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# Moscow's Pacific Trident

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## The submarine arm of the Russian Pacific Fleet, early 2025 to 2030

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On 5 January 2025 the submarine element of the Red Banner Russian Pacific Fleet (RUSPAC) celebrated its 120th anniversary. Russia deployed its first submarine to the Pacific in 1904. A year later, Russia's first combat submarine formation was established in the Pacific. This made RUSPAC's Red Banner submarine force the oldest in the Russian navy.

Over the past decade, Russia has replenished RUSPAC's submarine arm—a process that has not been affected by Russia's war in Ukraine. In 2024 alone, three new boats were transferred to the Pacific maritime theatre. On 19 December 2024 the fifth Project 636.3 (improved Kilo class) RFS Ufa diesel-electric submarine (SSK) visited its homeport of Vladivostok after a year-long transit from the Baltic Sea.<sup>1</sup>

The arrival of the RFS Ufa was preceded by the transfers of the two newest nuclear-powered submarines to Russia's nuclear submarine base in Viliuchinsk on 25 September.<sup>2</sup> The transfers coincided with the strategic naval manoeuvres OKEAN-2024 (OCEAN-2024) which took place in mid-September of that year. The manoeuvres were the largest coordinated display of Russian naval power and submarine capabilities since 1985.



The Yasen M class RFS *Novosibirsk* SSGN during sea trials in Severodvinsk, Russia, August 2021

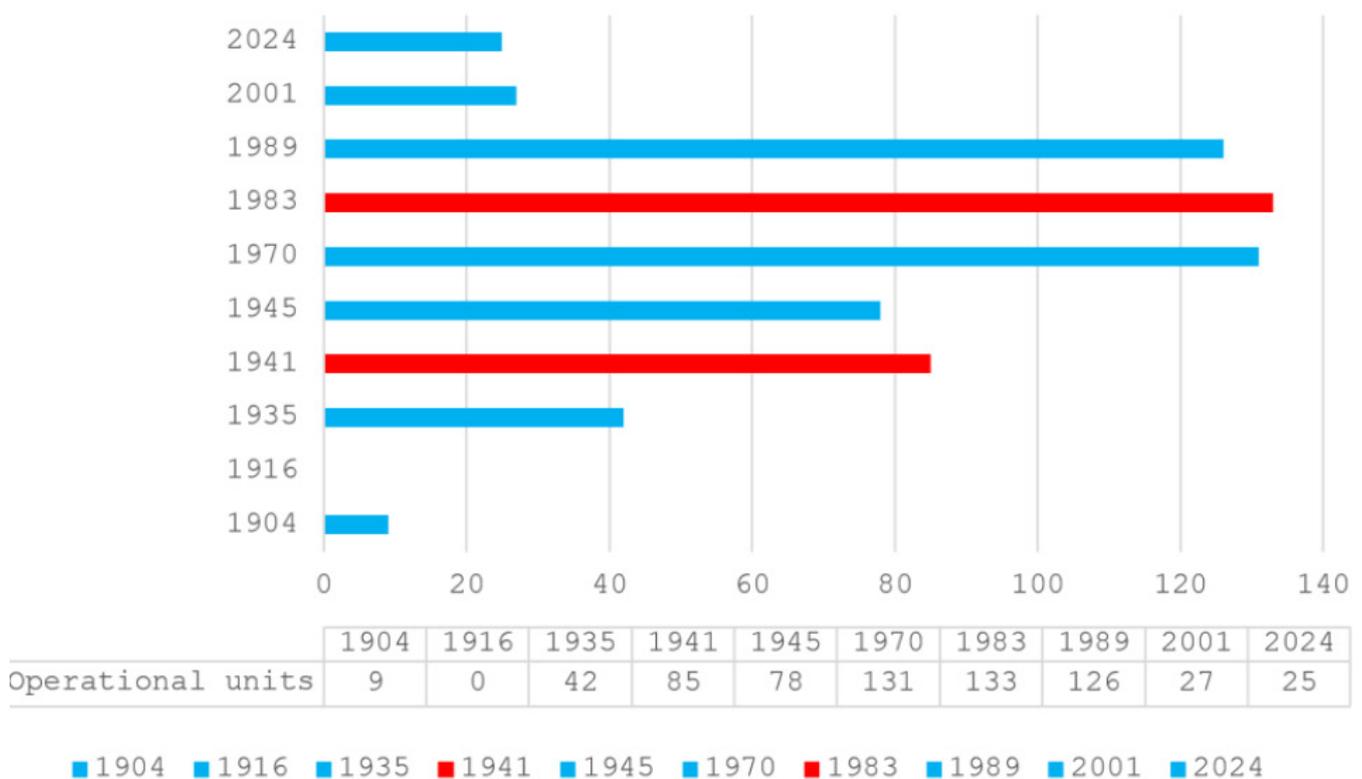
Some three weeks later, the Admiralteiskie Verfi shipyard in St Petersburg launched improved Kilo class RFS Yakutsk SSK, the final unit in a dedicated series of six boats, which have been built for RUSPAC.<sup>3</sup>

This paper reviews trends in RUSPAC force modernisation, operational activities and engagement. It concludes with a reflection on potential implications for the Royal Australian Navy (RAN) and allied navies in the Indo-Pacific. Moscow is increasingly concerned by Australia’s intent to acquire a long-range nuclear-powered submarine attack capability. Australia’s commitment to the US, UK security cooperative framework (AUKUS) is also of strategic concern for Moscow. These factors might push Russian naval command to reconsider its threat assessment of the RAN.

### Five phases of force evolution: 1904 to mid-2025

The 120 year-long evolution of the Russian submarine force in the Pacific has been marked by periods of strategic rise and dramatic decline. Since the creation of the first submarine unit back in 1904, the force went through five principal phases of development.<sup>4</sup>

**Chart 1. Evolution of the size of the submarine arm of the Russian Pacific Fleet, 1904 to late 2024**



### The birth phase (1904 to 1916)

This period was marked by the establishment of Russia’s submarine footprint in the region. By the end of the Russo-Japanese War, the Russians deployed a force of 13 submarines, which acted as additional deterrent against attacks on the principal far eastern seaport of Vladivostok.<sup>5</sup> However, by mid-1916, all operational units were transferred to Russia’s western fleets in support of the war effort in the First World War.<sup>6</sup>

## **The reanimation phase 1.0 (1935 to 1953)**

Development of the submarine arm was prioritised in this period, resulting in the creation of the largest submarine grouping in the Soviet Navy by 1941 (85 submarines, Chart 1). The Maritime Province and Kamchatka peninsula became two principal areas of basing for Soviet submarine forces. This also coincided with the formation of the Soviet Pacific Fleet (SOVPAC) in 1935.

## **The prime phase (1954 to 1988)**

During this period Soviet submarine capability grew in both number and in combat potential. From the 1960s, missile and multirole diesel-electric submarines were reinforced with nuclear-powered boats. These included nuclear-powered ballistic missile submarines (SSBNs), nuclear-powered submarines armed with cruise missiles (SSGNs) and attack variants (SSNs). By 1983 the Russian submarine force in the Pacific reached its historical peak (Chart 1). According to Semenov, between 1954 and the 1990s SOVPAC deployed 253 submarines (including 93 nuclear-powered).<sup>7</sup>

Since the prime phase, the fleet has been operating a mixed force of nuclear-powered and conventional (diesel-electric) submarines. The SSBN component of the force has been playing a pivotal role in the national sea-based retaliatory strategic nuclear force Pacific (SBRSNF-P).

## **The decline phase (1989 to 2012)**

The period of decline coincided with the collapse of the Soviet Union and rapid de-militarisation of the country. That resulted in decommissioning of operational units, including submarines. By late 2000, 74 nuclear-powered submarines were decommissioned from RUSPAC.<sup>8</sup>

Although lack of funding to support a large operational force was a major factor, there were other important considerations. Firstly, some boats were taken out of active service because of low combat value. Another factor was the need for Russia to comply with provisions of strategic arms reductions treaties.

Some modest force modernisation took place. Between 1990 and 1998, RUSPAC received six Oscar-II class SSGNs. The decommissioning of platforms also eased pressures on maintenance, which had been an ongoing logistical problem for the Soviet Navy (Appendix 1).

The combat readiness of the Russian submarine force continued to be a concern for the United States Navy (USN) and allied navies. In 1997, the then Chief of United States (US) naval intelligence, Rear Admiral Michael Cramer, reported to the US Senate Armed Services Committee that the Russian submarine force 'was not suffering at all' and that Russian submarines were being deployed more often than the surface fleet.<sup>9</sup>

## **The reanimation phase 2.0 (2013 to mid-2025)**

This phase has been marked by the transformation of what is currently known as the Submarine Forces Command of the Pacific Fleet (Kommandovanie Podvodnykh Sil Tikhookeanskogo Flota) or SFC-RUSPAC. Over the past 11 years, the SFC-RUSPAC has been undergoing a steady replenishment of its nuclear as well as conventional multirole components. Between 2013 and March 2025 the fleet received 13 new submarines.<sup>10</sup> The auxiliary surface support element of the force also received

several new additions (Table 1).

**Table 1: New additions to SFC-RUSPAC, 2013 to April 2025<sup>11</sup>**

Type of platform (number ordered)	Project, class, type of platform	Vessels/Ships	Operational (year)
<b>Strategic nuclear deterrent element</b>			
Nuclear-powered ballistic missile submarines	2 Project 955 Borey class SSBNs	RFS <i>Aleksandr Nevskiy</i> RFS <i>Vladimir Monomakh</i>	2013 2014
	3 Project 955 Borey A class SSBNs	RFS <i>Knyaz' Oleg</i> RFS <i>Generalissimus Suvorov</i> RFS <i>Imperator Aleksandr III</i>	2021 2022 2023
Special-purpose submarines	1 Project 09852 Converted Oscar II class SSAN	RFS <i>Belgorod</i>	2022
<b>Substrategic and tactical element</b>			
Multirole submarines	2 Yasen M-class SSGNs	RFS <i>Novosibirsk</i> RFS <i>Krasnoyarsk</i>	2021 2023
	5 Project 636.3 improved Kilo SSKs	RFS <i>Petropavlovsk-Kamchatskiy</i> RFS <i>Volkhov</i> RFS <i>Magadan</i> RFS <i>Ufa</i> RFS <i>Mozhaisk</i>	2019 2020 2021 2022 2023
<b>Surface auxiliary element</b>			
Major auxiliaries	1 Project 21180M diesel-electric icebreaker	RFS <i>Evpatiy Kolovrat</i>	2024
	1 Project 20180 ocean-going armaments transport	RFS <i>Akademik Kovalev</i>	2015
	1 Project 21300C ocean-going rescue ship	RFS <i>Igor Belousov</i>	2016

The most significant modernisation was the re-equipment of the 25th Red Banner submarine (strategic) division (see Chart 2) with the Borey/Borey A class platforms. Its completion, in late 2023, coincided with the 50th anniversary of the formation of the division.<sup>12</sup> This made the 25th submarine division the most advanced sea-based element of the national nuclear triad.

