukraine, and the transition to domestic production of transport aircraft is ongoing. Until the domestic production of Russia's heavy-lift aircraft is in place, analysts have suggested that Russia may struggle to sustain military operations further away than its immediate neighbourhood (Connolly and Boulègue, 2018).

C. GROUND FORCES

52. Russia's ground forces received a relatively small share of the SAP-2020 – around 14% which corresponded to USD 88 billion (RUB 2.6 trillion)²¹ (Connolly and Boulègue, 2018), again with the same caveat about the significant decline in the value of the ruble after 2014. The central effort focused on upgrading artillery and armoured systems (Lindley-French, 2019), with SAP-2020 expected to finance the delivery of around 2,300 Main Battle Tanks (MBTs), 17,000 armoured vehicles, and 2,000 artillery systems. According to Defence Minister Shoigu, from 2012 to 2017, the share of modern equipment in the Russian Ground Forces increased from 15% to approximately 45% (Cooper, 2018).

53. The share of armoured vehicles increased from 20% in 2013 to 56% in 2017 (Connolly and Boulègue, 2018)²². The development and procurement of a new generation of armoured vehicles, such as the T-14 Armata MBT and the Kurganets-25 Infantry Fighting Vehicle (IFV) and armoured personnel carrier, which had gathered most attention during SAP-2020, were delayed, and regular delivery of either system has yet to begin. The first prototype of the T-14 Armata appeared in 2015 and was heralded as the future of the Russian tank at the time; serial delays, cost overruns, and funding challenges from the coronavirus pandemic have now pushed delivery of the vehicle beyond 2021 (McDermott, 2020)

54. Ground forces acquired new multiple rocket launchers (MLRS), most significantly the Tornado-G and Tornado-S systems (Cooper, 2018). Improvements in electronics, including communications systems and fire control systems, as well as the increased use of drones to enhance battlefield intelligence of artillery regiments also changed the face of artillery regiments (Crane, Oliker, and Nichiporuk, 2019; Lindley-French, 2019).

55. The acquisition of the Iskander-M operational missile system, however, was a significant upgrade, increasing Russia's missile brigades' operational range up to 500km. By the end of 2017, the target of ten divisions, initially set to 2020, had already been met; in early 2018, another division was introduced in Kaliningrad (Cooper, 2018).

56. Ground forces are expected to gain a higher share of the SAP-2027 procurement budget, which will largely come at the expense of the navy. The Russian army and the VDV could potentially obtain over 22% of SAP-2027 funding, up from 14% under SAP-2020 (Connolly and Boulègue, 2018). This corresponds to approximately USD 73 billion (RUB 4.25 trillion)²³ at the 2017 exchange rates. The higher share of funding for the ground forces is likely due to gaps in capabilities exposed by Russia's combat experience in Ukraine and Syria (Connolly and Boulègue, 2018). For example,

²¹ RUB 2.6 trillion = USD 88 billion at the 2010 exchange rate.

²² According to Shoigu, between 2012 and 2017, 3,237 new and modernised tanks (Principally modern versions of the T-90, T-80, and T-72) and armoured vehicles were acquired (Cooper, 2018).

²³ RUB 4.25 billion = USD 73 billion at the 2017 exchange rate.

analysts have shown military transport deficiencies have a significant impact on the abilities of Russian ground forces to operate in expeditionary operations. Thus, in Syria, Russia was reportedly only able to sustain its operations thanks to the Syrian government's loan of transportation vehicles, as well as allowing Russia access to key naval facilities in addition to the Russian naval installation in Tartus, Syria (Connable et al., 2020)

57. Under SAP-2027, the ground forces will likely be equipped with modernized artillery systems, including Uragan-M1 and Tornado-S MLRS. Meanwhile, the procurement of battle tanks will be centred around upgrades of existing models, rather than the acquisition of next-generation platforms. When it comes to armoured vehicles, the ground forces will likely continue to rely on a combination of Soviet-era designs and some new systems, such as Kurganets-25 IFVs. The older Soviet models have been kept because they are often cheaper and easier to produce and maintain (Connolly and Boulègue, 2018).

D. STRATEGIC NUCLEAR FORCES

58. Strategic Missile Forces: Approximately 5% of SAP-2020 was allocated to acquire around 300 Intercontinental Ballistic Missiles (ICBMs) and Submarine-Launched Ballistic Missiles (SLBMs) (Connolly and Boulègue, 2018). When it comes to its strategic nuclear arsenal, Russia continues to prioritise land-based ICBMs over the air and naval legs of the nuclear triad (Crane, Oliker, and Nichiporuk, 2019). Significant progress was reached in renewing Russia's ICBMs in SAP-2020. The principal innovation was the RS-24 Yars, a MIRV-equipped, thermonuclear-armed ICBM, highly likely developed out of the Topol-M. The system can be deployed in both silo and transportable variants and is meant to replace the UR-100N. Significant development was also achieved in developing the heavy, MIRV-equipped and thermonuclear-armed RS-28 (SS-X-30 Sarmat) ICBM, meant to replace the R-36M (SS-18 Satan).

59. Russia also carried out developmental work on a new rail-based ICBM, the Barguzin, to replace the previous Molodets (SS-24 Scalpel), which was decommissioned in 2005 in accordance with START II. In late 2017, this project was halted, likely due to a combination of financial considerations and to it being deemed non-essential to Russia's national security (Cooper, 2018). The RS-26 Rubezh (SS-X-31), which was supposed to carry the Avangard hypersonic vehicle, was also reportedly put on hold in 2018 (Crane, Oliker, and Nichiporuk, 2019).

60. SAP-2020 also saw investment in new hypersonic missile systems, such as the Avangard hypersonic glide vehicle, to be launched from the UR-100N and the RS-28.

