

The Russian Anti-Access/Area Denial Security Issue over Kaliningrad and the Baltics

Capt Daniel Ince

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With the increase of Russian aggression in Ukraine in 2014 and the lessons learned that have stemmed from that conflict, North American Treaty Organization (NATO) leaders have become more concerned about a Russian incursion into the Baltic states of Latvia, Lithuania, and Estonia and the anti-access/area denial (A2/AD) capabilities that Russia could bring to that conflict. Shortly after Russia's incursion into Ukraine and its annexation of Crimea, tensions have increased in the Baltic region. Coupled with Russia's naval incursions into NATO-ally territorial waters, aggressive air maneuvers, and exercises, Russia has increased its military presence in the Baltics with "state-of-the-art missile systems" that are designed to prevent NATO air, ground, and naval forces from supporting the Latvian, Lithuanian, and Estonian militaries in a conflict with Russia.¹

The Baltic States are all inconveniently located on the western border of Russia and Belarus, an ally of Russia. Lithuania, Latvia, and Estonia each have "significant ethnic Russian minorities that receive Russian state-sponsored media almost exclusively." These Russian ethnic minorities could feel as though they are not represented enough in the Baltic States and they could decide to take matters into their own hands.² This is the exact scenario that happened in Ukraine in 2014 and continues with Russian involvement in eastern Ukraine to this day. In the early stages of the Russia-Ukraine conflict, Russian President Vladimir Putin "cited the need to protect the rights of Russian citizens and Russian speakers in Crimea and southeast Ukraine" as a pretext to invade Ukraine and to arm Russian ethnic minorities to combat the Ukrainian military.³ Also of strategic importance in the land corridor between Belarus and Kaliningrad

¹ Ann-Sofie Dahl, *Strategic Challenges in the Baltic Sea Region: Russia, Deterrence, and Reassurance* (Washington, D.C.: Georgetown University Press, 2018), 1.

² Ulrich Kunn, *Preventing Escalation in the Baltics: A NATO Playbook* (Washington, D.C.: Carnegie Endowment for International Peace, 2018), 9.

³ "Global Conflict Tracker: Conflict in Ukraine," Council on Foreign Relations, published 27 January 2021, accessed 27 January 2021, <https://www.cfr.org/global-conflict-tracker/conflict/conflict-ukraine>.

known as the Suwakli Gap. This gap is only 40 miles across and serves as a strategic chokepoint for NATO forces attempting to move from Poland into the Baltic States to defend against any Russian incursion. If Russia was able to take this land corridor, it would effectively cut off the Baltic States from any NATO support. Russian forces could then push west into the heart of NATO country and threaten Poland and Germany.⁴ To improve Russia's advantage against NATO forces in the event of a Baltic scenario, Russia established an extensive anti-access/area denial (A2/AD) infrastructure in Kaliningrad, Belarus, and western Russia. This paper will highlight the A2/AD capabilities of Russia's space, cyber, electronic, air, ground, and naval forces at each part of the integrated air defense system (IADS) network and pose recommendations of capabilities American leaders and planners could use to deter Russian aggression in the Baltics.

The first threats to American air operations to defend the Baltics and eastern NATO countries are Russia's space and cyber capabilities. Russia's space capabilities include imagery intelligence (IMINT) collection and signals intelligence (SIGINT) collection satellites. Russia's IMINT satellites are used to observe American military movements in Europe and in the continental United States (CONUS).⁵ Russia's SIGINT satellites have an assessed capability to intercept land-, air-, and sea-based communications as well as possibly "determine the direction of the transmitter from the satellite's position." Once this data is collected, "analysts on the ground can then combine the data from seven satellites to pinpoint the location of the receiver and to determine the type of the emitter."⁶ Russian cyber capabilities could also be used to

⁴ Janusz Bugajski, "The Suwalki Corridor," Center for European Policy Analysis, published 26 March 2018, accessed 27 January 2021, <https://cepa.org/the-suwalki-corridor/>.

⁵ "Russia and Imagery Intelligence," GlobalSecurity.org, accessed 31 January 2021, <https://www-globalsecurity.org.aufric.idm.oclc.org/space/world/russia/imint.htm>.

⁶ "Russia and Signals Intelligence," GlobalSecurity.org, accessed 31 January 2021, <https://www.globalsecurity.org/space/world/russia/sigint.htm>.

exfiltrate data for analysis.⁷ Russian IMINT, SIGINT, and cyber capabilities can provide indications and warnings to Russian leadership of an imminent attack on Russian facilities or adversary positions in the Baltics or Kaliningrad area.