By mid-2025 the conventional element of the force will be replenished with six improved Kilo class SSKs, which will allow a prompt phasing out of its older variants (Project 877 Varshavyanka) without undermining current operational force levels.

Altogether, a replenishment of the SBRSNF-P and the conventional component of the submarine force, which parallels a qualitative upgrade of the nuclear-powered multirole element, marks a completion of the fifth phase of the evolution of the RUSPAC's submarine force.



The Oscar-II class SSGN

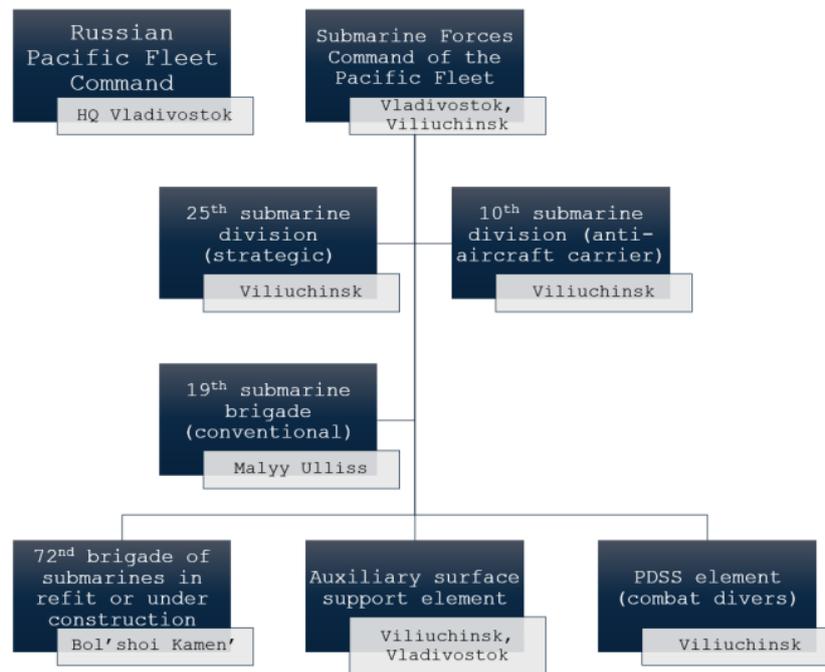
## Tasks and missions, order of battle and regional power ranking

While the exact tasks and missions of the Russian submarine forces are classified, publicly available information gives indications of what Russian submariners are likely to be trained to accomplish. Russian submarine forces were historically tasked with supporting sea denial and interdiction operations.

With the expansion of the Soviet Navy under Admiral Sergey Gorshkov and the globalisation of Soviet naval operations, the submarine arm assisted in maintaining naval control over strategically vital maritime sectors, among them areas of combat patrol of friendly and adversarial SSBNs, littoral seas and operations along critical SLOCs. With the deployment of nuclear weapons at sea, their range of missions expanded to strategic nuclear deterrence and strategic offensive and defensive missions.

Currently, the Russian submarine force continues to fulfil sea denial missions and act as Russia's sea-based retaliatory strategic nuclear force. Russia prioritises denying sea control to adversarial forces by dominating the sub-sea domain.<sup>13</sup>

Chart 2: SFC-RUSPAC organisational structure, April 2025<sup>14</sup>



Based on the analysis of the set of missions assigned to RUSPAC and types of operations assigned to Russian submarine forces, the following is likely to reflect the submarine force's tasks and missions in peacetime:

- strategic combat patrols and combat watch at points of basing as part of Russia's multidomain strategic nuclear deterrent activities in peacetime
- combat patrols in support of conventional maritime defence of the Russian Far East and the eastern sector of the Arctic Ocean
- covert forward presence in search-and-shadow undersea operations in areas of operational activity of the USN and allied navies
- intelligence gathering and special-purpose deep sea operations.

The wartime missions of SFC-RUSPAC would support principal tasks assigned to RUSPAC by the Russian General Staff:

- strategic tasks: defence of the Okhotsk SSBN bastion and strategic strike; limited anti-submarine warfare (ASW); operations against enemy SSBNs
- operational (theatre) tasks: operations against enemy strike battle groups, including carrier battle groups (CVBGs); ASW operations against adversarial multirole submarines
- tactical (local) tasks: local ASW; anti-sea lines of communication (SLOC) warfare; coastal defence; other operations.

In early 2025, SFC-RUSPAC's order of battle comprised 25 multirole nuclear-powered and conventional (diesel-electric) boats with a total approximate displacement of 212 000 tonnes (surfaced). Of the 25 submarines, six comprise the strategic (nuclear deterrent) element of the force. The remaining 19 can be classified as sub-strategic and tactical multirole platforms.<sup>15</sup>

Organisationally, the combat element of the force comprised two nuclear submarine divisions (diviziya) and one conventional submarine brigade (bde). Both nuclear submarine divisions are based

in Viliuchinsk (Kamchatka peninsula), while the conventional 19th submarine bde is homeported in the Malyy Ulliss Bay (Vladivostok).<sup>16</sup> The logistical element is supported by one bde (72nd), detachments of surface support ships (munitions transports, submarine rescuers, tugs and other) and a special force combat support (PDSS) element.

PDSS, which stands for Protivodiversionnyye Sily i Sredstva (counter sabotage forces and means), are navalised special forces units assigned to each of Russia's fleets with missions to protect ships at naval bases and while on deployment from underwater attacks carried out by adversarial light forces.<sup>17</sup> Additionally, PDSS combat divers could also undertake offensive missions behind enemy lines, thus positioning them somewhere between the RAN's clearance divers and the USN's SEAL teams.

Given current force levels, the Russian submarine force in the Pacific is likely to focus on the following combat tasks, which may adapt to different force disposition and employment in times of overt crisis and war:

- strategic combat patrols combined with combat watch at points of basing as part of Russia's multidomain strategic nuclear deterrent operations in wartime
- sea-based strategic nuclear strikes
- sub-strategic naval or multidomain operations against the shore (long-range conventional missile strikes)
- anti-aircraft carrier operations
- strategic ASW/hunter-killer undersea operations
- sea denial operations, including offensive and defensive mine laying
- maritime interdiction and anti-SLOC operations
- intelligence gathering and special operations.

Currently, SFC-RUSPAC would consider the USN, the Japan Maritime Self-Defense Force and the Republic of Korea's navy as principal rival naval forces in the Pacific maritime theatre, and consequently factor them into its operational planning.

In terms of its regional power ranking, two principal factors must be taken into account: the size of the Russian submarine force in the Pacific (analysed above) and its combat value. In terms of the latter, the following factors need to be considered. The eventual retirement of the last operational Delta-III class RFS Ryazan' SSBN in late 2023 made RUSPAC's SSBN force the most modern in the RFN. In late 2024 the combined single salvo launch of the five Pacific Boreys with 80 submarine-launched ballistic missiles (SLBM) with multiple independently targetable re-entry vehicles capable of carrying 480 (six per SLBM) to 800 (10 per SLBM) individual guidance warheads of 100 to 150 kilotonnes each. RUSPAC's stand-alone sea-based strategic nuclear strike potential places it second after the USN SSBN force assigned to the Pacific and ahead of the People's Liberation Army Navy (PLAN).<sup>18</sup>

As part of expanding its sea-based strategic nuclear deterrent, Russia's Ministry of Defence (MoD) implemented the fielding of what it refers to as an ocean-going multipurpose system (oceanskaya mnogotselevaya sistema), comprising converted nuclear-powered submarines and nuclear-powered deep-depth autonomous strike systems. The practical expression of this in the Pacific was the 2022 deployment of the first nuclear-powered carrier of the 2M39 Poseidon strategic nuclear torpedo system, the RFS Belgorod.[19] Although designed as a special mission submarine, the RFS Belgorod plays a unique role in Russia's strategic nuclear deterrent operations in the Pacific maritime theatre.



The Kilo class RFS *Petropavlovsk-Kamchatskiy* SSK in Vladivostok, 2022

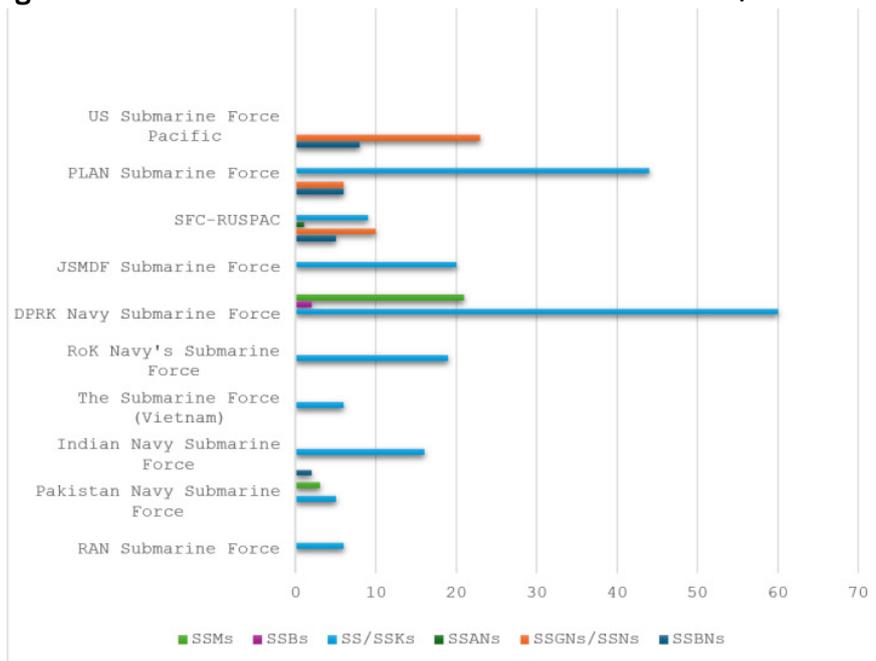
The multirole component has also been upgraded. A new line of SSKs (Project 636.3) is capable of firing 3M14 Kalibr-PL (SS-N-30A) submarine-launched cruise missiles (SLCMs) via torpedo tubes (Appendix 2), which give RUSPAC an additional undersea long-range strike capability. Additionally, a select number of third-generation nuclear-powered platforms (RFS Irkutsk, RFS Chelyabinsk and RFS Samara [Appendix 2]) are undergoing a major overhaul and refit. This includes the installation of enhanced sonar detection and SLCM on-board strike suit comprising 3M55 Oniks (SS-N-26 Strobile), 3M14 Kalibr-NK/PL (SS-N-30A) and 3M22 Tsirkon (SS-N-33) hypersonic systems—including increased payloads.