61. Naval Component: One of the main priorities of SAP-2020 was the renewal of Russia's fleet of strategic ballistic missile submarines (SSBNs) (Cooper, 2018). The new investment is meant to help the Russian Navy to transition from a force based on old Kalmar (Delta III-class) and Delfin (Delta-IV-class) submarines, to the more modern Borei-class SSBNs. There are currently two Borei models: the original Borei, on which construction began in 1996 and the first submarine of the class went to sea trials in 2009 – a total of three original Borei-class submarines are now in operation. a quieter fourth-generation nuclear submarine armed with sixteen new RSM-56 Bulava (SS-N-32) SLBMs, which have up to six warheads, are more accurate, and also carry more countermeasures against anti-ballistic missile systems. SAP-2020 provided funding for a successor model, the Borei-A class submarine. The Borei-A features upgraded silent propulsion, improved manoeuvring and longer operational ability at depth, as well as advanced weapons control systems. Funding has been allocated for a total of seven new Borei-A submarines, which are at various stages of construction, which has been slowed by several design challenges, particularly with the Bulava missile system (Crane, Oliker, and Nichiporuk, 2019; Navy Recognition, 2020).

62. Strategic Bombers: SAP-2020 focused on the upgrading and new construction of existing long and medium-range aviation models for Russia's strategic forces. It did not fund new designs. The Soviet-era Tu-95 (Bear) makes up the bulk of the force, there are smaller numbers of more modern Tu-160 (Blackjack) strategic bombers, along with the Tu-22M3 (Backfire) medium-range bombers.

All have undergone or are in the process of undergoing modernisation (new radars, more advanced avionics, and some airframe improvements). Furthermore, in 2015, a decision was taken to renew production of the Tu-160 in a modernised form - the Tu-160M2. All strategic force bombers have the capability to employ modern munitions, such as the Kh-555 and Kh-101/102 subsonic cruise missiles (Cooper, 2018; Crane, Olikier, and Nichiporuk, 2019). The development of a next generation stealth long-range strategic bomber, the PAK DA²⁴ meant to replace the Tu-95, also started under SAP-2020, and is still underway (Cooper, 2018). Design and production challenges are delaying the introduction of the new bombers (Bowen, 2020).

E. RUSSIA'S NEW "INVINCIBLE WEAPONS"

63. As noted in recent committee reports, President Vladimir Putin has touted Russia's investment in new 'wonder' missiles capable of overwhelming any possible missile defence system (Baev, 2019). Russia alleges the driver of these missile systems has been its long-standing concern over the proliferation of modern missile defence systems, which Moscow fears would jeopardise Russia's strategic deterrent capability. These missiles include a nuclear-powered and nuclear-armed system with global reach, an intercontinental hypersonic cruise missile, an air-launched ballistic missile, and a nuclear-powered and armed underwater drone.

64. The Avangard missile is a supersonic glide vehicle capable of reaching speeds up to Mach 20 and is manoeuvrable. As noted above, the missile acts essentially as a warhead for the SS-19 Stiletto, but is reportedly also to be carried the new Sarmat ICBM (Baev, 2019). The Kinzhal missile is an air-launched ballistic missile that can manoeuvre at speeds up to Mach 10 (Baev, 2019). Two other missile projects are based on a design which incorporates a nuclear reactor engine that provides the system with almost unlimited range; one is said to be a sea or ground-launched cruise missile, while the other is the Poseidon underwater drone. The Poseidon is reported to be armed with a 10-megaton nuclear warhead, which, when exploded underwater, would trigger a tsunami (Baev, 2019). The Zircon missile system, mentioned above, was mentioned the following year in President Putin's 2019 February address. The Zircon will have a flight speed of approximately Mach 9 and capable of striking land and sea targets at a range of over 1,000 km (Cooper, 2019).

65. A range of other new weapons are also being funded under the SAP. A range of potential anti-satellite weapons is reportedly making progress but is underreported by Russia (Cooper, 2019). One is the Peresvet, a ground-based, nuclear-powered laser capable of destroying drones, aircraft, and even low-orbit satellites. Another project reportedly being funded is the "Nudol" (PL-19), which would be a mobile air-space defence system (Cooper, 2019).

66. Another variant of the new missile suite, the Burevestnik, which is a nuclear powered, very long-range, cruise missile, and classified as the SSC-X-9 Skyfall by NATO, was allegedly involved in a relatively high-profile accident in the summer of 2019 (Kryzaniak, 2019). On 8 August 2019, just offshore from the Nenoksa Missile Test Site, a failed test of the Burevestnik caused a significant explosion that killed several people, including prominent Russian nuclear scientists. The radiation contamination from the explosion contaminated a large area surrounding the White Sea testing site, including the city of Severodvinsk (Sanger, 2019). Such an accident highlights the growing concerns many have of the dangers surrounding Russia's acceleration of its new weapons programmes quickly in order to compete with the United States and, to some degree, China in the modern international security environment.

F. ELECTRONIC WARFARE SYSTEMS

67. As noted above, two key principles guiding Russia's military modernisation are; the identification of a foreign, often US/Western, military capacity and to emulate its advantages and then fit it into the Russian military concept, and the development of asymmetric ways and means to counter military capabilities of adversaries it cannot match. One of the clearest examples of this has

²⁴ "Prospective aviation complex for long-range aviation"

been the Russian identification of electronic warfare (EW)²⁵ as a means to undercut the Allies' military advantage in advanced C4ISR²⁶ technologies, which allow for more effective movement and firepower individually as well as interoperability of their more advanced weapons platforms. Russia identified not only Allies' clear dominance in the EW domain in the early post-Cold War era, but also their growing dependence on EMS for the command and control of their military forces as well (IISS, 2020).

68. Reinforcing Russia's recognition of its own shortcomings in EW was the poor performance of Russia's systems in the 2008 Russia- Georgia War. During the war, the inability of Russian aircraft to jam Georgia's air defence systems led to the loss of two aircraft, while Russia's own airspace management systems also failed to properly identify targets, resulting in another four planes shot down by friendly fire (Kofman, 2018b). To overcome the visible EW deficit, Russia intensified its efforts to improve its own C4ISR, with SAP-2020 committed to achieving a target of 70% modernisation by 2020 (McDermott, 2017). SAP-2020's focus on cutting-edge EW systems would also permit the disruption of any competitor's use of EMS via electronic attack, thereby making Allied forces' dependence on EMS a potential vulnerability (IISS, 2020). Radio frequencies emanating from a satellite provide the satellite-navigation signals used by both armed forces and societies for modern day essentials such as timing and navigation (IISS, 2020).