The second threat American air forces will encounter on their way to defeat the Russians is Russia's radar network. One radar Russia has in its inventory is the 29B6 Konteiner early warning radar. It is a fixed system that provides coverage in a "180-degree arc" and "can reportedly detect and track objects...between 1,240 and 1,864 miles away."⁸ Russia has capable electronic warfare systems in and around Kaliningrad as well. These systems can cover most of the electromagnetic spectrum. One system to note is the *Krashuka-4*. This jammer is capable of jamming the radars of fighter, attack, intelligence, surveillance, and reconnaissance (ISR), and unmanned aerial vehicle (UAV) aircraft. This would essentially blind any American aircraft trying to conduct operations in or near Kaliningrad.⁹

Once American aircraft get near the eastern borders of NATO, they will have to contend with Russia's air capabilities. Russia's air forces in Kaliningrad and western Russia consists of "upgraded" Su-27 and advanced Su-35 fighter jets. The Su-35 is, without question, the more capable of the two aircraft.¹⁰ The Su-35 FLANKER E is marketed as a "'4++' generation" fighter jet that incorporates some "fifth-generation technologies." One such technology is the

⁷ Jody Westby, "Russia Has Carried Out 20-Years Of Cyber Attacks That Call For International Response," *Forbes*, published 20 December 2020, accessed 31 January 2021, <https://www.forbes.com/sites/jodywestby/2020/12/20/russia-has-carried-out-20-years-of-cyber-attacks-that-call-for-international-response/?sh=3ffd672d6605>.

⁸ Joseph Trevithick, "Russia Plans To Set Up Massive New Radar Array To Help 'Control' The Arctic Region," *The Warzone*, published 02 December 2019, accessed 31 January 2021, <https://www.thedrive.com/the-war-zone/31271/russia-plans-to-set-up-massive-new-radar-array-to-help-control-the-arctic-region#:~:text=Russia%20says%20it%20will%20set,cruise%20missiles%2C%20and%20hypersonic%20weapons.>

⁹ Roger N. McDermott, *Russia's Electronic Warfare Capabilities to 2025: Challenging NATO in the Electromagnetic Spectrum* (Tallinn, Estonia: International Centre for Defence and Security, 2017), 18.

¹⁰ Jeff Gilmour, "Kaliningrad and the Baltic Countries – A Russian Threat to NATO?," *Journal of Military and Strategic Studies* 19, no. 1 (2018): 5.

passive phased array radar used for long-range detection of airborne threats up to 250 miles away and prosecution of eight simultaneous engagements. This is especially advantageous if used to engage American bombers and escorting fighters. Another fifth-generation technology the Su-35 incorporates is the thrust-vectoring engines. These engines make the Su-35 extremely maneuverable in an engagement. The maximum range of the Su-35 is almost 2,240 miles, well within range to maintain air superiority over Poland and the Baltics and capable of threatening air assets over most of NATO. In 2007, Russian Colonel Nikolay Baranov mentioned he believed the “Su-35 can compete with [the] F-22 anywhere in every situation.”¹¹ The Su-27, while not as advanced as the Su-35, is still a threat to American military aircraft, especially bombers. The Su-27 is a 4th-generation fighter jet that is “highly maneuverable.” This jet was Russia’s answer to the F-15 and F-16. While likely cannon fodder to 5th-generation aircraft such as the F-22, the Su-27 will still be able to go toe-to-toe with most American fighter jets, as well as most NATO fighter jets.¹²

Russia’s surface-to-air missiles (SAMs) are also a threat to American military aircraft operating near the Baltics and Poland to thwart a Russian invasion of the Baltics. The largest threat to American military aircraft operating near Kaliningrad is the SA-21. This SAM system has a range of nearly 250 miles. This SAM’s range can cover half of Poland, part of Germany, all of Lithuania, and most of Latvia. This system is also mobile, which will complicate targeting

¹¹ “Su-35S Flanker-E,” GlobalSecurity.org, accessed 31 January 2021, <https://www.globalsecurity.org/military/world/russia/su-35s.htm>.

