



the Yasen-Class submarine and is producing them to replace current aging Soviet-era submarines. The introduction of more Yasen-Class submarines presents a very real challenge to US Naval authority in both the Northern Atlantic and Pacific oceans.

DISCUSSION

CURRENT SIZE OF THE RUSSIAN SUBMARINE FLEET

The Russian Navy is a historic navy, maintaining over three centuries of an “instrumental (role) in securing Russia’s maritime access to the world...”¹ Spanning Imperial, Soviet, and now Federated governments, for most of its history “the Russian Navy (has been) an advanced, globally capable force...”² The global presence of which the Russian Navy is capable has been attained through the use of its submarine fleet. Today, the Russian Navy boasts 300 ships, however, most of “the Soviet Navy’s submarines, surface ships, and auxiliaries had long outlived their usefulness but were retained to maintain impressive numbers.”³

The presence posed by the Russian Navy is not just that of a “paper tiger,” as one might assume from the performance of Russian ground forces in Ukraine. Currently, the Russian Navy is undergoing a significant modernization program in which “the (Russian) Navy should receive eight

nuclear-powered strategic submarines, 16 multirole submarines and 54 warships of various classes.”⁴ These new vessels will replace aged former-Soviet vestiges within the Russian Navy.

The Russian Navy has worked hard to strategically place its submarine fleet around the globe in areas that are vital to protecting Russian national interests, such as the Northern Sea, Atlantic Ocean, and the Pacific Ocean. The

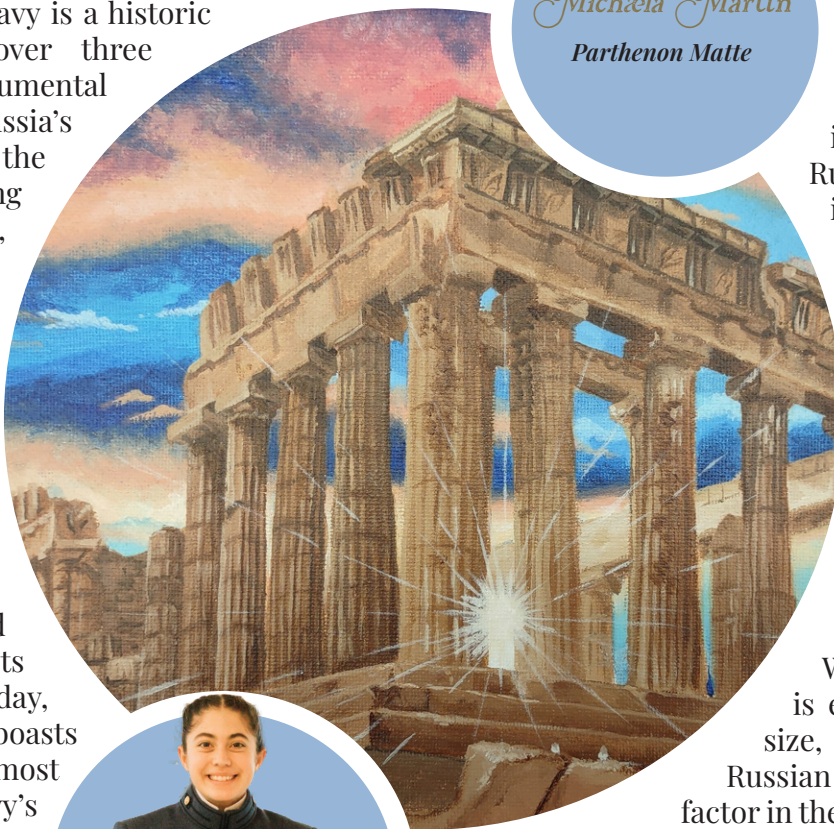
Russian Navy has sought well to balance the capabilities of its blue-water navy around the globe, including the availabilities of its submarines. The Russians have done this in order to “seek to gain prosperity, security, and influence from maritime commercial enterprise (through) a navy with global reach.”⁵

CAPABILITIES OF THE RUSSIAN SUBMARINE FLEET

While the Russian Navy is extremely proud of its size, the capabilities of the Russian Navy are the deciding factor in the true lethality posed by the Russian Navy towards the US and its allies. Of the many submarines currently in the Russian Navy’s possession, the “four ballistic missile submarines of the Borei class... (and) ...seven Delta III/IV submarines carrying Sineva missiles...”⁶ These submarines operate throughout Russia’s naval bases, to include the North, Black, Baltic, and Pacific fleets. The Borei-Class and Delta III/IV-Class submarines pose a genuine strategic threat to all American assets and allies due to their nuclear nature.