69. Experts agree Russia has been quite successful in its efforts to advance its EW capabilities (McDermott, 2017; Radin, et. al., 2019, von Spreckelsen, 2018). Russia's modern EW systems have been critical to their operations in both Ukraine and Syria; in Ukraine, Russia's use of EW was primarily offensive, while in Syria it was used for force protection: Most visibly, Russia was able to jam Ukrainian military radio signals in Crimea as it positioned its forces to occupy and illegally annex the peninsula (IISS, 2020).

70. Among the range of EW systems Russia now has in its arsenal, experts agree a few are particularly noteworthy. The Moskva-1, for example, is at the core of Russia's air defence systems and has a 400km range for real-time intelligence gathering, jamming, and signal suppression. Another is the Borisoglebsk-2, which jams mobile satellite communications and radio-navigational units. The Krashukha-2 can not only jam an adversary's radar, but it can provide a false target to a system after it has been jammed, which will lead an aircraft away from its original target, thereby protecting Russian forces (McDermott, 2017; IISS, 2020). Russian EW systems have also been linked to significant spoofing of global navigation satellite systems (GNSS), which though often traced from systems operating in Ukraine and Syria, has been reported to be a threat to broader civilian and maritime safety (C4ADS, 2019). A recent report by the Center for Advanced Defense (C4ADS) highlighted approximately 10,000 spoofing incidents affecting over 1,300 civilian vessel navigation systems between 2016-2019 (C4ADS, 2019).

²⁵ NATO defines electronic warfare as "a military action that exploits electromagnetic energy, both actively and passively, to provide situational awareness and create offensive and defensive effects" (von Spreckelsen, 2018). The use of EW is to seek to deny an adversary from control of, or advantage in, the electromagnetic spectrum (EMS), while, in parallel ensuring unhindered access to EMS by your own forces (or those of your allies). Modern military forces are increasingly reliant on access to the EMS for situational awareness at all levels (strategic, operational, and tactical); they are also reliant on it for almost all forms of communication and navigation. Radio frequency emissions can be used by land, air, sea, and space radars to detect and track targets. They also carry voice, data, and imagery, which helps inform forces' situational awareness and C2 functions. Radio frequencies emanating from a satellite provide the satellite-navigation signals used by both armed forces and societies for modern day essentials such as timing and navigation (IISS, 2020). EW can be employed in military operations three principal ways – attack, protection, or support. Jamming is a key means of attack in EW, as it can disrupt signalling. Protection of systems involves the hardening of sensors and electronic emission control, which makes it more difficult for an adversary to locate a target. EW support is comprised of the means for intercepting, identifying, and locating EM sources to either attack them or protect one's own systems from attack.

²⁶ C4ISR – Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance.

V. STRUCTURAL AND ORGANISATIONAL REFORMS

71. Complementary to the SAP-2020 has been a wide-ranging set of structural and organisational reforms meant to increase the Russian Armed Forces' combat readiness, responsiveness, and coordination. These have included the simplification of structural organisation, the development of fast and reliable command and control through the exploitation of modern information and communication technologies, and increased training, drills, and snap inspection. Emphasis has also been placed on shifting to a more professionalised military as a means of retaining skilled personnel (Crane, Oliker, and Nichiporuk, 2019). Overall, these reforms have created more effective forces, able to deploy rapidly and to apply modernised equipment and combat capabilities in the context of combined arms and joint operations, thus responding to Russia's changing strategic needs (Crane, Oliker, and Nichiporuk, 2019).

A. FORCE POSTURE

72. Military Districts: Russia replaced the Soviet-inherited military districts with four joint military districts at the end of 2010: Western, Southern, Central, and Eastern Military Districts. At the end of 2014, Russia added the Northern Fleet Joint Strategic Command (OSK - *Obedinonnye Strategicheskoe Komandovanie*), to include the area around Murmansk, Arkhangelsk, and numerous Russian islands in the Arctic Ocean²⁷. The reorganisation of the districts was primarily meant to facilitate joint command and control and to increase interoperability between different domains of operations (Beznosiuk, 2016; Dick, 2019). By the end of 2019, the Northern Fleet OSK was meant to be upgraded and transformed into a Military District covering Russia's entire Arctic territory and the Northern Sea Route, thus reflecting the growing importance of the Arctic in Russian strategic thought, as well as the process of continued structural adaptation to changing geopolitical circumstances (IISS, 2020).

73. Order of Battle: The same structural simplification trend was applied to the operational domains, where the pattern that was followed was one of design, testing, and adjustment (IISS, 2013). The bulky Soviet model of divisions, which required considerable time and resources to move long distances, were disbanded and replaced with brigades in 2009. These, by virtue of small size, are more agile and more responsive (Beznosiuk, 2016), therefore leading to improved mobility and a general facilitation of small-scale operations, with less external support required. The initial plan was to categorise the brigades in light, medium, and heavy formations, but this was eventually deemed unworkable and was abandoned (IISS, 2017).

74. Post-2008, Russia's ground force posture continued to adapt to changing strategic interests and the evolving perception of the current and future nature of warfare. The experience of the 2008 Russia-Georgia war led to a focus on developing a high readiness force structure capable of conducting operations in the near abroad against a weaker opponent.

75. While brigades proved suitable to conduct rapid response operations in low-level armed confrontations, they could not meet the demands of prolonged combat, much less large-scale conventional warfare conducted under conditions of possible nuclear escalation (Dick, 2019). As a result, the division was re-established as a unit able to sustain such combat. While in 2013, there were only two divisions left in the Russian force structure; by the end of 2017, there were three full-sized divisions, and more in the process of being formed (Dick, 2019). Russia's end goal now appears to be the development of an order of battle comprising a mix of divisions and brigades capable of fulfilling different missions (Dick, 2019).

