



Russia Developing Challenge to Aircraft Carriers

OE Watch Commentary: The Zircon has not yet been accepted by the Russian military-industrial complex, but its capabilities are being touted. *Moscow Rossiyskaya Gazeta* is a Russian government newspaper, so why the positive write-up if the hypersonic anti-ship missile isn't cleared for production? At this point, it is probably a financial problem. Russia already has anti-ship missiles, torpedoes and mines in its inventory. The Zircon is expensive and there are lots of other important projects awaiting development. The Russian Navy is a green water navy and is never the best-financed Russian armed service. In the expanded article, the author states that the new Yasen-class submarine could carry 40 Zircons and the Antey-class submarine could carry 24. Frigates and other ships can carry up to 16 launchers and Bastion land-based coastal defense units can be upgraded for the Zircon. The Russian government is watching its rubles. The Brezhnev administration spent so much money in an attempt to match the United States, that it broke the system. President Putin lived through that period. **End OE Watch Commentary (Grau)**

“The missile... has a flight speed of Mach 8-10 and is capable of precisely destroying surface targets at ranges of from 500 to 1,000 kilometers or more. The “Zircon” was developed to penetrate existing and advanced ship-based missile defense] and air defense systems.”

Source: Aleksey Leonkov “The Unpredictable ‘Zircon’ Will Challenge the Domination of the Carrier Strike Groups,” *Moscow Rossiyskaya Gazeta*, 6 December 2019. <https://rg.ru/2019/12/06/nepredskazuemyj-cirkon-osporit-dominirovanie-avianosnyh-udarnyh-grupp.html>

The Unpredictable ‘Zircon’ Will Challenge the Domination of the Carrier Strike Groups

Will the Zircon anti-ship missile change the balance of power at sea? Certainly – yes, because its characteristics will end the domination by carrier strike groups for several reasons. First of all, the multifunction integrated radar of the probable enemy’s leading-edge ships and the radar of the ship-based air defense systems will not be able to provide target designations to the weapon systems due to the time constraints of the operation of the pair of “weapons radar” in cases where the detection of the hypersonic anti-missile at a distance of 20-25 kilometers (the visible horizon). The Zircon travels this distance in less than 10 seconds.

Second, if the ships’ radar and the radar of the early radar warning aircraft that have advanced 150 nautical miles from the ship detect the Zircon, then the latest RIM-174 SM-6 ERAM air defense missile with an active- seeker head could be launched against the target at a speed of Mach 3.5. This will not accomplish the interception mission for interception either on a head-on course (the impact velocities should be equal), or by pursuing the target (the speed of the pursuing missile must be 1.5 times greater than the target). In the process, Zircon’s active maneuvering at hypersonic speed will constantly break the RIM-174 seeker head’s lock-on. Dozens of air defense missiles will be required for the interception of one “Tsirkon”, but the interception of our anti-ship missile is not guaranteed even with that expenditure. What is more, the Zircon is a flock missile – several dozen anti-ship missiles will fly to destroy the carrier strike group. The interception of all these missiles would be a nightmare for the shipborne radar and air defense systems which are defending the carrier strike group’s flagship – the aircraft carrier.

Third, the missile doesn’t react to active EW countermeasures. It is practically impossible to break its target lock-on by jamming. So, the probable enemy will have to conduct expensive and many-years of work for the modernization of the shipborne radar and the air defense missiles in order to destroy attacking hypersonic anti-ship missiles....

President Putin stated “In the next few years, we need to actively build up the Navy’s combat capabilities. This largely depends on the planned entry of frigates and submarines, which have been upgraded for the employment of the Zircon hypersonic missiles, into the Navy’s fighting strength. This weapon is becoming extremely important for the maintenance of strategic stability

By 2030, there could ... be more than 500 launchers with Zircon antiship missiles...in the Russian Navy. What will Russian get as a result of this weapon? First of all, an A2/AD [Anti-Access/Area Denial] zone (access and maneuver denial) will extend to a distance of up to 4,000 nautical miles along Russia’s maritime borders. We will be able to finally close our offshore maritime defense zone, and create obstacles for the deployment of Carrier Strike Groups and Formations in the remote naval zone. Second, Zircon will ... impact the probable enemy’s weapons programs. The well-known American Publication The National Interest in the article “Obsolete or A Real Killer: Can We Save the Aircraft Carrier?” ... states that the Zircon will keep carriers in danger because they will be launched beyond striking distance of carrier-based aircraft.

In any case, when Russia developed and introduced controlled hypersonic technology, it was able to change the balance of power that had taken a turn for the worse not only in the nuclear weapons sphere but also in the precision-guided weapons sphere. It created an equilibrium when the number of weapons near our borders that is growing, was balanced by a comparatively small number of high-quality weapons.