In terms of regional power ranking, the size and combined combat value of SSGNs, SSNs and SSKs makes the multirole component of the RUSPAC's submarine force the third most potent after the US Pacific and PLAN's submarine forces. Overall, the RUSPAC's submarine arm could be ranked third most potent among larger submarine forces that operate in the Indo-Pacific strategic maritime theatre (Chart 3).

### **Operational and exercise activity**

Although RUSPAC has the largest area of responsibility assigned to any of Russia's four fleets, the current size of SFC-RUSPAC would make it almost impossible to sustain operations across the entire area of responsibility. More realistically, they would focus on priority geographical areas, which are linked to their tasks and missions.

**Chart 3: Comparing submarine force levels of select Indo-Pacific navies, late 2024<sup>20</sup>**



RUSPAC's SSBNs' principal area of patrol remains the Sea of Okhotsk, which the Russian military turned into a protected bastion (SSBN bastion) which would allow it to engage in anti-access/area denial (A2/AD) operations in crisis and wartime. An analysis of open-source data over the past 10 years reveals that RUSPAC tends to deploy one SSBN on combat patrol to a protected area at any given time, which lasts between 60 and 90 days. Simultaneously, strategic submarines at the home base continue their combat duties maintaining full readiness to execute SLBM launch upon receipt of an authenticated executive order while moored at a pier (*boyevoe dezhurstvo*).

The Russian SSBN force in the Pacific regularly engages in SLBM launches, though most of these tests are carried out during state sea trials in the country's north prior to commissioning new boats. Contrary to their counterparts assigned to the Russian Northern Fleet (RUSNOR), RUSPAC's SSBNs do not engage in regular test firings of the Bulava SLBM from their operational area in the Sea of Okhotsk. By late 2024, the only two confirmed Bulava SLBM launches from RUSPAC's operating area were carried out in December 2020 and in October 2024 (Appendix 3, Table 3). The reason for this was the unpreparedness of Russia's missile testing range, Chizha, in the country's north to accommodate a new line of Russia's SLBMs.<sup>21</sup> The successful firing of the Bulava SLBM on 29 October 2024 might suggest that the problem has been addressed.<sup>22</sup> Otherwise, RUSPAC SSBN crews would continue to participate in SLBM test firing exercises carried out by the RUSNOR towards the Kura missile testing range in Kamchatka.<sup>23</sup>

In the view of Russia's senior naval commanders, SFC-RUSPAC should have half of its SSBN force at sea committed to combat patrols, similar to the USN SSBN force operational patterns in the Pacific in the first decade of the 21st century.<sup>24</sup> These estimates are also supported by the fact that geographically, Russian SSBNs operating in the Sea of Okhotsk are in shorter proximity and direct firing range to their primary strategic target—the continental US.<sup>25</sup> The current state of strategic confrontation with the west, combined with the SSBN force modernisation, will see increases in the frequency of Russia's SSBN deployments in the Pacific maritime theatre.

Russia's multirole submarines are responsible for supporting operations in the country's littoral

missions (which are normally assigned to SSKs), as well as out-of-area targeted deployments, which can last between 60 to 90 days on average.<sup>26</sup> Traditionally, operations of Russia's multirole submarines include maritime sectors of interest in the western Pacific and off the western coast of the US. They are also likely to engage in intelligence gathering and surveillance operations of the activities of the USN and allied navies, particularly during their activities in the western and northwestern Pacific, including exercises. RUSPAC's Oscars periodically shadow operations of the USN's CVBGs. Although, no public information is available about Russia's submarine deployments in recent years, an analysis of patterns of forward deployments in the 1990s allows a better understanding of Russian submarine out-of-area operations in the Pacific (Table 2).

The anticipated arrival of more Yasen'-Ms to the Pacific may result in regularised operations of Russian submarines in the vicinity of the US eastern coast. Back in late March 2023, US General Glen VanHerck, Commander NORTHCOM, expressed his concerns posed by Yasen's operations in the Pacific:

[The risk is] absolutely increasing.... Now not only the Atlantic, but we also have them in the Pacific and it's just a matter of time—probably a year or two—before that's a persistent threat, 24 hours a day. ... That impact has reduced decision space for a national senior leader in a time of crisis.<sup>27</sup>

**Table 2: Reported Russian submarine out-of-area operations in the Pacific maritime theatre, 1994 to 2000<sup>28</sup>**

Month, year	Submarine type	Areas of operations	Description of activity
July-August 1994	RFS Chelyabinsk	Unidentified areas of the Pacific	Out-of-area deployment
September-November 1995	Unidentified Oscar II class	Western and central Pacific	Shadowing operations of the USS Independence and USS Abraham Lincoln CVBG
December 1995	Unidentified Akula class	Northwestern Pacific	Monitoring Trident class SSBNs at their home base at Bangor
July 1997	RFS Chelyabinsk	Off the US West Coast	Shadowing USN carriers
September 1997	Unidentified Oscar II class	Northwestern Pacific	Shadowing the deployment of the USS Constellation CVBG
Second half of 1997	B-187	East China and South China Seas, Singapore and Malacca straits	Exploratory tour of duty of Southeast Asia; partaking in Thai-97 and Lima-97 international defence expos

1999	RFS Omsk	In international waters off Hawaii and off San Diego	Shadowing the deployment of the USS John C. Stennis CVBG and the USS Essex
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Kilos of the 19th submarine bde are largely responsible for operations in the seas of Japan and Okhotsk as well as along the Kuril Island chain.<sup>29</sup> An average deployment to one of the above areas lasts between 30 to 45 days, though some occasional missions could well exceed that operational pattern.<sup>30</sup> For example, in May 2024 RUSPAC’s official newspaper *Boyevaya Vakhta* [Combat Watch] reported that the RFS Komsomol’sk-na-Amure returned to its homebase in Malyy Ulliss after a combined six months’ deployment (Table 4).<sup>31</sup> In early 2024, one of the Improved Kilos was operationally assigned to Kamchatka in support of reanimating systematic underwater escort operations of Russian SSBNs on route to and from patrol areas.<sup>32</sup> Russian SSKs operating from Kamchatka may also be tasked with interdiction missions along the Kurils.

Over the past four years, the northern Pacific and the eastern sector of the Arctic Ocean have also been becoming important areas of SFC-RUSPAC’s operations. In the first half of 2022 (Table 3), the RFN carried out special exercises involving RUSPAC’s Oscars. The declared aim of the exercise was to test the Oscars’ capacity to engage in sea denial operations to deter adversarial forces from entering the Arctic maritime theatre.<sup>33</sup> The strategic end is the multilayered maritime protection and defence of Russia’s northern sea route. This is a strategically valuable maritime transit route for Russia’s natural resources to Asian clients against the backdrop of the international sanction regime. Russian naval command also trialled improved Kilos in the same sector, potentially considering their use should a permanent SSK force return to Kamchatka.

Additionally, the Pacific Kilos occasionally support Russian naval operations in the Mediterranean. These missions take place during theatre-to-threat transits via the so-called southern route (via the Indian and Pacific Oceans). For example, the RFS Ufa was assigned to Russia’s operational Mediterranean squadron for most of 2024,<sup>34</sup> also participating in episodes of the OKEAN-2024 strategic manoeuvres (Table 3). According to the commander of the 19th submarine bde Captain 1st Rank Evgeniy Limonov, submarines of his combat formation carried out a total of seven combat patrols and tours of duty in 2024.<sup>35</sup>

**Table 3: SFC-RUSPAC’s reported most significant operational and exercise activity, 2020 to 30 April 2025<sup>36</sup>**

Date/Month	Type of activity	Area(s)	Forces involved
<b>2025</b>			
20 April	Firing of the Kalibr-PL against a land-based target	Sea of Okhotsk	RFS Krasnoyarsk
24 March	Firing of two Kalibr-PL against a land-based target and a maritime target	Sea of Japan	RFS Ufa

2024			
1 October—19 December	The second stage of the second [delayed] post-Cold War transit of submarines via the 'southern route'	The Red Sea, Indian and Pacific Oceans	RFS Ufa with its escort
24 November	PASSEX joint exercise with the Royal Malaysian Navy	South China Sea	RFS Ufa and one auxiliary
29 October	RUSPAC's second firing of the Bulava SLBM	Sea of Okhotsk	RFS Knyaz' Oleg (1 SLBM was fired)
16 December 2023—29 September	Special deterrent operations; regular exercise activity	Mediterranean	RFS Ufa
10—16 September	OKEAN—2024 strategic manoeuvres		
SFC-Pacific exercise tasking: strategic nuclear deterrent ops, theatre-to-theatre manoeuvring; SLCM strikes, supporting ASW exercises	Arctic, Pacific, Atlantic and Indian Oceans, Baltic and Mediterranean Seas	Over 400 warships and auxiliaries, 125 aircraft, over 90 000 personnel (three fleets, the Caspian flotilla and the Mediterranean squadron)	
SFC-Pacific: RFS Imperator Aleksandr III, RFS Krasnoyarsk, RFS Omsk, RFS Petropavlovsk-Kamchatskiy, RFS Ufa, unidentified Kilo; unidentified units of the 25th and 10th submarine divisions			
5—7 August	Special combined exercise with surface elements of the fleet (torpedo attack against a convoy; ASW training)	Bay of Peter the Great	RFS Komsomol'sk-na-Amure; 4 surface combatants
18—28 June	RUSPAC's two-side large scale exercises	Seas of Japan and Okhotsk, northwestern Pacific	About 40 warships and auxiliaries (including submarines), some 20 PFNA aircraft

21 March	Firing of the Kalibr-PL against a land-based target	Sea of Japan	RFS Volkhov
<b>2023</b>			
1—16 December	First stage of the second transit of submarines via the 'southern sea route'	The Baltic Sea, the Atlantic Ocean, Mediterranean Sea	RFS Ufa and its escorts
5 November	Test firing of the Bulava SLBM	White Sea	RFS Imperator Aleksandr III (1 SLBM was fired)
14—20 April	The fleet's wide strategic snap check-up	Bering Sea and seas of Japan and Okhotsk	167 warships (12 submarines) and auxiliaries; 89 aircraft (PFNA and the 326th bomber div); naval infantry; over 25 000 personnel
<b>2022</b>			
24 November	Firing of multiple Kalibr-PL	Sea of Japan	RFS Magadan
3 November	Test firing of the Bulava SLBM	White Sea	RFS Generalissimus Suvorov (1 SLBM was fired)
September	The Umka strategic nuclear exercise	Eastern Arctic Ocean; Chukchi Sea	RFS Omsk and RFS Novosibirsk SSGNs RFS Magadan; bastion SSMs
August—September	The first post-Cold War transit of a conventional submarine via the 'northern route'	Arctic Ocean	RFS Magadan
3—10 June	Interdiction exercise in forward areas (followed by combat service by a submarine strike group)	Western Pacific Ocean; east China and the Philippine seas	RFS Omsk, RFS Tomsk SSGNs and RFS Kuzbass SSN as part of the combined task force (over 40 warships and auxiliaries, some 20 PFNA aircraft)
January—June	Defence of the northern Sea Route	Eastern Arctic Ocean	Oscar-II class