²⁷ In addition to that the Russian Federation has deployed its military bases outside of the county, including in Georgia (includes two Russian military bases with about 10000 militaries and 3000 FSB in total illegally deployed in Georgia's Abkhazia and Tskhinvali regions as part of Russia's Southern Military District) Ukraine, Moldova, Belarus, Armenia and Syria. The force structure and the offensive equipment that the Russian Federation maintains in its illegal military bases in the Eastern Europe pose direct threat to the security of Black Sea and entire Euro-Atlantic region.

76. More controversial has been the structural reform of the air domain, which tried to re-organise forces into large air bases housing mixed air groups (IISS, 2017). This led to assets and personnel of air force regiments and squadrons being organised into fifteen air bases by 2012, with the largest of them housing 150-200 fixed and rotary wing aircraft (IISS, 2012). During snap inspections and reviews of reforms, however, these air bases proved to be ineffective. As a result, the reform was abandoned and the original division-regiment structure reinstated (IISS, 2015).

77. In 2011, Russia formed the Aerospace Defence Forces, replacing the Russian Space Forces and bringing air defence, missile defence, early warning, and space monitoring systems under unified command (IISS, 2012). In 2015, the Russian Aerospace Defence Forces and the Russian Air Force were merged to form the current Russian Aerospace Forces, so as to provide more efficiency and logistical support (IISS, 2016).

78. The rest of the services underwent little structural changes, the reforms focusing instead on renewal of equipment and infrastructure (IISS, 2012; IISS, 2014).

79. **Rapid Reaction Forces:** As part of structural reorganisation reforms, Russia also sought to establish a pool of rapid reaction forces, capable of responding to the demands of an unpredictable geopolitical environment: The relatively poor performance of Russian forces in the 2008 war with Georgia drove initial efforts, Russia's decision to act in Ukraine and Syria reinforced the initiative. A two-pronged effort drove the necessary reforms: a significant increase in airborne troops and the development of battalion tactical groups (BTGs) held at two-hours' notice to move. Russia's goal is to reach 60,000 airborne troops by around 2020, a 60% increase (Dick, 2019); 2019 reports indicate that the Ground Forces had formed a standing combat-ready fighting core of 136 BTGs (compared to 65 in 2016), including Airborne Forces units, consisting exclusively of professional servicemen (IISS, 2020). Such forces reinforce Russia's goal to dominate its near abroad – rapid response to instability or conflict and be capable of escalation dominance over regional actors or intervening external force (Crane, Oliker and Nichiporuk, 2019).

80. **Special Operations Forces:** Russia's conception of modern warfare underlines the need for significant investment in special operations forces (Spetsnaz) – as a result, Russia has sought to double the size of the Spetsnaz (Dick, 2019). The Special Operations Command (modelled on the US Delta Force) was formed in 2012 in an attempt to unify special forces capabilities at the command level (IISS, 2014). It consists of five special operations divisions and a total number of 1,500 troops, allowing it to be used as an effective instrument in small-scale operations (Beznosiuk, 2016). The Russian Spetsnaz efficiency was on display during the 2014 annexation of Crimea. It has also been essential to the training, equipping, and directing the pro-Russian insurgents operating in Eastern Ukraine (Beznosiuk, 2016).

81. **Command and Control:** The 2008 Russia-Georgia war highlighted the lack of efficient, flexible, and unified command and control in the Russian forces. Reforms have therefore focused on the simplification and unification of command and control systems to streamline decision-making (Braun, 2012). At the structural level, as detailed above, reforms included the reorganisation of a four-level command structure (military district – army – division – regiment) into a more flexible and sustainable three-level model (military district – operational command – brigade), where military district commanders are in control of all formations in their respective area of responsibility, with the exception of strategic missile forces. This led to fewer major commands assuming responsibility over a more streamlined force (Crane, Oliker, and Nichiporuk, 2019).

82. Aside from structural changes related to force posture, Russia has also carried out reforms directly related to command and control, with specific emphasis on the creation of the National Defence Management Centre (NDMC)²⁸, also known as the National Defence Control Centre, in

²⁸ The centre has three levels of command: A supreme command centre, which controls the strategic nuclear forces; a combat command centre, which maintains centralised combat control of the armed forces and monitors the global political-military situation, serving as the main forecasting and analytical

December 2014 (McDermott, 2014). The NDMC is mainly intended to unify all existing command and monitoring systems across Russia, acting as a single point of coordination to enhance cooperation and interoperability and increase responsiveness during crises. The centre is meant to significantly reduce the time involved in decision-making and to minimise the mobilisation gap (IISS, 2019), reportedly requiring no more than two hours to reach a full understanding of the situation and to adopt all needed decisions and orders to be carried out in full by the troops (Zakvasin, 2015).

83. Reforms regarding command and control have also included a technological component in developing and implementing C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) technologies. In 2019, Russia announced the introduction of a new automated command and control system in the WeMD, supposed to allow the high speed communication of information from the NDMC and other relevant commands, as well as the effective control of varied and complex force groupings, reducing the time involved in the command cycle by two/three times (McDermott, 2019).

B. EXERCISES

84. A third essential element of the structural modernisation has been the institution of a cycle of large-scale strategic and snap exercises, which have played a large part in improving Russia's overall combat readiness (Beznosiuk, 2016; IISS, 2018). Starting in 2008, on a yearly rotating basis, each military district has been leading a large-scale strategic exercise: Zapad, Tsentr, Kavkaz, and Vostok²⁹. Although these exercises begin in one military district, they often spread to and/or include others, and all of Russia's Armed Forces, including the nuclear triad (IISS, 2018).

