

Russia's Submarine Fleet: Between  
Rust and Radioactivity  
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originally published by Berlin Story  
News <sup>1</sup>

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<sup>1</sup>satellite images available on request, not available on pdf due to copyright problems.

When Tom Clancy wrote the novel "Hunt for Red October" in 1984, the world was a different place. Germany - and the world - was divided in two, the Macintosh had just come out, and the whole world would soon know the Indian city of Bhopal. Western and Eastern bloc countries were engaged in arms races, and it is this political high-explosive atmosphere that Tom Clancy describes perfectly. More than 30 years after the release of the quasi-cult film of the same name, the tide has turned, the world's largest submarine class Typhoon, the de facto lead in the book and film, has been buried and the then-modern fleet is a mere shadow of its former self.

While on paper the Russian Navy is still the second largest navy in the world with over 350 ships and over 160,000 men, the reality is different. Many of its ships are severely outdated, and the average age of the Russian fleet is more than 30 years. Despite the Russian Navy's modernization plans, one may wonder if the once-feared fleet is not now only a threat to its own crews.

In the second half of the twentieth century, the Soviet Union (and its little brother Russia) created the largest nuclear-powered navy in the world. At the height of its military might, the Russian Navy possessed 245 nuclear submarines and more than 90 ballistic missile submarines with nuclear warheads. This sheer size is another example of Russian doctrine - many of the submarines were already obsolete by the time they were launched. True to the age-old concept of security in mass, the Soviet fleet was certain of victory in an emergency. It is in this sheer mass, many years later, long after the collapse of the Soviet Union, that the problem lies.

Anyone who has ever served on a sea - or even simply vacationed by the sea - knows that salt water is merciless and corrodes everything it can reach. This decomposition does not even stop at the gigantic nuclear submarines; oxidation mercilessly destroys everything that is not constantly nurtured and cared for. In addition, a nuclear submarine is a complex structure of components working closely in concert, and the failure of a single one can have far-reaching effects. Barely 400 meters below the water's surface, a small failure can mean the death of the entire crew in the worst case scenario.

Especially in the years following the collapse of the Soviet Union, when the country was dominated by economic downturn and what little money was available often fell victim to corruption, this inescapable complexity is proving fatal. In many places, there is a lack of spare parts, repairs, or simply experienced seamen and training. In 1995, for example, a meltdown nearly occurred on an Akula I fighter submarine after a local electricity company cut off power to the submarine base in Murmansk because the Navy had not paid \$4.5 million worth of bills. Only the use of threatened armed force restored power to the base and prevented a nuclear accident.

The Russian Navy was also aware of this deficit and, as part of the economic recovery from 2005 onward, it decided to undertake extensive modernization. More than 200 severely outdated submarines, including some of the Typhoon submarines that had been lying idle since the collapse of the Soviet Union, were finally - with one exception - decommissioned. Many former Soviet submarines have since lain aground in the fjords of Murmansk and Kamchatka, their reactors still full of fuel rods, slowly rusting away and releasing their radiation into the Barents Sea, polluting the area for years to come. The region around Murmansk is considered one of the most contaminated in the world - more contaminated than some nuclear weapons test sites. Worse, the submarines

that are scrapped pose a high risk to the scrappers themselves, who are often not trained in scrapping submarines - fires often break out on board or outdated ammunition explodes. In recent years, modernization has faltered and, in typical Russian tradition, much is promised but little is actually done. Probably the best example of this sad fact is the Russian aircraft carrier Admiral Kuznetsov. Once the pride of the Russian Navy, it has been in dry dock since 2017, and has since taken heavy damage from a collapsing crane, a fire, and several explosions on board. In 2017, repairs were expected to be completed in 2021. In 2021, the Russian Navy excused the delays due to "bad weather" and postponed completion until 2022. Reportedly, this modernization has been put on hold entirely due to the Ukraine war. One reason is the lack of microchips - sanctions ensure Russia has little access to the precision technology it needs - and the few parts available are used for war technology such as 3M-54 Kalibr short-range missiles. But the curse of this modernization also runs through the Russian submarine fleet; in addition to the problems mentioned at the beginning, there is also a lack of technology. Many fighter submarines still use sonar technology from the time of the Soviet Navy - which was already inferior to NATO technology at that time.

Nevertheless, nuclear-powered Russian submarines with their Kalibr missiles play a major role, especially in the Ukraine war. Virtually undetectable, they launch their missiles with conventional warheads near the coast.

But Russian submarines are also more active in the Baltic Sea and the Mediterranean than they have been for a long time. Off Italy a few days ago, submarines equipped with nuclear weapons were searched for by Italian submarine reconnaissance aircraft. Also in the Great Belt off Denmark, one of the world's most strategically important shipping lanes, an Akula-II fighter submarine cruised a few weeks ago on its way to the Atlantic.

But submarines loaded with intercontinental ballistic missiles at the Russian submarine base in Vilyuchinsk, dubbed the "Hornets Nest" by NATO, also remain true to their base's name. Satellite images show that the Delta III and Oscar II submarines, which were at anchor on piers just a few months ago, have left in an unknown direction. They could launch their nuclear missiles with minimal warning in the event of a nuclear war.

As an integral part of the nuclear triad (the interplay between submarine-launched nuclear weapons, intercontinental ballistic missiles, and bombers) that guarantees a retaliatory strike in a nuclear war, Russian submarines will continue to cruise the world's oceans with their aging, slow-beaming submarines.