<b>2021</b>			
21 December	RUSPAC's first firing of the Kalibr-PL	Sea of Japan	RFS Petropavlovsk-Kamchatskiy and RFS Volkhov
November	Snap check-up of the 25th and 10th nuclear submarine divisions	Northwestern Pacific	Borey/Borey As, Oscar IIs
21 October	Test firing of the Bulava SLBM	White Sea	RFS Knyaz' Oleg (1 SLBM was fired)
August-November	The first post-Cold War transit of submarines via the 'southern route'	The Atlantic Ocean, Mediterranean Sea, Indian and Pacific Oceans (107 days at sea)	RFS Petropavlovsk-Kamchatskiy and RFS Volkhov, Project 20385 RFS Gremyashchiy FFH
Late September	Combined missile firing exercise	Sea of Okhotsk	RFS Omsk and Moskva-class RFS Varyag CG; 12 warships and auxiliaries; PFNA aircraft
<b>2020</b>			
12 December	RUSPAC's first firing of the Bulava SLBM	Sea of Okhotsk	RFS Vladimir Monomakh (4 SLBMs were fired)
28 August	Combined missile firing exercise, part of the Ocean Shield 2020 naval manoeuvres (the Pacific phase was held from 24 to 31 August)	Bering Sea	RFS Omsk and Moskva class RFS Varyag CG; a total of 15 warships and auxiliaries; PFNA aircraft; 400 items of heavy equipment; 3000 personnel

SFC-RUSPAC is also involved in most major exercises as well as in special training activities with other elements of the fleet such as ASW and joint strike. According to official data, in 2023 RUSPAC submarines carried out no less than 40 live-firing exercises, ranging from SLCM strikes to torpedo firings and others.<sup>37</sup>

One of the ways to assess the state of combat readiness of RFC-Pacific is by evaluating its elements in the Cup of the Supreme Chief of the RFN's annual competition. Normally, seven of 30 to 40 award categories are dedicated to measuring tactical mastery and overall combat readiness of submarine forces. An analysis of publicly disclosed data shows a steady performance of RFC-RUSPAC's elements in some categories such as cruise missile and torpedo attacks and undersea mine laying. Crews of RFS Knyaz Oleg, RFS Komsomol'sk-na-Amure, RFS Kuzbass, RFS Novosibirsk, RFS Tomsk and RFS Vladimir Monomakh could be identified as best prepared based on their steady performance in recent years (Appendix 3).<sup>38</sup> However, in November 2024 the Military Council (voenny sovet) of RUSPAC identified the crews of RFS Tver' and RFS Volkhov as best tactically upskilled in the SFC-

RUSPAC for the 2024 training year,<sup>39</sup> hence potentially suggesting improvements in operational and combat readiness of the crews of other boats. The fact that submariners of the 19th bde won three awards, part of the 2024 Cup indicates high levels of combat training and operational readiness among the Pacific Kilo force.<sup>40</sup>

Since all Russian submarine crews are now staffed with contract/professional service personnel, the level of professional readiness of crews is no longer dependent on change patterns in the draft cycle.<sup>41</sup>

Another indicator of high levels of combat readiness in SFC-RUSPAC was the award of the Order of Nakhimov to the 25th submarine division.<sup>42</sup> During his speech, Admiral Aleksandr Alekseyevich Moiseev emphasised ‘the highest level of professionalism’ of RUSPAC’s submariners, including in accomplishing operational tasks, maintaining highest levels of combat readiness as well as transiting from older-generation boats to the Boreys.<sup>43</sup>

The fifth phase (reanimation phase 2.0) has marked a steady increase in operational tempo of submarine deployments, including total days at sea. According to then the Supreme Chief of the RFN Admiral Vladimir Korolev, by 2018 Russian submarines spent a combined total of 3366 days at sea, compared with just 1105 days in 2013.<sup>44</sup> In March 2023, the then Supreme Chief of the RFN Admiral Nikolai Evmenov (a former nuclear submariner) revealed that every Russian submariner was spending about 100 days at sea,<sup>45</sup> which was equal to up to two deployments at sea. According to open-source information, back in 2018 a standard submarine deployment at sea was between one and a half to two months.<sup>46</sup>

More recently, the deployment pattern of Russian submarines increased to two to three months or even more at times if compared to the pre-Russia-Ukraine war levels. That was particularly applicable to most combat ready assets and best trained crews. For example, in late 2023, in an interview on the Russian MoD TV channel Zvezda, commanding officer (CO) of the RFS Tomsk noted that his boat had spent about two months at the base in between deployments that year.<sup>47</sup> In mid-September 2024, the official newspaper of Russia’s MoD Krasnaya Zvezda (Red Star) reported the increased deployment pattern of the Boreys assigned to the 25th submarine division.<sup>48</sup>

**Table 4: SFC-RUSPAC’s reported submarine returns to home bases after operational deployments, January—December 2024<sup>49</sup>**

Day and month of reporting	Submarine	Declared time of deployment
<b>2025</b>		
29 April	RFS Magadan	Over 4 months
21 April	RFS Volkhov	About 40 day
<b>2024</b>		
19 December	RFS Ufa	Over one year*
23 September	RFS Magadan	47 days
11 September	RFS Generalissimus Suvorov	Over 70 days
23 August	RFS Volkhov	44 days

11 June	RFS Petropavlovsk-Kamchatskiy	Over 30 days
20 May	RFS Tomsk	60 days
14 May	RFS Komsomol'sk-na-Amure	6 months
11 March	RFS Knyaz' Oleg	undeclared

The size of forces deployed at sea at any given time has also increased, if compared with pre-Russia-Ukraine war levels. For example, in late March 2022 the Red Star reported that five SSKs of the 19th bde were on combat deployment in the seas of Japan, Okhotsk and parts of the Pacific.<sup>50</sup> In July 2022, it was reported that three nuclear-powered submarines (RFS Omsk, RFS Tomsk and RFS Kuzbass) returned to Viliuchinsk after a three-month out-of-area deployment in the Pacific.<sup>51</sup> Some of these deployments were part of the Sderzhivanie [Coercion] exercise,<sup>52</sup> which aimed at containing adversarial naval forces from undertaking any action against Russia in the early stages of the war with Ukraine. During the 2023 strategic snap check-up, five nuclear-powered submarines, including two SSBNs, were deployed to sea in a single call,<sup>53</sup> showcasing high levels of operational readiness. All operational submarines are normally assigned with two changeable crews, which allows personnel rotation and supports high tempo operational patterns. While at sea, Russian submariners undertake 24/7 duties on the principle of two watches a day. Each watch comprises three combat shifts of four hours each.<sup>54</sup> Contrary to most western navies, the RFN continues its old conservative practice of allowing only males to serve on board major warships and submarines. Given the strong conservative traditionalism of the service, it is unlikely to see female crew members on board Russian submarines in the foreseeable future.



Borey class SSBN off Viliuchinsk, Kamchatka

## Maintenance and support shore infrastructure

As noted earlier, currently SFC-RUSPAC relies on two principal points of basing: Viliuchinsk (also previously known as Petropavlovsk-50) and Malyy Ulliss Bay. In recent years both bases went through noticeable infrastructure upgrades, also because of the need to accommodate new operational units, which have been progressively deployed to the Pacific since 2013.

A special emphasis is given to the nuclear submarine base in Viliuchinsk (also known as the 'Hornets' Nest'). The modernisation of the nuclear submarine base commenced after Russian President Vladimir Putin's visit in 2004 and has been carried out in two stages (2005—2008 and from 2013) in anticipation of the arrival of next-generation strategic and multirole submarines.

The first stage included construction of new moorings facilities, modernisation of communications, base perimeter security and a submariners' training centre.<sup>55</sup> During the second phase, the capacity of the base was expanded by addition of new piers, underground generators and other facilities, including for the incoming Poseidon submarine carriers. It was also reported that a large underground nuclear warhead storage facility was built.<sup>56</sup> During the inspection tour of the base by Russia's Defence Minister Andrei Belousov in mid-October 2024, SFC-RUSPAC's commander Vice-Admiral Vladimir Dmitriev reported that 14 additional facilities were under construction, including further expansion of mooring places, with all the works expected to be completed by mid-2025,<sup>57</sup> in time for the commencement of the next (sixth) phase of SFC-RUSPAC development.

One of key reasons Moscow invests considerable resources in its 'Hornets' Nest' is the strategic positioning of the base, which gives Russian submarines direct and uninterrupted access to the open ocean, which is unparalleled when compared to other Russian submarine bases. Also, Viliuchinsk's relative proximity to the US coast adds to its strategic value to Russian General Staff's war planning. Parallel to that, Russia's MoD is investing considerable resources in providing attractive incentives to submariners and their families. According to Evmenov, the average time required for a future submarine commanding officer (CO) to achieve full proficiency (including training) in the RFN was about 15 years.<sup>58</sup> Consequently, ensuring retention of highly qualified personnel is a high priority for the Russian MoD.

Remembering the paradox of the 1990s when a CO of a RUSPAC SSBN was earning less than a driver of a trolley bus in Moscow, Russia's MoD keeps increasing payments to its naval officer corps. It also makes considerable investments in housing and onshore recreation facilities, especially in Viliuchinsk.<sup>59</sup> In early 2024 a base level monthly wage of a CO of a nuclear-powered submarine was about 400 000 rubles (AU\$6 500); a base level monthly wage of a SSK CO was about 300 000 rubles (AU\$5,000).<sup>60</sup> By way of comparison, in the first half of 2024, an average monthly salary in Russia was 82 000 rubles.<sup>61</sup>

Historically, maintaining an operational naval force in the Pacific was a major challenge for Moscow. For example, back in 1989 the SOVPAC operated a vast force of 126 submarines of 18 different types and variants (Appendix 1). The fact that several types of Soviet submarines were built in shipyards in the country's west combined with the underdeveloped shore-based local support infrastructure created additional pressures for the naval command to keep sufficient levels of submarines fit for active duty. The massive lay-off of older-generation submarines in the 1990s eased the maintenance dilemma, including the need for a force comprising multiple classes of operational boats.<sup>62</sup> SFC-RUSPAC continues to operate six types of different-mission submarines, which is half of what constitutes an order of battle of Russia's submarine element deployed in

the Arctic (Table 5). This alone drastically eases the pressure of maintaining and servicing RUSPAC submarines.