85. These exercises are designed to improve essential training and to test and increase Russia's ability to conduct joint operations and engage in large-scale combat with a technologically advanced adversary (Beznosiuk, 2016). In time, they have grown in size and sophistication, including elements such as strategic mobilisation and long-distance deployment, large-scale manoeuvre, national reserve force, civilian defence mobilisation, and industrial engagement (IISS, 2018; Johnson, 2018). Along with international deployments, such as the expeditionary campaign in Syria, these exercises have given the Russian authorities experience in operating in a wide range of conditions (IISS, 2018).

86. In 2013, Russia also began the systematic reintroduction of large-scale snap exercises, which occur without prior notification and use the notion of surprise to test troops' combat readiness, mobility, and deployability (IISS, 2018; Beznosiuk, 2016). Defence Minister Sergei Shoigu claimed that snap exercises train to a deployment benchmark of 65,000 troops over a distance of 3,000km within 72 hours (Johnson, 2015). The overarching goal of these exercises remains to improve interoperability of military units by training them to plan and conduct operations in a cohesive and effective manner (Beznosiuk, 2016). In addition, snap inspections are also used as a measure against corruption and deception (IISS, 2017).

87. Importantly, military exercises are often integrated with remaining elements of Russia's national security apparatus, thus testing command, control, and coordination across authorities and the military-civilian spectrum at federal, regional, and local levels. Furthermore, exercises have included coordination with the ministries of health, communications, and transport, as well as the Central Bank. This indicates that Russia is preparing its entire state system to cope with major crises, including the transition from peace, to high-intensity conventional fighting, to an escalation to nuclear deployment (IISS, 2018).

88. While the exercises are certainly designed to signal growing strength in this respect, they also demonstrate Moscow's consistent lack of transparency. For example, eschewing the provisions of the Vienna Document, Russia chronically underreports the actual number of participating forces and

centre; and, a centre overseeing everyday activities, integrating leadership and coordinating the activities of all defence and security structures (all ministries, agencies, departments, along with actors at federal, regional, and local levels, both military and civilian) (McDermott, 2014; IISS, 2019).

²⁹ West, Centre, Caucasus, and East in Russian.

has not allowed for proper observation of the exercises at times (Johnson, 2018). The size, scope, and frequency of the exercises (the strategic annual combined with the ‘snap’) can also be seen as an attempt to undermine Euro-Atlantic security by challenging perceptions of predictability and stability along the Alliance’s eastern flank. In addition to the kinds of skills being trained, Russia’s military interventions in Georgia in 2008 and in Ukraine in 2014 raise serious concern about Russia’s intentions behind these major force movements (Johnson, 2018). After all, a crucial element to Russia’s use of its armed forces in the illegal annexation of Crimea was the use of a proximate exercise to obfuscate Russia’s real intentions in the area.

C. PERSONNEL

89. In 2008, Russia’s force structure amounted to 1,890 large units, most of which were ‘skeleton-manned’ in peacetime. This meant that, in the event of a crisis, they would require several weeks to call up and train reservists to operate with minimal effectiveness on the battlefield (Dick, 2019). One of the main reforms therefore concerned the reduction to a total of 172 units, all meant to be fully manned and maintained in a state of permanent combat readiness in peacetime. As a consequence, there has been a large-scale reduction in the numbers of officers needed (Dick, 2019). Before the introduction of the 2008 reforms, there was an enlisted officer to personnel ratio of 3:1 in the Russian military, following which the number of officers was reduced from 355,000 to 150,000 (Braun, 2012). The overall strength of the Russian forces, including officers and conscripts, was decided to be cut to 1 million soldiers by 2013³⁰ (Braun, 2012).

90. Aside from increasing readiness and mobility, Russia’s intention was to achieve a more professional military, by recruiting and retaining personnel that can benefit from continuous training and that can operate the modern equipment being developed and deployed. Recruiting sufficient numbers of conscripts³¹, however, remains a challenge. In 2011, new combat brigades were manned at only 75%, and in 2013 the armed forces were overall only at 80% of planned strength (IISS, 2014)³².

91. In time, numbers rose due to various measures. A crackdown on corruption in the Military Commissariat responsible with conscription led to a substantial drop in exemptions granted on medical grounds (Dick, 2019). Recruitment of contract personnel was also boosted by improved pay, living, and service conditions, with an initial 2012 law tripling military salaries and raising military pensions by 60% (IISS, 2013; IISS, 2015). These sums were increased once more at the end of 2019, although it is estimated that military pay will remain lower than the national average (IISS, 2020).

92. Meanwhile, Russia’s operations in Crimea, coupled with an intense campaign of patriotism, boosted the Armed Force’s popularity and prestige (IISS, 2015). In 2017, Russia managed to form a non-commissioned officers (NCO) corps, leading to an increased level of professionalism in the armed forces (IISS, 2018). At the same time, even with increased pay and additional benefits, military service remains attractive mainly to those from economically disadvantaged and rural regions (IISS, 2020).

93. Between 2011 and 2017, there was an increase in personnel from around 700,000 to more than 900,000 (Kofman, 2018a). According to recent statistics, the proportion and overall numbers of

³⁰ 2017 marked the first theoretical increase in the size of the Russian Armed Forces since, mainly as a result of the return to divisions and armies, the re-establishment of which required personnel. A presidential decree therefore raised the limit on the total numbers of personnel from 1,000,000 (a ceiling which had not been reached) to 1,013,628 (IISS, 2018).

³¹ Conscripts are considered to be less effective than career personnel, seeing as they only serve 12 months of service, half of which are spent in training (Crane, Olikier, and Nichiporuk, 2019).

³² The problems stemmed from a rapidly aging population, which leads to an insufficient pool of potential recruits, but also a general lack of appeal of the armed forces as a career choice, as a result of issues such as the continued existence of the *dedovshchina*, the informal practice of initiation of conscripts (IISS, 2013).

conscripts is in decline, falling from 307,000 in 2016 to 260,500 in 2018. Still, conscripts represent a third of the armed forces and remain only marginally fit to fight in real combat operations (IISS, 2019). At the same time, the numbers of professional servicemen rose from 384,000 in 2018 to 393,800 in 2019, with the armed forces reportedly reaching a target strength of 95% in 2017 (IISS, 2019).

