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Editors: Sławomir Dębski ● Bartosz Wiśniewski ● Rafał Tarnogórski

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Russia's Status-6 Nuclear Submarine Drone (*Poseidon*)

Marcin Andrzej Piotrowski

In the last six months, new information has emerged about Russia's progress in developing a new type of weapon, the Poseidon nuclear underwater drone, which should enter service in the next decade. Its purposes and capabilities are debated by experts in NATO countries but their analyses frequently omit important experience from the Cold War. In 2018-2021, this drone could become an issue in the U.S.-Russia negotiations on preserving New START and the shape of NATO's ballistic missile defence system.

Official Reports. In 2015, Russian state television showed President Vladimir Putin meeting with military commanders. The images revealed a slide with the description of a "Status-6" system. It contained information about a project involving an underwater drone in the shape of a gigantic torpedo. Thanks to a nuclear reactor engine, its range should reach 10,000 km. Its main strategic purpose would be the elimination of important targets along an enemy's coast and the permanent contamination of huge areas that would become militarily and economically useless. Soon after, the Kremlin declared this had been an accidental disclosure of state secrets, but then Status-6 was further discussed in the government-controlled media. These reports also included a montage of simulated imagery of a 100 Megaton (MT) thermonuclear warhead with the power to cause an artificial tsunami and irreversible contamination because of a cobalt coating, a so-called "cobalt bomb". The Status-6 drone also appeared in Putin's speech in March 2018, when he presented it with some other weapon systems planned by Russia to enter service by 2027. This time, Putin mentioned also a tactical role for the drone, namely against enemy aircraft carrier task forces. In both 2015 and 2018, Russia justified these weapons by the U.S. progress in building various missile defence systems. This summer, Russia also informed it has changed the official name of the drone to *Poseidon* and that it had begun conducting initial tests, showing a video of a prototype (or its mock-up).

The Russian reports could be dismissed as propaganda if they had not been gradually and partially confirmed by the U.S. government. First, even as early as 2015 and before the disclosure of slide, there was a leak from the Pentagon to media about this drone with the NATO codename *Kanyon*. In February 2018, the Pentagon finished the U.S. Nuclear Posture Review and included official confirmation of Status-6's development. Progress in this area was also noted in a report by a Defence Intelligence Agency report published at the same time.

Alternative Hypotheses. The real purposes and parameters of *Poseidon* have been the subject of debate for a few years now among experts from NATO countries. Leading British experts in submarine weapons are following the information suggested by Russia and the U.S. intelligence. According to them, Russia is developing *Poseidon*, even if there are some doubts about its level of advancement, miniaturisation of the nuclear engine, and the type and power of the warhead as declared by Russian media.

According to a second and radical hypothesis, *Poseidon* does not exist at all but is a Russian attempt to disinform decision-makers and public opinion in NATO countries, as well as a propaganda effort aimed at Russian society. This opinion is shared by Russian émigré experts and many analysts of Russia's internal and foreign policies. They stress the staging of the slide disclosure in 2015, Russia's decreasing funds for costly weapons projects, and the intensification of nuclear threats towards NATO countries.

According to a third hypothesis, *Poseidon* is cover for another type of equipment or weapon. Some American and Polish experts assume it is a smokescreen (*maskirovka*) for the development of an ocean-bottom-launched missile or autonomous hunter-killer drone targeting submarines. They also stress that the vessel-platforms for *Poseidon* are assigned to the military unit responsible for testing new submarine equipment, conducting intelligence and reconnaissance, sabotaging underwater cables, and conducting submarine logistic and recovery missions.