There are many different categories of naval repair/support facilities used by the RFN. Among them are specialised naval repair shipyards (sudoremontnye zavody), naval repair workshops (sudoremontnye masterskie), floating workshops (plavuchie masterskie) and special industrial facilities (spetsializirovannye proizvodstvenno-tekhnicheskie bazy). Naval repair and floating workshops are usually task-oriented and they provide immediate and qualified servicing and repair support to the nuclear-powered submarine fleet. Such facilities are attached to main submarine bases, such as Viliuchinsk.

**Table 5: Submarine typology in the order of battle of Russia’s two-ocean-going fleets, March 2025<sup>63</sup>**

Type	Class	RUSNOR	RUSPAC
SSBNs	Project 955/955A (Borey/Borey A)	X	X
	Project 667BDRM (Delta-IV)	X	-
SSGNs	Project 885 (Yasen’/Yasen’ M)	X	X
	Project 949A (Oscar II)	X	X
SSNs	Project 971 (Akula/Akula II)	X	X
	Project 945A (Sierra II)	X	-
	Project 671RTMK (Victor III)	X	-
SSANs	Project 09852 (Converted Oscar II)	-	X
	Project 09787 (Podmoskovie)	X	-
	Project 20120 (Sarov)	X	-
	Project 1851 (X-Ray)	X	-
SSKs	Project 877/636.3 (Kilo/improved Kilo)	X	X
	Project 677 (Lada)	X	-

In 2024, RUSPAC was able to call on four principal places of maintaining and refitting its submarine force (Table 6), with all submarine building facilities being in St Petersburg (Project 636.3) and Severodvinsk (projects 855 and 955). Based on open-source analysis of the four listed facilities only two proved to be conditionally reliable providers of qualified support in recent years (the Zvezda and the Amur shipyard).<sup>64</sup> In particular, the latter was responsible for a major refit of the

RFS Komsomol'sk-na-Amure, which was completed in 2017. The Zvezda is responsible for a major overhaul of the select Oscar IIs. Since 2014, the yard was undergoing an upgrade to accommodate future maintenance and refits of the fourth-generation Borey and Yasen' classes.<sup>65</sup>

Problems with having effective support to maintain sufficient operational force was highlighted when Russia's MoD had to ferry two of RUSPAC's Akulas to Severodvinsk,<sup>66</sup> which were supposed to be refitted at the North-Eastern Repair Centre; called off its contract with the facility and sued it for failing to meet contractual obligations.<sup>67</sup> Russia's ability to effectively service and modernise its replenished RUSPAC submarine force depends on the state's capacity to successfully upgrade its regional repair facilities, improve the efficiency of repair work, and increase the professionalism of its management and workforce.

**Table 6: Principal submarine maintenance and repair facilities in Russia's Far East, March 2025<sup>68</sup>**

Facility	Location	Portfolio
Zvezda submarine repair facility	Bol'shoi Kamen'	Major refits of Oscar II, Severodvinsk and Borey classes; decommissioning of nuclear-powered submarines
Amur Shipyard (former Yard N 199)	Komsomol'sk-na-Amure	Major refits of Kilo class
Repair Yard N 178	Vladivostok	Repairs and refits of Kilo class
North-Eastern Repair Centre (Yard N 49)	Viliuchinsk	Maintenance and repairs of Oscar II and Akula class; decommissioning of nuclear-powered submarines

### Phase six (mid-2025 to 2030): Future trends

The ongoing modernisation of the Russian submarine force, including its Pacific element, follows a three-tiered approach towards national naval capability enhancement, which prioritises the strategic nuclear arm followed by the sub-surface sea denial (multirole submarine force) upgrade.<sup>69</sup> The progressive qualitative transformation of RUSPAC's submarine force parallels the ongoing modernisation and expansion of the fleet's other capabilities until 2030.<sup>70</sup>

As part of the multirole submarine force upgrade, RUSPAC is in the process of receiving two types of submarines (projects 855M and 636.3). By late 2024, Russia's MoD ordered 10 boats for RUSPAC, seven of which were commissioned, with more possibly to be laid in due course (see tables 1 and 6). After RFS Yakutsk is formally commissioned by mid-2025, SFC-RUSPAC is scheduled to receive no less than four new nuclear-powered submarines by 2030 (Table 6).

**Table 7: Major naval units under construction for RUSPAC, March 2025<sup>71</sup>**

Type of platform	Project, class, type of platform, (number ordered)	Vessels/ships	Operational (year)
<b>Strategic nuclear deterrent element</b>			
Nuclear-powered ballistic missile submarines	1 Project 955 Borey A class Displacement: 14 720/24 000 tonnes	RFS Knyaz Potemkin	2028
Special purpose submarines	1 Project 09851 Displacement: 10 000 tonnes dived (est.)	RFS Khabarovsk	2026—27
<b>Sub-strategic and tactical element</b>			
Multirole submarines	2 Yasen' M class SSGNs Displacement: 8 600/13 800 tonnes	RFS Perm' RFS Vladivostok	2026 2027—28
	1 Project 636.3 Improved Varshavyanka SSK Displacement: 2 350/3 950 tonnes	RFS Yakutsk	2025
<b>Surface auxiliary element</b>			
Major auxiliaries	1 Project 22010 ocean-going oceanographic research vessel Displacement: 5 200 tonnes	RFS Almaz	2026

Additionally, from 2025 RUSPAC would see the return to active service of some of its third-generation submarines, which are undergoing extensive and prolonged refits. In late June 2024, Russian state media reported that the RFS Irkutsk commenced sea trials after a protracted modernisation.<sup>72</sup> An eventual recommissioning of the RFS Irkutsk, RFS Chelyabinsk and RFS Samara would parallel a gradual retirement of some third-generation boats (older Kilos, Akulas and Oscars), which did not see a major refit in the 2020s.

The addition of the six (possibly seven) improved Boreys to the order of battle of the 25th submarine division would expand Russia's SBRSNF-P, largely targeting the US. It is expected that the future SBRSNF-P may operate six to seven Boreys (96 to 112 SLBMs; 576/960 to 672/1,120 warheads), which is likely to reflect future Russian SSBN force levels in the Pacific.<sup>73</sup>

The introduction of Yasen'-Ms together with the converted Oscar II and Akula classes in the order of battle of the 10th submarine division would expand its future mission profile from being largely an 'anti-aircraft carrier' to a multirole combat formation responsible for a wider range of tasks, including sub-strategic strikes against land. Furthermore, should MoD's plans to increase the order of Yasen's from the current nine to 12 eventuate,<sup>74</sup> it is likely to result in the expansion of the Yasen's future

force levels in the Pacific from the currently planned four to six boats.<sup>75</sup>

Soon, the conventional component of SFC-RUSPAC will see a gradual transition from a mixed Type 877/636.6 to a predominantly improved Kilo force except for one survivor of the Type 877 (RFS Komsomol'sk-na-Amure). A standard complement of the Kalibr-PL SLCMs on board Russia's Pacific Kilos encompasses a range of missions from standard sea denial and maritime interdiction to sub-strategic strike, something that older-generation Soviet era conventional boats were unable to undertake.

Altogether, by 2030 Russia's future submarine force in the Pacific may operate no less than 22 combat platforms, including at least 15 nuclear-powered boats.

**Table 8: SFC-RUSPAC future force level 2030 (2025 estimate)<sup>76</sup>**

Strategic	Sub-strategic	Conventional
2 Project 955 Borey 4 Project 955 A Borey-M 1 Project 09852 Belgorod 1 Project 09851 Khabarovsk	4 Project 855M Yasen'-M 2 Project 945AM Oscar-II 1+ Project 971AM Akula	6 Project 636.3 Improved Kilo 1 Project 877M Kilo
<b>Subtotal: 8</b>	<b>Subtotal: 7+</b>	<b>Subtotal: 7</b>

Before 2030 the Russian submarine force in the Pacific is expected to achieve not just a qualitative capability leap but also expand its organisational structure, from the current three principal combat formations to potentially five. Perhaps the most intriguing aspect of Russia's submarine force modernisation before 2030 will be the introduction of special mission nuclear-powered submarines in RUSPAC's order of battle. In the past, Moscow amassed its special submarines, including deep-dive submersibles, in the country's north. Yet, the decision to deploy the first two carriers of the 2M39 Poseidon strategic nuclear torpedo system is logical, given the geographical circumstances of the maritime theatre. The RFS Belgorod is expected to be transferred to the Pacific in 2025, to be followed by the purpose-built RFS Khabarovsk (see Table 6). Together, the two special purpose strategic submarines would reportedly be able to carry 12 Poseidons.<sup>77</sup>

Besides the above submarines, a new strategic division might include the RFS Akademik Makeev and other special auxiliaries like RFS Almaz, as well as an unknown number of other submarines.<sup>78</sup> It is possible that the new combat formation will also deploy deep-water autonomous underwater vehicles, such as the Vityaz'-D platform, which undertook a deep sea exploratory dive in the Mariana Trench on 9 May 2020.<sup>79</sup> The testing of these systems is also part of Russia's research and design work of the next (fifth) generation strategic submarine.<sup>80</sup>

Another combat formation that may be established under SFC-RUSPAC in the foreseeable future is the second conventional submarine unit. The deployment of a Kilo to Kamchatka in early 2024 fuelled speculations that Russian naval command might re-establish a conventional submarine bde, which was once stationed in the area. Although the current number of SSKs assigned to RUSPAC (nine to become 10 in 2025) allows for the creation of a second conventional submarine bde (four to five boats per bde), it is unlikely to happen because of the ongoing retirement of ageing boats. Should the Russian naval command reactivate a permanent basing of SSKs in Kamchatka, it may result in the formation of a separate submarine battalion (divizion) of one to two submarines, rather than a stand-alone brigade. According to the former RUSPAC commander, Admiral Sergei Avakyants, the fleet requires 18 SSKs (three bdes) in its order of battle.<sup>81</sup> If this view reflects the future force

design estimates of the Russian naval staff and general staff, the eventual resumption of SSK construction can be expected.