94. Overall, 126 BTGs comprised fully of contracted troops have been formed in the Ground Forces and Airborne Forces, while special forces, combined-arms units in Russia's peacekeeping forces, and submarine crews are entirely staffed by contract personnel (IISS, 2019). A target of 400,000 contracted servicemen was initially set to 2020, but then changed to 475,600 by 2025. There is therefore remaining ambiguity with regards to personnel targets (IISS, 2020). It is important to mention that extending the deadline to 2015, though, might also be related to Russia's attempts to increase the quality of its contracted personnel, with efforts underway to evaluate professional standards and undisclosed numbers already being fired on this basis. This follows on from the successful introduction of a new system of promotion of officers that emphasises merit and combat experience (McDermott, 2020).

VI. WHOLE OF GOVERNMENT APPROACH – RUSSIA'S CONCEPTION OF FUTURE WARFARE

95. As noted in the military doctrine and national security strategy, there are two essential categories of threat for Russia: advancing military technologies and the broad use of non-military political, economic, information measures in combination with the use (or the threat of use) of military force to pressure a state or government. A particular concern about advancing military technologies is the development and deployment of long-range, high-precision weapons that could overwhelm Russia's strategic deterrent. Advanced military technologies are also force multipliers for enemy mobile forces; which could jeopardise Russia's ability to dominate conflicts in its near abroad. The second category, however, has more to do with Russia's deep-seated fear of foreign manipulation of Russia's domestic stability as a means of undermining state and government stability. Russia's approach to modern conflict and warfare attempts to bridge both threats – while the above-described reforms seek to mitigate the threat from military technologies, Russia has devised a broader, whole-of-government approach to the latter. This approach involves the combination of various capabilities in a multi-dimensional and flexible campaign that targets all the perceived weaknesses of the adversary (Johnson, 2015).

96. Russia pursues its defence on three integrated levels – government, military, and national (Johnson, 2015) – and employs broad coordinated operations in the diplomatic, information, cyber, economic, and military domains in order to fulfil its strategic objectives (IISS, 2019). These can be applied sequentially or simultaneously, without an obvious delimitation between peace and war (Johnson, 2015). Russia's use of a broad range of non-military tools, or 'measures short of war', has grown in scope and scale in recent years in parallel to Russia's increasingly assertive foreign policy, but, at the same time, Russia considers that the effectiveness of a non-military campaign ultimately continues to rest, to a large extent, on the credibility of the potential use of military force. All such non-military measures are therefore backed by an increasingly capable military, with the armed forces retaining, as Gerasimov himself claimed, a "decisive role" (IISS, 2020).

Russia's Evolving Approach to Hybrid Warfare

97. Russia's non-military tools have garnered increasing attention since Russia's illegal annexation of Crimea in 2014. The key reason for this has been the challenge of Russia's combination of traditional and non-traditional tactics and means in its efforts to achieve its foreign policy goals, in what is termed *hybrid warfare*. To a degree, Russia's forces involved in the Crimea campaign highlighted the success of the first five years of Russia's focused modernisation programme: Russia's forces demonstrated their new abilities for rapid, coordinated deployment of forces (combining locally based naval infantry, special forces, and airborne troops); they incorporated sophisticated EW capabilities and information operations, as well as cyber operations

and effective strategic communications (IISS, 2015). Yet focusing only on the coordinated operation of Russia's armed forces belies the complexity of hybrid warfare; Russia's campaign to seize Crimea had many more elements that were not only difficult to understand at the moment of the operation, but also challenging to counter. For example, the IISS Military Balance notes that the Russian campaign in Crimea included; "the use of military and non-military tools in an integrated campaign designed to achieve surprise, seize the initiative and gain psychological as well as physical advantages utilising diplomatic means; sophisticated and rapid information, electronic and cyber operations; covert and occasionally overt military and intelligence action; and economic pressure" (IISS, 2015). Russia's use of hybrid warfare is meant to be inherently destabilizing for any competitor searching for the appropriate response.

98. The breadth and depth (as well as daring) of Russia's use of hybrid tactics has expanded, and seemingly escalated, in recent years to include; energy supplies, corruption, assassination (including outside its borders and by using military-grade prohibited nerve agents³³), disinformation and propaganda, the use of proxies and Private Military Companies (PMCs), and more. Russia's hybrid methods are geared towards the manipulation of adversaries while avoiding the use of military force (IISS, 2019) and especially staying below NATO's threshold of military response (Johnson, 2015). As noted below, Russia's use of PMC's is having a significant impact on the course of the Russian campaigns in Ukraine and Syria, as well as serving as a complicating variable in a growing number of global conflict hotspots from Libya to the Central African Republic. Russia's (dis)information operations have been increasingly entering into Allied domestic affairs; Russia's attempts to interfere in Allied and partner elections, for example, have been well documented (Tennis, 2020).

99. As the Defence and Security Committee's Special Report on NATO's essential salutary role during the COVID-19 pandemic highlights, Russia has been using hybrid tactics throughout the pandemic as an opportunity to spread disinformation in an attempt to sow confusion among Allied and partner populations about the origin of the virus, as well as the efficacy of western democratic governments' response to it. In addition, Russia has been attempting to use pandemic-related distraction to probe for soft spots via dangerous brinkmanship with Allied forces. The disinformation campaign in parallel to continued brinkmanship by Russian forces is directly in line with the above definition of hybrid warfare tactics.

Russia's Whole of Nation Approach to Defence and Security

100. Russia's developing approach to conflict has led to an understanding that the defence of the state and its interests are not a solely military matter, but one that required significant shifts in the country's security and defence landscape (IISS, 2019; IISS, 2020). A key element to this has been prioritising coordinated action across the government, military, and security structures in support of national defence (IISS, 2019). As discussed above, command and control has been streamlined and decision-making has become centralised. In 2013, the General Staff was empowered as the coordinating authority of all ministries and departments contributing to national defence, with the NCDC being its tool in this sense (Johnson, 2015). This whole-of-government coordination and cooperation is also evident in the national readiness exercises that combine all elements of the state in moving the country onto a war footing (IISS, 2020). According to Gerasimov, this has both adapted and led to further blurring of the lines between war and peace and the increased possibility of a rapid outbreak of conflict, with Russia's "time for reaction between the transition from political-diplomatic means to the employment of military forces" being "maximally reduced" (Johnson, 2015).