Despite the significant strategic threat, the capabilities of Russian Navy’s submarines pose real

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operational and tactical threats as well. The Oscar II-Class, Akula I, II, and II-Class, Victor III-Class, and Sierra I, II-Class submarines serve to “destroy U.S. Navy aircraft carriers with swarms of large, powerful cruise missiles.”⁷ Of these submarines, “Russia has both nuclear-powered and diesel electric-powered attack submarines.”⁸ Additionally, “Russia has 21 Kilo-class submarines and one Lada-class submarine...meant to operate closer to home...,” and “a comparatively large fleet of special mission submarines.”⁹⁻¹⁰ These special mission submarines are designed for deep-ocean exploration and engineering work, utilizing “two enormous ‘motherships’... for ferrying deep diving midget submarines.”¹¹

Overall, most of the submarines examined “date back to the Soviet Navy and the Cold War...”¹² Despite this, the Russian Navy has commissioned many new classes of submarines after the fall of the Soviet Union. Of these are, “The Lada class was built to replace the Kilos and...recently Russia has commissioned a pair of Yasen-class submarines, cruise missile submarines that could eventually replace the aging Oscar boats.”³ The Borei-Class, those capable of strategic nuclear strikes, is a new development following the fall of the USSR. The development of new ships, specifically submarines, to replace old Soviet ships is a significant initiative of the Russian Navy.

THE RUSSIAN NAVY’S MODERNIZATION PROGRAM

Following the fall of the Soviet Union, the Russian Federation adopted many of the ships within the Soviet fleet. The majority of these ships were already outdated in 1991, however “in the 2000s, the Russian government reincorporated the former Soviet naval industry as the state-owned United Shipbuilding Corporation (USC).”¹⁴ Now, “Russia’s submarine industry involves an expansive network of research, design, and production centers, which increasingly focused on export markets to stay afloat after the collapse of the Soviet Union.”¹⁵ With the groundwork laid, “Russia has embarked on multiple extensive projects to improve its submarine fleet.”¹⁶ following the collapse of the Soviet Union.

Most notable of these extensive projects was launched in the early 1990s, when

“Russia began construction on a Yasen-class submarine, the Severodvinsk (K-885),” ushering in the new age of Russian submarines. The Yasen-Class was followed by the Borei-class (NATO: Dolgorukiy), which are “set to replace the aging Typhoon-class, Kalmar-class (NATO: Delta III), and Delfin-class (NATO: Delta IV) submarines.”¹⁷⁻¹⁸ In addition to the Yasen-Class and Borei-Class submarines, the Russian Navy has announced the creation of the Belgorod-Class, Khabarovsk-Class, Lada-Class, and Improved Kilo-Class submarines. In all, Russia is working to build six new classes of submarine, each with a unique purpose. This is comparable with the two classes of submarines currently being developed by the US Navy.

The new submarines developed under the Russian Navy’s modernization program are equipped with a wide array of unique weapons and capabilities.



Grace Cooper
Antibes 2
&
Antibes 4

combinations,” the Kalibr, Onkis, and Zircon. These ships pose the greatest threat to US naval supremacy.²⁰

THREATS POSED BY THE YASEN-CLASS SUBMARINE

The Yasen-Class is the premier flag-ship of the Russian Navy’s modernization program. The development of the Yasen-Class submarine began in 1993 under Russia’s initial submarine improvement plan. The first Yasen-class submarine, the Severodvisnk (K-885), was commissioned in 2014, initiating the modernization process of Russia’s submarine fleet. An improved Yasen M-Class was launched in 2017, named the Kazan, and entered service in February of 2021. Currently, “A total of five Yasen M-class SSNs are in various stages of construction,” and are expected to enter into service in the coming years.²¹