Akula II class SSN, Kamchatka

## Implications for the SUBFOR and allied navies

The Russian submarine school is one of the world's oldest and most reputed when it comes to levels of professional competence, training and tactical innovation. Moscow rightfully promotes itself as one of the world's leaders in submarine construction and application of global undersea warfare capabilities, due to its continuous technological innovation, improvement of indigenous submarine designs and steady submarine production programs. For example, over its 124 years, the Rubin, Russia's principal submarine design bureau, has been responsible for the design and support of the construction of 1072 conventional and nuclear-powered submarines, including 956 for the Russian imperial/Soviet/RFN, and 116 for Moscow's overseas allies and clients.<sup>82</sup>

Australia and its allies must factor in Russia's historical influence on the development of many regional navies as well as ongoing cooperation with friendly submarine forces across the Indo-Pacific (Table 8). Although Russia's current and future submarine force levels in the Pacific would be incomparably smaller than those of the SOVPAC, an active presence of 12 to 15 modern nuclear-powered platforms in the theatre is a stand-alone factor that cannot be ignored. Furthermore, Moscow's intent to continue deploying the second largest and most modern SSBN force in the Pacific theatre is another factor that requires recognition.

**Table 9: Russia’s international naval cooperation (undersea warfare) in the Indo-Pacific<sup>83</sup>**

Partner nation	Areas of cooperation	
	Platforms	Operations and human infrastructure
<i>Existing</i>		
<b>India</b>	Kilo class maintenance and upgrade The INS Chakra project (SSN leasing) Assisting India’s indigenous submarine design and production	Education and training (crews and technical support personnel) Submarine rescue cooperation Port access
<b>Iran</b>	Kilo class maintenance and upgrade	Education and training (crews and technical support personnel)
<b>PRC</b>	Kilo class maintenance and upgrade Joint design of a future SSK	Education and training (crews and technical support personnel) Joint exercises involving sub element (conventional and nuclear) Submarine rescue cooperation
<b>Vietnam</b>	Kilo class maintenance and upgrade Shore-based support infrastructure (Cam Ranh Bay)	Education and training (crews and technical support personnel) Submarine rescue cooperation
<i>Emerging</i>		
<b>DPRK</b>	Assisting North Korea’s indigenous submarine design and production	Education and training (crews and technical support personnel) Port access
<b>Myanmar</b>	Kilo class maintenance and upgrade	Education and training (crews and technical support personnel) Joint exercises involving sub element Port access

The gradual expansion of Russia’s operational activities across the Pacific theatre, including its undersea warfare component, is also worth considering. Expeditions of the Russian naval hydrographic service as well as special deep sea activities, which have been carried out over the past decade, could also be interpreted as actions undertaken in the interests of Russian submariners and associated services.<sup>84</sup> Since Soviet times, Russian naval command considered undersea warfare capabilities pivotal. Their development has always received priority funding and state support. Submariners traditionally took up leadership roles in the Russian naval hierarchy.<sup>85</sup>

Since the Russo-Japanese war, Russia's oldest submarine force played a key role in sea denial and later also in strategic deterrent operations, at times making up for the shortfalls of other naval capabilities. After yet another dramatic decline of the 1990s, RUSPAC's submarine capability has fully recovered and entered a period of qualitative transformation, emerging as a compact but a potent multirole force, once again giving Russia a undersea trident worth noting.

## Endnotes

1 Yuri Trakalo, 'Besshumnaya i Groznaya "Ufa"' [Quiet and Fearful "Ufa"], *Boyevaya Vakhta*, 27 December 2024, pp. 1, 8.

2 On 25 September 2024, Supreme Chief of the Russian Federation Navy (RFN) Admiral Aleksandr Moiseev (former nuclear submariner) personally witnessed the arrival of the two newest nuclear-powered submarines. Elena Shcherbaniuk, 'Vstali na Zashchitu Dal'nevostochnykh Rubezhei Derzhavy' [Rose to defence of the state's Far Eastern frontiers], *Boyevaya Vakhta*, 4 October 2024, pp. 1, 4; 'Atomokhody "Imperator Aleksandr III" i "Krasnoyarsk" Pribyli na Tikhookeanskiy Flot' [Nuclear-powered submarines "Aleksandr III" and "Krasnoyarsk" arrived in the Pacific Fleet], TASS, 25 September 2024, Атомоходы "Император Александр III" и "Красноярск" прибыли на Тихоокеанский флот (tass.ru). N.B. For references concerning submarine types and classes see Table 1 and Appendix 2.

3 Vladimir Matveev, Bogdan Stepovoi, 'Polnoe Pogruzhenie: v Peterburge Spustili na Vodу Podlodku "Yakutsk"' [Complete dive: the Yakutsk submarine was launched in St. Petersburg], *Izvestia*, 11 October 2024, <https://iz.ru/1773171/vladimir-matveev-bogdan-stepovoi/polnoe-pogruzeni...>

4 For more analysis of the transformation of Russian/Soviet submarine force in the Pacific, its operational trends and exercise activity before 1991 see Alexey D Muraviev, *The Russian Pacific Fleet: From the Crimean War to Perestroika*, Papers in Australian Maritime Affairs, no. 20, Department of Defence, 2007, [navy.gov.au/sites/default/files/documents/PIAMA20.pdf](http://navy.gov.au/sites/default/files/documents/PIAMA20.pdf).

5 A I Sorokin, V. N. Krasnov, *Korabli Prokhodyat Ispytaniya* [Ships are undertaking trials], Leningrad, Sudostroevie, 1985, pp. 38–39.

6 V N Semenov, 'Etapy Razvitiya Podvodnykh Sil Rossiiskoi Imperii – SSSR na Dal'nem Vostoke' [Stages of the development of submarine forces of the Russian empire – USSR in the Far East], *Nauka. Obshchestvo. Oborona*, 8 (3), 2020, *Подводные силы России, Дальний Восток* (noo-journal.ru)

7 Semenov, 'Etapy Razvitiya Podvodnykh Sil Rossiiskoi Imperii – SSSR na Dal'nem Vostoke'.

8 *Nezavisimoe Voennoe Obozrenie*, N 47 2000, p. 1.

9 'Russian Subs 'Not Suffering' Says US Navy', *Jane's Defence Weekly*, 16 April 1997, p. 5. NB. The assessment of the Russian submarine force was probably partially based on the reports about the increased activity of Russian nuclear-powered attack submarines in both the Atlantic and the Pacific oceans at that time and, in some cases, in the relative vicinity of the US coast.

10 In recent years, the annual rate of commissioning of new units was one to two boats.

11 *Jane's Fighting Ships* (editions 2013–14 to 2021–24); *Voенно-Promyshlenny Kurier* (issues 2013–22); *Nezavisimoe Voennoe Obozrenie* (issues 2013–23); *RIA Novosti* (issues 2014–25), *TASS* (issues 2013–25); *Krasnaya Zvezda* (issues 2013–25); data collected by the author.

12 Vyacheslav Ivanov, Vladimir Karnozov, 'Tikhookeanskaya Diviziya Podlodok Perevooruzhilas'' [The Pacific submarine division has been rearmed], *Nezavisimoe Voennoe Obozrenie*, 26 October 2023, *Тихоокеанская дивизия подлодок перевооружилась / Вооружения / Независимая газета*

(ng.ru)

13 For example, Rear-Admiral Petrenko and Captain 1st rank Koryakovtsev argued that if an adversarial CVBG would dominate the surface and airspace but Russian forces would control the undersea domain, adversarial forces would fail to establish and maintain sea control. I. Ya. Petrenko, A A Koryakovtsev, 'Gospodstvo na More: Zavoyevat' i Uderzhat'' [Dominance at Sea: to gain and maintain], *Voennaya Mysl'*, N 8, August 2021, p. 62.

14 Data collected by the author.

15 In early 2025, of the 25 boats listed in the order of battle four were in refit or undergoing extensive modernisation (Appendix A).

16 Operationally, it is assigned to the Primorskaya Flotilla (PRIMFLOT).

17 Additionally, PDSS combat divers could also undertake offensive missions behind enemy lines, thus making them falls somewhere between the RAN's clearance divers and the USN's SEAL teams.

18 Compared with Borey/Borey-As PLAN's Type 094 SSBNs are less sophisticated platforms- and carry less payload (12 SLBMs against 16 on board Boreys). Hence, in 2024 the combined single salvo of five RUSPAC Borey/Borey-As was greater than of six Type 094s. Also, Russian MIRVed SLBMs could carry up to 10 nuclear warheads and are better equipped with ballistic-missile defence penetration capability, thus making them more potent in comparison with current Chinese SSBN/SLBM strategic systems. For example, see 'Ballistic Missile Submarines in the Chinese Navy; Developing a Second Stage Nuclear Deterrent, Part Two', *Military Watch Magazine*, 13 September 2019, *Ballistic Missile Submarines in the Chinese Navy; Developing a Second Stage Nuclear Deterrent - Part Two* ([militarywatchmagazine.com](http://militarywatchmagazine.com))

19 In 2022 – 2023, she remained operational in the RUSNOR by continuing trials of the Poseidon. RFS Belgorod is to be transferred to Viliuchinsk sometime in 2024–25, also after the full completion of shore-based support infrastructure.

20 *Jane's Fighting Ships* (editions 2023–2024); *The Military Balance* (editions 2023, 2024); *Defence of Japan 2023*; *Krasnaya Zvezda* (issues 2023–24); data collected by the author.

21 Ivan Safronov, 'Rossiiskie Podlodki Mogut Strelyat' Raketoi "Bulava" Tol'ko s Zapada na Vostok' [Russian submarines could only fire the Bulava from west towards east], *Vedomosti*, 31 October 2019, *Российские подлодки могут стрелять ракетой «Булава» только с запада на восток - Вести* ([vedomosti.ru](http://vedomosti.ru))

22 The live firing of the Bulava SLBM on 29 October 2024 was part of the annual check-up of Russia's strategic nuclear deterrent capability. Aleksandr Tikhonov, 'Yadernaya Triada Garantiruyet Suverenitet' [The nuclear triad guarantees sovereignty], *Krasnaya Zvezda*, 30 October 2024, pp. 1–2.

23 The fact that RUSPAC SSBN crews are taking part in regular SLBM launches in the north suggests that they are given opportunities to master their operational and strategic warfare skills. *Ibid.*

24 Back in 2008, then commander of the RUSPAC Vice-Admiral Konstantin Sidenko detailed that according to his information four of the eight US SSBNs assigned to the Pacific were at sea on

continuous deployments. Hence, he argued that RUSPAC should support similar operational tempo. K. Sidenko, 'Rol' Tikhookeanskogo Flota v Podderzhanii Voenno-Morskogo Ravnovesiya v Aziatsko-Tikhookeanskom Regione' [The role of the Pacific Fleet in maintaining naval parity in the Asia-Pacific region], *Morskoi Sbornik*, 7 2008, pp. 15–16.

25 That fact alone makes the RUSPAC's 25th submarine (strategic) division a core asset in Russia's counter-value and counter-force strategic nuclear strikes in a potential nuclear conflict with the US.

