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The Russian Stealth Submarine No Nation Wants to Fight (Especially America)

Kyle Mizokami
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And it has the nickname "black hole".

The Kilo class of submarines were very successful in both a technical and export sense. A submarine meant nearly as an afterthought for Soviet allies became a legend in the eyes of NATO. Fifty-three submarines were built over a period of thirty-three years, often providing Russian shipyards with critical work that kept them open during the lean post Cold War years. In

addition to Russian operations against Islamic State, as tensions in the South China Sea increase the possibility of a naval skirmish, we could see Kilo submarines in action in Asian waters.

Unlike the United States Navy, which went all-in on nuclear power, Russia maintains fleets of both diesel and nuclear-powered submarines. A land power encompassing much of Eurasia, Russian submarines are based much closer to “the action” than American submarines are. While Russia maintains nuclear submarines for distant ocean patrols, its fleet of diesel submarines is more than adequate for conflicts in Europe, the Middle East and the Russian near abroad.

The mainstay of the Russian Navy’s conventionally powered fleet are Project 877-class submarines, known as the Kilo class to NATO and the West. Nicknamed the “Black Hole” submarine by the U.S. Navy, the Improved Kilos are extremely quiet. The class has been built more or less continuously for thirty years, a testament to their effectiveness at sea.

The Kilo class was originally meant to serve the navies of the Warsaw Pact countries, replacing older Whiskey- and Foxtrot-class boats. The sub measures just 238 feet long by thirty-two feet wide, and displace 3,076 tons submerged. The ship has a crew of just twelve officers and forty-one enlisted men, and has an endurance of forty-five days before needing to be resupplied.

The ships are powered by two diesel generators and an electric drive, giving them enough power to make ten knots at the surface and seventeen knots underwater. They are not fast submarines. They have a range of six thousand to 7,500 nautical miles, meaning that from the Russian Northern Fleet headquarters they can patrol for one thousand nautical miles and then go on to Cuba.

Neither are they particularly deep divers. According to *Combat Fleets of the World* , the Kilo class normally dives to just 787 feet, with a maximum diving depth of 984 feet. The submarines do particularly well in shallow water, where a pair of ducted props powered by low-speed motoring motors likely allows it to operate closer to the sea floor.

A lot of silencing went into the Kilos. The hull is described as having the approximate shape of a drop of water and greatly reducing water resistance over older, World War II-era submarine designs. The propulsion plant is isolated on a rubber base so it doesn’t touch the hull, preventing vibrations from turning into noise that can be heard outside the boat. The ship has a rubbery anechoic coating to deaden noise emanating from the submarine, which occasionally gives the submarines a blocky appearance noticeable in photographs. The air regeneration system can keep the crew supplied with oxygen for up to 260 hours, giving the ship almost two weeks’ worth of underwater endurance.

The sensor suite consists of the MGK-400 Rubikon (Shark Gill) low-frequency active and passive radar suite with a passive hull array. It also has a MG519 Mouse Roar high-frequency radar for target classification and mine avoidance. For simple surface navigation and search the Kilos are equipped with the MRK-50 Albatros radar.

Finally, the Kilos have six torpedo tubes of standard 533-millimeter diameter, and were originally configured to carry homing torpedoes and eighteen SS-N-15A Starfish antisubmarine

missiles. On the last ships of the class, two of the torpedo tubes are capable of firing wire-guided torpedoes. Also unique to this class is a position for a seaman with a shoulder-figured Iglá man-portable air-defense missile launcher.

Twenty-four Kilo-class submarines were operated by the Soviet Union, of which eleven are still operated by Russia. One was sold to Poland, which remains operational, but another, sold to Romania, is no longer in service. Ten were sold to India; nine are still operational while the tenth caught fire and sank pierside in August 2013. Iran has three Kilos, and Algeria has two. China had two submarines, purchased after the end of the Cold War.

Submarines were some of the first vessels Russian shipyards started building after the dissolution of the USSR. An improved version of the Kilo class, known as Project 636.3 or just “Improved Kilo,” was developed to rejuvenate a flagging Russian submarine force and gain hard currency from exports.

The 636.3 class was an all-around upgrade. The dimensions of the submarine are essentially the same, but the bow has been reshaped to improve hydrodynamic flow. It features improved quietness due to further isolation of the machinery, moving other machinery to areas where they would make less noise. The submarine also has 25 percent greater range than previous versions. Major sonar systems however are largely the same as in the original Kilo class.

One major improvement of the 636.3 class is the ability to launch Kalibur cruise missiles. Kalibur (the export version is known as Klub) is a versatile class of missile with land-attack, antiship, and antisubmarine warfare versions. In December 2016, the Russian submarine *Rostov-on-Don* launched Kalibur land-attack missiles against Islamic State .

The People’s Republic of China was an early customer for the 636.3, buying ten submarines in the 1990s. The subs are apparently split between the East and South Sea Fleets. Another customer has been Algeria, which has bought two modern Kilos to supplement its pair of original submarines.

Vietnam bought six 636.3 boats, with five so far delivered, as the nucleus of an anti-access/area denial force against its traditional enemy, China. The two countries have a history of mutual hostility, currently stoked by Chinese oil drilling in a contested Exclusive Economic Zone and competing claims in the South China Sea. Vietnam purchased six submarines for an estimated \$1.8 billion dollars—a real bargain.

Finally, Russia bought six 636.3 submarines to shore up its own submarine fleet. The last submarine, *Kolpino*, was launched in February from the Admiralty Shipyard in St. Petersburg. *Kolpino* will serve in the Black Sea Fleet, where it could conduct future cruise missile strikes against ISIS targets. Russia has apparently halted further purchases of the Kilos, seeking to transition to the Lada class.

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