The Kazan represents the new era of Russian submarine warfare, being “built with low magnetic steel to reduce its magnetic signature.”²² This unique construction allows for greater capabilities. Of these new capabilities, “The improved Yasen M-class SSN is reportedly quieter than the lead Yasen-class boat,” furthering the already prominent reputation of stealthiness held by the Yasen-Class.²³ Additionally, the Yasen M-Class is “fitted with eight vertical CM-346 complex (3P-14B) silos for submarine-launched cruise missiles...”²⁴ The missile capabilities of the Yasen M-Class are significant, with “10 torpedo tubes for firing the 3M-54 Kalibr supersonic cruise missile, the P-800 Onik over-the-horizon supersonic anti-ship missile, and an improved variant of the 533-millimeter Fizik-1 homing torpedo.”²⁵ The stealth capabilities and payload available to the Yasen M-Class submarine make it into a formidable enemy.

IMPLICATIONS FOR U.S. SECURITY INTERESTS

The size of the Russian Navy’s submarine fleet (58 submarines) makes for a deadly underwater adversary. Of this fleet are 11 ballistic missile submarines (SSBNs), 17 nuclear-powered attack submarines (SSNs), 9 nuclear-powered cruise missile submarines (SSGNs), and 21 diesel-electric attack submarines (SSKs). These submarines are spread



The Borei-Class submarine is equipped with 16 Bulva

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Ballistic Missiles (ICBMs), six such submarines are being developed. The Belgorod-Class and Khabarovsk-Class both serve as massive strategic submarines which are equipped with the new Poseidon (NATO: Canyon) strategic torpedo, “a 100-megaton nuclear warhead designed to create radioactive tsunamis.”¹⁹ The Yasen-Class and Improved Kilo-Class submarines are each equipped with the latest stealth technologies, “armed with three types of cruise missiles which can be loaded in



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throughout the Russian Navy's bases in the North, Black, Baltic, and Pacific seas. The positioning of these bases places Russian submarines in direct proximity to US naval assets, including the US western seaboard and Alaska.

The Russian Navy currently operates 11 nuclear capable submarines (SSBNs). These submarines are strategic in nature and are capable of hitting anywhere on the globe, including the US and its global assets. These submarines, known as "boomers", also give the Russian Navy a second-strike capability, causing serious consideration to US nuclear policy. Additionally, Russia's submarine fleet is designed with the US Navy in mind, building the Oscar II-Class, Akula I, II, and III-Class, Victor III-Class, and Sierra I, II-Class submarines "to destroy U.S. Navy aircraft carriers with swarms of large, powerful cruise missiles."²⁶ However, many of these submarines are old, and outdated remnants of the Soviet Navy, easily outmatched by the US Navy.

As the Russian Navy continues to modernize its submarine fleet, phasing out many of the old Soviet-Era submarines, the Navy will produce many new classes of highly advanced submarines. Currently, the Russian Navy is developing six new

classes of submarine through its modernization program, the Belgorod-Class, Khabarovsk-Class, Lada-Class, and Improved Kilo-Class, Borei-Class, and the Yasen-Class. The advancements made by the Russian Navy are vast compared to the two current class of submarine being developed by the US Navy.

The development of the Yasen-Class submarine served as the crowning achievement of the Russian Navy's modernization program. In competition with US and allied submarine capabilities, the Russian Navy will further develop Yasen-Class submarines, improving the stealth capabilities of the Yasen-Class. While "The Yasen M-class SSN is purportedly not equal to the United States Navy's new Virginia-class attack subs," the Yasen-Class is comparable with the Seawolf-Class (SSN).²⁷

While the US outpaces the Russian Navy in the scale and capabilities of their submarines, the Russian Navy's submarine modernization initiative places the Russian Navy on track to become a near-peer adversary to the US. Specifically, the "Yasen-Class" submarine is on-par with current US Fast Attack Submarines due to its stealth abilities making it the "flagship" submarine of the Russian Navy's modernization initiative. As they are greater utilized

in coming years, the “Yasen-Class” submarine poses a significant threat to US and allied naval assets.