26 The time horizon of Russia's nuclear-powered multirole submarine deployments is shorter than of the USN's equivalents. US SSNs' tours of duty could last six to seven months, also because of their capacity to call on friendly ports overseas.

27 Sam Lagrone, 'NORTHCOM: Russia Close to Persistent Nuclear Cruise Missile Attack Sub Presence off US Coasts', *USNI News*, 23 March 2023, NORTHCOM: Russia Close to Persistent Nuclear Cruise Missile Attack Sub Presence off U.S. Coasts - *USNI News*

28 *Morskoi Sbornik* (editions 1994–1999); *Jane's Defence Weekly* (issues 1994–1999); data collected by the author. N.B. Some of these operations were staged at distances of more than 7,000 km from the Russia's Pacific coast.

29 Konstantin Yasnov, 'Traditsiya – Byt' Luchshimi' [A tradition to be the best], *Boyevaya Vakhta*, 22 March 2024, p. 8.

30 In the second half of 2002, an unidentified Kilo class conducted a long-range patrol after a six-year break. Nikolai Litkovets, 'Iz Dal'nego Pokhoda' [From a Long-Range Deployment], *Krasnaya Zvezda*, 28 November 2002, p. 1.

31 Vladimir Bocharov, 'Vernulis' v Rodnuiu Bazu' [Returned to home base], *Boyevaya Vakhta*, 17 May 2024, p. 9.

32 Roman Kretsul, Aleksei Mikhailov, Andrei Fedorov, 'Tishe, Vody' [Quiet, waters], *Izvestia*, 7 February 2024, pp. 1, 3.

33 Roman Kretsul, Aleksei Ramm, 'Ledovaya Rasstanovka' [Icy configuration], *Izvestia*, 28 July 2022, p. 2.

34 'Istochnik: Podlodka "Ufa" TOF Reshayet Zadachi Boyevoi Sluzhby v Sredizemnom More' [The source: the Pacific Fleet "Ufa" submarine fulfils combat service tasks in the Mediterranean Sea], *TASS*, 19 June 2024, *Источник: подлодка "Уфа" ТОФ решает задачи боевой службы в Средиземном море* ([tass.ru](https://tass.ru))

35 Konstantin Lobkov, 'Pioneram Podplava Posvyashchaetsya' [Dedicated to pioneers of the submarine force], *Krasnaya Zvezda*, 14 January 2025, p. 5.

36 *Krasnaya Zvezda* (issues 2020–2025); *TASS* (issues 2020–2025); *Morskoi Sbornik* (editions 2020–2025); *Boyevaya Vakhta* (issues 2023–2025); data collected by the author.

37 Konstantin Lobkov, 'Na Strazhe Vostochnykh Rubezhei Strany' [On guard of the country's eastern frontiers], *Suvorovskiy Natisk*, 24 May 2024, p. 10.

38 This selection includes only operational submarines/crews.

39 'Podvedeny Itogi, Postavleny Zadachi' [Conclusions have been drawn, tasks have been appointed], *Boyevaya Vakhta*, 6 December 2024, p. 3.

40 Konstantin Lobkov, 'Pyat' Boyevykh Sluzhb "Varshavyanok" [Five combat services of the Varshavyanka class], *Krasnaya Zvezda*, 21 March 2025, p. 5.

41 For example, in the USSR conscripts served three years in the navy. However, it was determined that they would be reaching their professional prime only towards the third year of their national service, thus leaving a submarine crew 'best fit' for service only for about 12 months before another round of draftees would come in. This is no longer an issue with crews staffed with personnel who serve on long-term professional contracts.

42 The Order of Nakhimov is the highest naval commendation in Russia's defence award system.

43 Yuri Rossolov, 'Nagrada, Obyazyvaiushchaya ko Mnogomu' [An award that obliges to do a lot], *Krasnaya Zvezda*, 17 September 2024, p. 6.

44 'Rossiiskie Podvodnye Lodki za Pyat' Let Vtroe Uvelichili Prebyvanie v More' [Russian submarines tripled their time at sea in five years], *RIA Novosti*, 17 March 2018, *Российские подводные лодки за пять лет втрое увеличили пребывание в море - РИА Новости, 03.03.2020 (ria.ru)*

45 Yulia Kozak, 'Ikh Stikhiya – Glubina Morskaya' [The ocean depth is their element], *Krasnaya Zvezda*, 17 March 2023, p. 6.

46 Andrei Kots, 'Sekrety "Avtonomki". Kak Deistvuiut Rossiiskie APL v Dal'nikh Pokhodakh' [Secrets of an 'autonomous deployment'. How Russian nuclear-powered submarines act during long-range deployments], *RIA Novosti*, 22 May 2018, *секреты "автономки". Как действуют российские АПЛ в дальних походах - РИА Новости, 03.03.2020 (ria.ru)*

47 'Voennaya Priemka. "Antei". Ubitsa Avianostsev' [Military Commissioning. Antei. Aircraft carrier killer], *Zvezda*, 14 January 2024 <https://tvzvezda.ru/video/programs/201412231323-1срс.htm/202411386-lJnU3.html>

48 Yuri Rassolov, 'Rastet i Krepnet Yadernaya Moshch Severo-Vostoka Rossii' [The nuclear might of Russia's north-east grows and strengthens], *Krasnaya Zvezda*, 12 September 2024, p. 6.

49 *Krasnaya Zvezda* (issues 2024–2025); *TASS* (issues 2024–2025); *Morskoi Sbornik* (editions 2024–2025); *Boyevaya Vakhta* (issues 2024–2025); data collected by the author. \* - the entire duration of the RFS Ufa's deployment includes its operational activity in the Mediterranean Sea (Table 3).

50 Konstantin Lobkov, 'Kursom Neuistannogo Sovershnstvovaniya' [Towards the course of relentless improvement], *Krasnaya Zvezda*, 21 March 2022, p. 11.

51 'Na Kamchatku Posle Boyevoi Zluzhby Vernulis' Tri Atomnye Podvodnye Lodki' [Three nuclear-powered submarines returned to Kamchatka after combat service], *TASS*, 15 July 2022, *На*

Камчатку после боевой службы вернулись три атомные подводные лодки - ТАСС (tass.ru)

52 Lobkov, 'Pyat' Boyevykh Sluzhb "Varshavyanok", p. 5.

53 Yuri Gavrilov, 'K Resheniu Zadach Vnezapnoi Proverki TOF Podkliuchilis' Ekipazhi Atomnykh Podlodok' [Crews of nuclear-powered submarines of the Pacific Fleet joined in accomplishing tasks of a snap-check-up], Rossiiskaya Gazeta, 18 April 2023, К решению задач в рамках внезапной проверки ТОФ подключились экипажи атомных подлодок - Российская газета (rg.ru)

54 Kots, 'Sekrety "Avtonomki"':

55 Sidenko, 'Rol' Tikhookeanskogo Flota v Podderzhanii VoЕННО-Morskogo Ravnovesiya v Aziatsko-Tikhookeanskom Regione', p. 15.

56 Eliana Jones, 'Upgrades to Russia's Nuclear-Capable Submarine Fleet', Federation of American Scientists, 7 February 2024, Upgrades to Russia's Nuclear-Capable Submarine Fleet - Federation of American Scientists (fas.org)

57 Andrei Gavrilenko, 'V Tsentre Vnimaniya Boyevye Vozmozhnosti i Infrastruktura Podvodnykh Sil TOF' [The combat potential and the infrastructure of the submarine forces of the Pacific Fleet are in the centre of attention], Boyevaya Vakhta, 18 October 2024, p. 1.

58 Kozak, 'Ikh Stikhiya – Glubina Morskaya', p. 6.

59 For example, in 2021 it was reported that Russia's Minister of Defence approved plans to build stand-alone townhouses and a yacht club for officers stationed in Viliuchinsk. More defence accommodation, kindergarten and school facilities would be built to service the expanding contingent of submariners and their families stationed at the 'Hornets' Nest'. Yuri Rossolov, 'Garant Stabil'nosti v Aziatsko-Tikhookeanskom Regione' [A guardian of stability in the Asia-Pacific region], Krasnaya Zvezda, 19 March 2021, p. 7.

60 'Istochnik Raskryl Razmer Zarplaty Komandira Atomnoi Podlodki [A source revealed a salary level of a nuclear submarine commander], RIA Novosti, 19 March 2024, Источник раскрыл размер зарплаты командира атомной подлодки - РИА Новости, 19.03.2024 (ria.ru) N.B. By factoring in additional payments for serving in the Far East, special bonuses for a military rank, combat deployments and other the real wage level of a CO and other officers would be much higher than a declared base line.

61 'Srednyaya Zarplata v Rossii Vpervye Prevysila 80 000 Rublei [For the first time an average salary in Russia exceeded 80,000 rubles], Banki.ru, 24 September 2024, Средняя зарплата в России впервые превысила 80 тысяч рублей 24.09.2024 | Банки.ру (banki.ru)

62 By 2001, RUSPAC operated only six types of submarines, down from 18 12 years earlier, Appendix B.

63 Jane's Fighting Ships (editions 2023–2024); The Military Balance (editions 2023, 2024); Morskoj Sbornik (editions 2020–2025); Krasnaya Zvezda (issues 2020–2025); TASS (issues 2020–2025); data collected by the author.

64 A reference on conditionally reliable providers is based on the reality check that the completion of recent major refits works, which were undertaken by both facilities, was seriously delayed. For example, the completion of the RFS Komsomol'sk-na-Amure major refit at the Amur shipyard took 12 years; RFS Irkutsk at the Zvezda – 11 years. Data is collected by the author.

65 'Zavod "Zvezda" Moderniziruyet Moshchnosti dlya Remonta Podlodok' [The Zvezda shipyard modernises capacity to refit submarines], RIA Novosti, 8 October 2014, [Завод "Звезда" модернизирует мощности для ремонта подлодок - РИА Новости, 25.11.2014 \(ria.ru\)](#). N.B. The upgrade of the Zvezda submarine maintenance and repair capacity includes a construction of a new floating dock sufficient to accommodate units with large displacement.

66 Thomas Nielsen, 'Pacific Akulas Arrive in Severodvinsk', Barents Observer, 24 September 2014, [Pacific Akulas arrive in Severodvinsk | Barentsobserver](#)

67 'SRZ na Kamchatke Poteryal Kontrakt Minoborony i 466 mln Rublei' [Naval shipyard in Kamchatka lost a contract with the Ministry of Defence and 466 mln rubbles], Kamchatskoe Vremya, 10 December 2020, [СРЗ на Камчатке потерял контракт Минобороны и 466 млн рублей \(city-pages.info\)](#)

68 Morskoj Sbornik (editions 2020–2025); Krasnaya Zvezda (issues 2020–2025); TASS (issues 2020–2025); data collected by the author.