101. Additional measures include the control of the media, suppression of dissent, and the increasing militarisation of the society, as the mindset of the population (in terms of spiritual values,

³³ The attempted assassination of Sergei Skripal (former Russian military intelligence agent and then British spy) and his daughter Yulia Skripal in Salisbury, England, by poisoning with a Novichok nerve agent in March 2018 was attributed to Russia by the United Kingdom. The United Kingdom received the support of the Allies, with the Alliance expelling seven Russian diplomats from the Russian Mission to NATO in Brussels, and of the European Union, with the EU and member countries all expressing solidarity and support for the United Kingdom.

patriotism, belief in the heroic traditions and history of the Motherland, etc.) has come to be seen as a key vulnerability and main target of foreign influence (Johnson, 2015; IISS, 2019; IISS, 2020). The topic of patriotism has therefore become very prevalent in Russia's security and military ideology, being directly connected with Russia's national security and the preservation of the current political system and regime (Snegovaya, 2016).

102. As a result, in 2015, President Putin ordered the creation of a nationwide "Russian students' movement", with the aim of helping to "form the characters" of young people "based on the system of values that is intrinsic to Russian society" (Snegovaya, 2016). In 2016, President Vladimir Putin formed the "Young Army" (Yunarmia), a network of youth associations providing training in military tactics and history (Shuster, 2016). The development of the "youth patriotic movement" became the main priority in 2019. Yunarmia had a membership goal of 500,000 members by 9 May 2019, and of 1 million by 9 May 2020 (the 75th anniversary of the victory over Nazi Germany) (Hurska, 2019a). Moreover, all security- and defence-related Russian ministries and departments are now developing cadet branches, such as the Russian National Guard, the Ministry of Internal Affairs, the Federal Security Service, and the Ministry of Emergency Situations. Some cadets are trained in urban warfare, anti-protest training, and the control of public spaces (IISS, 2020), and they are expected to become a patriotic resilience instrument, to be used in case Russia faces a political or socio-economic crisis, as well as a pool of potential recruits for the armed forces (Hurska, 2019a; 2019b).

103. In 2018, the Ministry of Defence reinstated the Main Directorate for Military-Political Affairs, which key responsibilities are the management of propaganda and counterpropaganda, patriotic education, and psychological support for the armed forces. This, together with the above, suggests that Russia has increased its attention on confrontation in the information domain, both in the defensive and offensive realm (IISS, 2019)³⁴.

104. An important move in Russia's whole-of-government approach has also been the establishment, in 2016, of the National Guard (*Rosgvardia*), which consolidated Russia's interior troops and specialist forces, such as the riot police, with a remit ranging from managing civil disobedience and protests, to protecting strategic sites and addressing the potential challenge of well-armed insurgent forces (IISS, 2020). The *Rosgvardia* is under President Putin's direct control, and is headed by Viktor Zolotov, the former head of Putin's personal security service (Borshchevskaya, 2019).

VII. THE ROLE OF PRIVATE MILITARY CONTRACTORS – RUSSIA'S PROXY FOREIGN FIGHTING FORCES

105. While private military contractors are officially forbidden in Russia, the use of paramilitary groups has also extended outside of enhancing Russia's internal security and ensuring its combat preparedness. According to several analysts, Russian Private Military Companies (PMCs) have proven to be an effective tool in Ukraine, Syria, and across Africa, helping Russia to achieve its strategic objectives with plausible deniability (Dick, 2019; IISS, 2020).

106. The Wagner Group is the most visible Russia's semi-state private military companies. The group operates in Ukraine, Libya, Syria, Sudan, the Central African Republic and Venezuela. It is believed to be funded by the oligarch Yevgeny Prigozhin, a close associate of President Vladimir Putin. Prigozhin and his two main companies, Concord Management and Consulting and Concord Catering, have been on the US sanctions list following his links to the separatists in the eastern Ukraine. Although there have been other Russian PMCs operating in conflict zones such as the Tigr

³⁴ In 2017, Russia also formed the Information Operation Troops; although there is little available information regarding this group's specific activities, it is assumed that they conduct information and psychological operations in cyberspace (IISS, 2019).

Top-Rent Security, E.N.O.T. Corp, Cossacks, and Feraks, it has been argued the Wagner Group acts as a mercenary arm of the Russian Ministry of Defence (Kyzy, 2020)³⁵.

107. Although the Wagner Group is technically a private military contractor, it is heavily integrated into the Russian command structure (Rabin, 2019). However, this partnership indeed marks how geopolitics and private enterprises can serve a government's diplomatic pursuits. Yet, it gives the opportunity to Russia to use aggressive force to safeguard its interests and possibly exploit the resources in any arena the group may be operating, without bearing any legal responsibilities.

108. Analysts believe the Wagner Group receives technical support from the Russian Armed Forces, such as armoured vehicles, tanks, artillery, rocket launchers, apparently at no cost (Faulconbridge, 2018, Franklin 2020). The group is also reported to receive direct orders and skill trainings from Russia's military intelligence agency (GRU). Wagner Group commander, Dmitry Utkin, was a soldier in the Russian Spetsnaz (special forces) unit which took part in the invasion and annexation of Crimea, as well as the subsequent interference in Donetsk and Luhansk (Zakharov, 2016). Utkin also reportedly recruited fighters under the name of "Slav Corps" to be deployed as part of Russia's official 2015 military operation in Syria.