Historical Lessons. The idea of a super-torpedo is not new and dates back to the initial period of the Soviet Union's nuclear arsenal, when it was unable to reach U.S. territory. Stalin approved projects of a dedicated submarine and a T-15 torpedo with an electric batteries engine, a mass of 40 tonnes, range of 30 km, and nuclear warheads to destroy naval bases, for instance, those at Pearl Harbor or Gibraltar. In 1954, this project was rejected by the Soviet Naval Command, which preferred submarines with many standard torpedo types or multiple submarine-launched ballistic missiles. In 1961, Andrei Sakharov proposed the concept of a torpedo with a nuclear-powered engine, a huge range, and a warhead of 100 MT. This project came amidst the test of the biggest thermonuclear device in history, the Tsar-Bomb, 58 MT warhead, detonated in 1961. The device had a shape and mass that exceeded the capabilities of the combat aircraft and ballistic missiles of the time. Naval commanders rejected the whole concept and the USSR by then had its first generation of submarines with ballistic missiles and the not-too-distant prospect to arm them with thermonuclear warheads.

Cold War research on the hypothetical effects of a cobalt bomb showed that contamination on a large scale requires the detonation of multiple warheads and a huge amount of cobalt. Also, the effect of an underwater explosion does not always guarantee an artificial tsunami, so from a military point of view, a cobalt bomb has no advantage to classical ("clean") thermonuclear explosions. Moreover, even thermonuclear torpedo attacks made little sense in the context of the almost assured destruction of naval bases during the initial exchange of missile strikes between the USSR and the U.S.

During this period, there were rare cases of Soviet smokescreens and disinformation regarding its strategic arsenal. In 1955, during an air parade over Moscow, there were multiple viewings of the same M-4 bomber group, which NATO attaches recognised as a serial and standard weapon of the Soviet Air Force. In another case, in 1965, mock-ups of a GR-1 missile and staged pictures of their launchers were assessed as a real weapon, even though the USSR was already replacing them with the more successful R-36 missiles. Only after some time and verification from other sources did U.S. intelligence reach the correct conclusions on all these weapon systems.

Current Strategic Context. To gain the full picture of the situation surrounding *Poseidon*, it is necessary first and foremost to look at strategic stability between Russia and the U.S. In the first year of his presidency, Donald Trump criticized his country's continued participation in New START. This agreement was concluded in 2010 and limits the quantity of both powers' nuclear arsenals to 1,550 strategic warheads and 700 means of delivery—land-intercontinental and sea-launched ballistic missiles, and heavy bombers. It expires in 2021 and the text allows for either signatory to withdraw at that time or for both to extend its provisions for another five years. In February 2018, Trump approved a programme to modernise the U.S. nuclear forces, as recommended by the Pentagon and supported by Congress.

However, since Putin's speech in March and the U.S.-Russia summit in Helsinki in July, Trump has expressed some concerns about a new arms race, partially mirroring Russia's arguments. It is clear now that Russia's minimum goal is to extend the provisions of New START beyond 2021, but it might also try to achieve its maximum goal of limiting U.S. plans for the development and deployment of missile defence systems in Europe and Asia, and in space. *Poseidon* is, like some other Russian projects, not included in the New START limits, so it might become an important bargaining chip in future negotiations and compromises with the U.S.

Conclusion. Using open sources, it is hard to settle the expert debate on the real purposes of the *Poseidon* drone. It is highly likely that Russia is indeed developing technologies necessary for such nuclear systems, which does not itself exclude their use in propaganda and disinformation towards NATO publics. Taking into account experience from the past, it is unlikely that *Poseidon* could deliver a 100 MT warhead or be a cobalt bomb. In case *Poseidon* is actually added to the Russian arsenal, it might be more rational to install on it a warhead of up to few MT, which would be useful against strategic targets such as naval bases and coastal cities, as well as tactical targets, such as surface vessel groups and single submarines. However, from the Russian military point of view, still much more attractive and prospective projects are hypersonic ballistic and cruise missiles. All new Russian technologies demand huge investment, and during the New START period, these might become primarily a bargaining chip in the negotiations between Russia and the U.S. *Poseidon*, though, has become part of the American calculations, complicated by Trump's unclear attitude to the future of New START. For NATO countries, it would be particularly unfavourable to see a Russia-U.S. compromise on the Alliance missile defence system. Moreover, Russia's project to develop an autonomous underwater drone shows some gaps and delays have emerged since 1991 in NATO itself, especially in the area of anti-submarine warfare.