69 Alexey D Muraviev, Battle Reading the Russian Pacific Fleet 2023 – 2030, Canberra, Sea Power Centre Australia, 2023, <https://seapower.navy.gov.au/sites/default/files/documents/Battle%20Rea...>

70 Phase Six is integrated with the fourth stage of the RUSPAC's modernization program - described as expansion into the open ocean. Ibid.

71 Jane's Fighting Ships (editions 2023–2024); Krasnaya Zvezda (issues 2023–2025); RIA Novosti (issues 2023–2025), TASS (issues 2023–2025); data collected by the author.

72 'Istochnik Soobshchil o Vykhode APL "Irkutsk" na Khodovye Ispytaniya Posle Remonta' [A source reported of the commencement of sea trials of the "Irkutsk" nuclear-powered submarine after a refit], TASS, 26 June 2024, [Источник сообщил о выходе АПЛ "Иркутск" на ходовые испытания после ремонта \(tass.ru\)](#). N.B. The RFS Irkutsk is expected to be formally recommissioned with the RUSPAC in late 2025, six years behind the original schedule. 'Istochnik: Vozvrashchenie v Stroi Modernizirovannoi APL "Irkutsk" Perenesli na 2025 God' [A source: a recommissioning of the modernised "Irkutsk" nuclear-powered submarine has been moved to 2025], TASS, 10 January 2024, [Источник: возвращение в строй модернизированной АПЛ "Иркутск" перенесли на 2025 \(tass.ru\)](#)

73 'Istochnik: Kreiser "Pyotr Velikiy" Peredast Svoe Imya Podvodnomu Atomnomu Raketonostsu' (Source: The Pyotr Velikiy cruiser will transfer her name to nuclear-powered missile-carrying submarine), TASS, 20 April 2023, [tass.ru/armiya-i-opk/17566059](https://tass.ru/armiya-i-opk/17566059).

74 Dmitriy Kornev, 'Spros s "Yasenya": Chto dast Flotu Stroitel'stvo Novykh Atomnykh Podlodok' [A query from "Yasenya": what would a construction of new nuclear-powered submarines give the navy], Izvestia, 26 November 2023, [Спрос с «Ясенья»: что даст флоту строительство новых атомных подлодок | Статьи | Известия \(iz.ru\)](#)

75 Thomas Nilsen, 'Northern Fleet Eyes Six Yasen' Submarines as Russia Approves Largest ever Defence Spending', The Barents Observer, 21 November 2023, Northern Fleet eyes six Yasen submarines as Russia approves largest ever defence spending | The Independent Barents Observer (thebarentsobserver.com)

76 Jane's Fighting Ships (editions 2013–2014 to 2021–2024); Krasnaya Zvezda (issues 2013–2025); RIA Novosti (issues 2014–2025), TASS (issues 2013–2025); Nezavisimoe Voennoe Obozrenie (issues 2013–2023); Voенno-Promyshlenny Kurier (issues 2013–2022); data collected by the author.

77 Jones, 'Upgrades to Russia's Nuclear-Capable Submarine Fleet'.

78 Anton Lavrov, Aleksei Ramm, 'V Tikhom Omute' (Inside a quiet whirlpool), Izvestia, 20 February 2023, pp 1, 3; 'Diviziu Spetslodok s "Poseidonami" Sformiruiut na Kamchatke v 2025 Godu' (A division with the Poseidon armed special submarines will be formed in Kamchatka in 2025), TASS, 3 April 2023, tass.ru/armiya-i-opk/17431799.

79 'Vityaz-D Deep-Sea Autonomous Underwater Vehicle', Naval Technology, 3 September 2020, naval-technology.com/projects/vityaz-d/.

80 According to Chief of the Rubin submarine design bureau Igor Vil'nit, the lead vessel was expected to be built around 2040. The future multitask platform would be based on the Arktur concept design, also incorporating deep-water autonomous drone capability. Sergei Safronov, 'Igor Vil'nit: Atomnaya Podlodka Pyatogo Pokoleniya Poyavitsya k 2040 godu' [Igor Vil'nit: a fifth-generation nuclear-powered submarine will arrive by 2040', RIA Novosti, 14 August 2024, <https://ria.ru/20240814/atomnaya-podlodka-pyatogo-pokoleniya-poyavitsya-k-2040-godu-2024-08-14> (ria.ru)

Sergei Safronov, 'Igor Vil'nit: Atomnaya Podlodka Pyatogo Pokoleniya Poyavitsya k 2040 godu' [Igor Vil'nit: a fifth-generation nuclear-powered submarine will arrive by 2040', RIA Novosti, 14 August 2024, Игорь Вильнит: атомная подлодка пятого поколения появится к 2040 году - РИА Новости, 14.08.2024 (ria.ru)

81 Matveev, Stepovoi, 'Polnoe Pogruzhenie: v Peterburge Spustili na Vodu Podlodku "Yakutsk"'

82 'V TsKB "Rubin" Rasskazali o Stroitel'stve Podvodnykh Lodok' [The contraction and design bureau Rubin discussed submarine construction], RIA Novosti, 20 December 2024, <https://ria.ru/20241220/podlodki-1990342630.html>&nbsp;

83 Jane's Defence Weekly; Naval Technology; Krasnaya Zvezda; Nezavisimoe Voennoe Obozrenie; Voенno-Promyshlenny Kurier; data collected by the author.

84 Muraviev, Battle Reading the Russian Pacific Fleet 2023–2030.

85 For example, RUSPAC commander Admiral Viktor Liina is a former nuclear submariner.

86 Jane's Fighting Ships (editions 2089–90 to 2000–01); The Military Balance (issues 1989, 1990, 2000, 2001); data collected by the author.

87 Jane's Fighting Ships (editions 2013–14 to 2023–24); Nezavisimoe Voennoe Obozrenie (issues 2013–23); RIA Novosti (issues 2014–25), TASS (issues 2013–25); Krasnaya Zvezda (issues 2013–

25); *Voenno-Promyshlenny Kurier* (issues 2013–22); data collected by the author.  
88 *Morskoi Sbornik* (issues 2016 to 2025; *Nezavisimoe Voennoe Obozrenie* (issues 2016–23); RIA  
Novosti (issues 2016–25), TASS (issues 2016–25); *Krasnaya Zvezda* (issues 2016–25); *Boevaya*  
*Vakhta* (issues 2021–25); data collected by the author.

Appendix 1: Reductions of submarine typology in the SFC-RUSPAC order of battle, 1989, 2001<sup>1</sup>

Type	Class	Order of Battle	
		1989	2001
SSBNs	Yankee	8	-
	Delta I	9	1
	Delta II	-	-
	Delta III	8	6
SSGNs	Charlie I/II	8	-
	Echo II	14	-
	Oscar II	-	6
SSNs	Echo I	5	-
	November	4	-
	Victor I	4	-
	Victor III	12	1
	Akula	5	5
SSBs	Golf-II	6	-
SSGs	Juliet	6	-
SSKs	Foxtrot	13	-
	Whiskey	12	-
	Kilo	9	8
SSACs	Golf I	1	-
SSTs	Bravo	1	-
ASGSSs	India	1	-

<sup>1</sup> *Jane's Fighting Ships* (editions 2089–90 to 2000–01); *The Military Balance* (issues 1989, 1990, 2000, 2001); data collected by the author.

Appendix 2: SFC-RUSPAC's order of battle, December 2024<sup>2</sup>

Type	Class	Pennant number name	Displacement surfaced/dived	Main armament	In service since	Status	
<b>25th Submarine Division, Viliuchinsk</b>							
SSBN	Proj. 955 Borey	K-500 RFS Aleksandr Nevskiy	14 720/24 000	16 R-30 Bulava (SS-N-32); 8x533 mm torpedo tubes; sea mines	2013	Active	
		K-551 RFS Vladimir Monomakh			2014	Active	
	Proj. 995A Borey A	K-552 RFS Knyaz' Oleg			2021	Active	
		K-553 RFS Generalissimus Suvorov			2022	Active	
		K-554 RFS Imperator Aleksandr III			2023	Active	
<b>10th Submarine Division, Viliuchinsk</b>							
SSGN	Proj. 855 Yasen M	K-573 RFS Novosibirsk	8 600/13 800	8x4 missile tubes Onisk and Tsirkon OR 8x5 Kalibr; 10x533 mm torpedo tubes (30 torpedoes)	2021	Active	
		K-571 RFS Krasnoyarsk			2023	Active	
	Proj. 949A/949AM Oscar-II/Modernised Oscar-II	K-132 RFS Irkutsk	14 200/23 900	12x2 missile tubes (24 P-700 Granit); 2x650 mm and 4x533 mm torpedo tubes (up to 28 torpedoes)	1988	In refit/ sea trials	
		K-150 RFS Tomsk			1996	Active	
		K-186 RFS Omsk			1993	Active	
		K-442 RFS Chelyabinsk			1990	In refit	
		K-456 RFS Tver'			1992	Active	
	SSN	Proj. 971 Akula	K-295 RFS Samara	8 140/12 770	4x650 mm and 4x533 mm torpedo tubes (40 torpedoes)	1995	In refit
			K-331 RFS Narval			1990	In refit
			K-419 RFS Kuzbass			1992	Active
<b>Future Special-Purpose Submarine Division, Viliuchinsk</b>							
SSAN	Proj 09852	BS-329 RFS Belgorod	14 700/30 000	6 Poseidon nuclear super-torpedoes	2022	Active	
<b>19th Submarine Brigade, Vladivostok</b>							

SSK	Proj, 877 Kilo	B-187 RFS Komso- mol'sk-na-Amure	2 300/3 040	6x533 mm torpedo tubes (18 torpedoes or 24 sea mines; 4 to 6 Kalibrs (636.3))	1991	Active
		B-394 RFS Nurlat			1988	Active
		B-464 RFS Ust'-Kamchatsk			1990	Active
		B-494 RFS Ust'- Bol'sheretsk			1990	Active
	Proj. 636.3 Im- proved Kilo	B-274 RFS Pet- ropavlovsk-Kam- chatskiy			2019	Active
		B-588 RFS Ufa			2022	Active
		B-602 RFS Magadan			2021	Active
		B-603 RFS Volkhov			2020	Active
		B-608 RFS Mozhaisk			2023	Active

2 *Jane's Fighting Ships* (editions 2013–14 to 2023–24); *Nezavisimoe Voennoe Obozrenie* (issues 2013–24); *RIA Novosti* (issues 2014–24), *TASS* (issues 2013–24); *Krasnaya Zvezda* (issues 2013–24); *Voенно-Промышленный Курьер* (issues 2013–22); data collected by the author.