109. In Syria, Wagner mercenaries were contracted by Syria's state-owned General Petroleum Corp and have been fighting alongside the Syrian government, in order to recapture and secure the oil and gas fields taken by ISIS. By 2018 it was reported the group had around 2,500 mercenaries operating in the country (Peter, 2018). The Wagner Group has been carrying out military-related tasks, intelligence gathering, reconnaissance, protecting critical infrastructure alongside training the local personnel (Sukhankin, 2019).

110. The Wagner Group's presence in Syria was at the centre of international attention in February 2018, after the group, alongside other Assad regime-backed forces, crossed over the Euphrates River in an area designated under the deconflict agreement between Russia and the United States. The group's forces were attempting to retake an oil refinery near the city of Deir Ezzor (Borshchevskaya, 2019). When the column of fighters attacked a US-supported Kurdish outpost in the vicinity with advanced Russian weaponry, US Commanders were in direct contact with their Russian counterparts and urged them to halt the attack; to no avail (Gibbons-Neff, 2018; Borshchevskaya, 2019). As a result, US forces in the area were required to call in air strikes in self-defence; several hundred of the attacking fighters were killed as a result (Gibbons-Neff, 2018; Borshchevskaya, 2019).

111. Since 2017 M-Invest, another company linked to Yevgeny Prigozhin, has been engaged in the Sudan in a range of activities from securing mining operations to train, advise, and assist measures with the Sudanese Armed Forces. Analysts consider that the group's efforts there are also believed to have a two-fold purpose, in addition to supporting Sudanese President Omar al-Bashir's government; they also provide Russia an opportunity to access Red Sea, as well as protect Prigozhin's reportedly sizeable investments in the country.

112. The Central African Republic (CAR) became a focus for Russian arms sales on the African continent following UN exemption for Russia on the arms embargo to that country in December 2017 (World Politics Review, 2018). In CAR, Russian instructors have been offering combat training, investing in country's infrastructure and education facilities. In addition, the Wagner Group also has a documented presence in the country; the group is reportedly serving as President Faustin-Archange Touadera's personal security detail (Hauer, 2018). The rich resources of the CAR – diamonds, oil, gold, and uranium among them – also serve as a clear pull factor for the group.

113. In early 2019, the Wagner Group sent mercenaries to support the Libyan National Army (LNA), the forces under General Khalifa Haftar, fighting against the UN-sanctioned Government of National Accord. As General Haftar's forces took over a large percentage of Libya's oil producing regions,

³⁵ Analysts agree it is unconstitutional (articles 13.5 and 71) and, therefore, illegal for the Russian government to use private military companies (Borshchevskaya, 2019).

Russian interest in the group has grown. The Wagner Group's forces help secure the Libyan oil fields within the LNA's control and even fight alongside Haftar's forces, when necessary (Borshchevskaya, 2019). US Africa Command reported finding significant evidence that Russia has continued to use the Wagner group throughout 2020 to position equipment in the country to enable military operations in the country. The intelligence about Russia's continued activities in Libya demonstrates Russia's ongoing violation of UNSCR 1970, which prohibits the provisions of military personnel and/or matériel into the Libyan conflict (US DOD, 2020).

VIII. CONCLUSIONS FOR NATO PARLIAMENTARIANS

114. A March 2019 speech by General Valery Gerasimov, Chief of the General Staff³⁶, can give some insight into the likely future shape of Russia's next iteration of its military doctrine and national security strategy; particularly when it comes to threat perception, Russia's understanding of the international security environment, and the dynamics of future conflict.

115. In the speech, Gerasimov points directly to the United States and NATO as the sources of global instability and as growing threats to Russia (Massicot, 2019). Gerasimov also stressed that, while military force remains the deciding factor in conflict, the role of non-military means to achieve political and strategic objectives continues to grow in importance (Massicot, 2019). The speech also demonstrated a continued emphasis on modernisation and development, required to respond both to increased threats and to Russia's growing involvement in international political and military affairs, for which its intervention in Syria is considered to be a model (Johnson, 2019).

116. Indeed, the Syrian and Ukrainian testing lab for Russian military reforms has been very fruitful for Moscow's assessment of its military modernisation efforts. Russia has tested many of its new air, ground, and sea-launched missile systems, airframes, ground vehicles, command and control structures, as well as many other new upgrades to the Russian forces in the Syrian battlefields (Adamsky, 2018). Russia has also battle-tested a large amount of its more elite soldiers that may be part of any rapid reaction force in the future.

117. Russia's power to disrupt the existing global order is growing, and it is clear from Gerasimov's statements that Russia will continue to use its newfound power to reshape the international system to suit Russian interests (Johnson, 2019). Not only is this due to the relative effectiveness of Russia's military modernisation, but it is also due to Russia's strong political will to achieve this goal.

118. As Allies consider their own commitments to Defence Spending Pledge of 2014, the Russian challenge should drive leaders to overcome internal political differences about the prioritisation of threats and view the effort to invest at least 2 % GDP into their own defence institutions as a means of bolstering NATO's overall resilience. Investing at least 20% in new equipment will also go a long way to help NATO increase mobility, interoperability, and firepower. New force structure adaptation at the Alliance level, as well as among individual Allies, will push NATO forward and help it maintain its current lead in every military domain.

119. Further, Allies should consider their own efforts to engage all of their levels of national power to overcome persistent efforts to interfere in Allies' domestic affairs by external actors by such means as disinformation campaigns, leveraging corruption, or economic pressure. Russia's use of such levers of its own national power have a clear goal – to divide Allied consensus on the future of Euro-Atlantic security.

120. Each and every Ally can do their part to prepare for the complexity of the modern security environment and the myriad domains by which external actors can seek to harm them. They can also work more closely together to bring all Allies up to the level of being a strong contributor to

³⁶ The speech was given at the Russian Academy of Military Science and was assumed by many to contain references to Russia's evolving threat assessment, changing perception on the nature of warfare, and developing military strategy.

broader Allied security. This is not just an Article 3 of the Washington Treaty obligation of all Allies, who 'separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack' – it is also the only way forward for NATO to continue to prevail as the strongest and most effective political-military alliance in history.

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