¹² “Su-27 FLANKER,” GlobalSecurity.org, accessed 31 January 2021, <https://www.globalsecurity.org/military/world/russia/su-27.htm>.

efforts to destroy the system. This system is designed to engage “aircraft [including fighters, bombers, ISR, UAVs, cruise missiles, and has a terminal ballistic missile defense capability.”¹³

On the seas, many of Russia’s naval vessels are equipped with SAMs meant to prevent American military aircraft from reaching their target. One such vessel of concern is the *Steregushchiy*-class corvette. This vessel is “equipped with advanced stealth, radar and electronic warfare systems, and has missile systems that can strike targets on land with precision,” as well as posing a threat to American military aircraft with its advanced naval SAM system. The Russian Baltic Sea Fleet is capable of striking NATO targets on land with cruise missiles, harassing NATO vessels supporting the NATO ground force, and deploying mines to prevent resupply to NATO ground forces.¹⁴

Russia’s surface-to-surface capabilities can threaten American vessels and American bases. One such system is the SS-26. This system has two variants associated with it. These include the Iskander-M with a range of approximately 310 miles and the Iskander-K which is capable of firing the SS-N-27 land-attack cruise missile (LACM) with a range of approximately 1,550 miles. The Iskander-M can strike any targets in most of Poland and Estonia and all of Lithuania and Latvia. The Iskander-K armed with the SS-N-27 LACM can threaten American air bases such as Ramstein Air Base in Germany, Aviano Air Base in Italy, and American air bases

¹³ “S-400 Triumph,” Missile Threat: CSIS Missile Defense Project, published 15 June 2018, accessed 02 February 2021, <https://missilethreat.csis.org/defsys/s-400-triumf/>.

¹⁴ Matthew Thomas, “Maritime Security Issues in the Baltic Sea Region,” Foreign Policy Research Institute, published 22 July 2020, accessed 02 February 2021, <https://www.fpri.org/article/2020/07/maritime-security-issues-in-the-baltic-sea-region/>.

in the United Kingdom. These systems will hamper resupply efforts which allow American military aircraft to continue their fight to defend and liberate the Baltic States.¹⁵

Given the amount of layers American pilots will have to fight through, how could the United States hope to counter Russia in the Baltics and Kaliningrad? One solution is to fast-track the production and deployment of the Air-launched Rapid Response Weapons (ARRW) hypersonic munition.¹⁶ Another solution is to fast-track the production of the B-21 Raider. The first B-21 “is expected to roll out in early 2022 and fly in the middle of that year.”¹⁷ Until that time, the B-2 Spirit, a 30-year old aircraft and already starting to show its age, will have to fill the role of the United States Air Force’s sole stealth bomber.¹⁸

Russia certainly poses a threat to our Baltic States allies. Russia’s large army can overrun the Baltic States quickly and Russia’s A2/AD capabilities pose a threat to American military aircraft supporting NATO forces trying to liberate the Baltic States. Russia’s space and cyber capabilities are capable of providing indications and warnings to impending attacks while its air and SAM forces are capable of defending Russian ground forces and strategic areas such as the Suwalki Corridor and Kaliningrad. The Russian Navy and surface-to-surface missiles are capable of harassing American resupply efforts to NATO forces and American air forces. Until
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¹⁵ Jeff Gilmour, “Kaliningrad and the Baltic Countries – A Russian Threat to NATO?,” *Journal of Military and Strategic Studies* 19, no. 1 (2018): 5.

¹⁶ Steven Stashwick, “US Air Force to Test New Hypersonic Missile,” *The Diplomat*, published 17 December 2020, accessed 02 February 2021, <https://thediplomat.com/2020/12/us-air-force-to-test-new-hypersonic-missile/#:~:text=The%20U.S.%20Navy%20and%20U.S.,to%20a%20designated%20impact%20point.&text=The%20United%20States%20Air%20Force,goes%20into%20production%20next%20year>.

¹⁷ John A. Tirpak, “Second B-21 Under Construction as Bomber Moves Toward First Flight,” *Air Force Magazine*, published 15 January 2021, accessed 02 February 2021, <https://www.airforcemag.com/second-b-21-under-construction-as-bomber-moves-toward-first-flight/>.

¹⁸ Omar Torres, “The B-2 at 30: Evolution of the Stealth Bomber,” *Northrop Grumman*, published 17 July 2019, accessed 02 February 2021, <https://news.northropgrumman.com/news/features/the-b-2-at-30-evolution-of-the-stealth-bomber>.

capabilities reach operational forces, the Baltic States will be under the mercy of Russian President Vladimir Putin or his successor.

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