Bibliography

- 1 The Office of Naval Intelligence. (2015, December). Nuclear resources. The Russian Navy – A Historic Transition. Retrieved December 8, 2022, from <https://nuke.fas.org/guide/russia/historic.pdf>
- 2 The Office of Naval Intelligence. (2015, December). Nuclear resources. The Russian Navy – A Historic Transition. Retrieved December 8, 2022, from <https://nuke.fas.org/guide/russia/historic.pdf>
- 3 The Office of Naval Intelligence. (2015, December). Nuclear resources. The Russian Navy – A Historic Transition. Retrieved December 8, 2022, from <https://nuke.fas.org/guide/russia/historic.pdf>
- 4 Sputnik International. (2022, October 20). Russian Navy to receive 24 subs, 54 warships by 2020. Sputnik International. Retrieved December 8, 2022, from <https://sputniknews.com/20130311/Russian-Navy-to-Receive-24-Subs-54-Warships-by-2020-179945052.html>
- 5 Thomassen, D. (2022, August 29). Russian blue-water navy is a pipe dream. U.S. Naval Institute. Retrieved December 9, 2022, from <https://www.usni.org/magazines/proceedings/2016/november/russian-blue-water-navy-pipe-dream>
- 6 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 7 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 8 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 9 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 10 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 11 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 12 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 13 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 14 Russia submarine capabilities. The Nuclear Threat Initiative. (2022, October 17). Retrieved December 10, 2022, from <https://www.nti.org/analysis/articles/russia-submarine-capabilities/>
- 15 Russia submarine capabilities. The Nuclear Threat Initiative. (2022, October 17). Retrieved December 10, 2022, from <https://www.nti.org/analysis/articles/russia-submarine-capabilities/>
- 16 Russia submarine capabilities. The Nuclear Threat Initiative. (2022, October 17). Retrieved December 10, 2022, from <https://www.nti.org/analysis/articles/russia-submarine-capabilities/>
- 17 Russia submarine capabilities. The Nuclear Threat Initiative. (2022, October 17). Retrieved December 10, 2022, from <https://www.nti.org/analysis/articles/russia-submarine-capabilities/>
- 18 Russia submarine capabilities. The Nuclear Threat Initiative. (2022, October 17). Retrieved December 10, 2022, from <https://www.nti.org/analysis/articles/russia-submarine-capabilities/>
- 19 Russia submarine capabilities. The Nuclear Threat Initiative. (2022, October 17). Retrieved December 10, 2022, from <https://www.nti.org/analysis/articles/russia-submarine-capabilities/>
- 20 Sutton, H. I. (2020, June 7). 6 types of submarines: The Russian Navy's extreme modernization. Forbes. Retrieved December 10, 2022, from <https://www.forbes.com/sites/hisutton/2020/06/03/6-types-of-submarine-the-russian-navys-extreme-modernization/?sh=76973ca87a6e>
- 21 Gady, F.-S. (2019, July 2). Russia signs contract for 2 yasen-M nuclear attack submarines. – The Diplomat. Retrieved December 10, 2022, from <https://thediplomat.com/2019/07/russia-signs-contract-for-2-yasen-m-nuclear-attack-submarines/>
- 22 Gady, F.-S. (2019, July 2). Russia signs contract for 2 yasen-M nuclear attack submarines. – The Diplomat. Retrieved December 10, 2022, from <https://thediplomat.com/2019/07/russia-signs-contract-for-2-yasen-m-nuclear-attack-submarines/>
- 23 Gady, F.-S. (2019, July 2). Russia signs contract for 2 yasen-M nuclear attack submarines. – The Diplomat. Retrieved December 10, 2022, from <https://thediplomat.com/2019/07/russia-signs-contract-for-2-yasen-m-nuclear-attack-submarines/>
- 24 Gady, F.-S. (2019, July 2). Russia signs contract for 2 yasen-M nuclear attack submarines. – The Diplomat. Retrieved December 10, 2022, from <https://thediplomat.com/2019/07/russia-signs-contract-for-2-yasen-m-nuclear-attack-submarines/>
- 25 Gady, F.-S. (2019, July 2). Russia signs contract for 2 yasen-M nuclear attack submarines. – The Diplomat. Retrieved December 10, 2022, from <https://thediplomat.com/2019/07/russia-signs-contract-for-2-yasen-m-nuclear-attack-submarines/>
- 26 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>
- 27 Mizokami, K. (2021, November 2). Here are all the submarines of the Russian Navy in one infographic. Popular Mechanics. Retrieved December 10, 2022, from <https://www.popularmechanics.com/military/navy-ships/a19863945/here-are-all-the-submarines-of-the-russian-navy-in-one-infographic/>