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Responding to North Korea's "Tactical Nuclear Attack Submarine"

By Sukjoon Yoon

SYNOPSIS

North Korea has launched an indigenous submarine. It demonstrates Kim Jong Un's intention to develop strategic underwater assets, and ultimately nuclear-powered submarines. How should the US and its allies, especially South Korea, respond to this new threat?

COMMENTARY

On 6 September 2023, at North Korea's Sinpho Shipyard, the North Korean Navy (KWA-Navy) launched a new type of submarine, described as a "tactical nuclear attack submarine" and named "*Hero Kim Kun Ok*" after a historical figure.

At the launch, North Korean leader Kim Jong Un declared that the KWA-Navy, currently rather small and weak, by becoming "nuclearised" would be much more powerful and capable of resisting its enemies, the United States (US), Japan and the Republic of Korea (ROK). Kim is already boasting that this submarine provides a second-strike attack capability, but there are good reasons to doubt such a claim.

Is the Threat Real?

Three things are clear from this development: first, this submarine will likely be the prototype of a *Hero Kim Kun Ok*-class, with more submarines expected to be constructed; second, some 20 ageing Romeo-class submarines will be modernised following the lessons learned from building the *Hero Kim Kun Ok*; third, the KWA-Navy intends to develop a nuclear-powered submarine – [an SSN](#).

The *Hero Kim Kun Ok* is a modified version of the Romeo-class submarine which has been enhanced in two main ways. Its conning tower has been enlarged from 6.4m to

10.4m with the attachment of a missile section, and its length has been expanded to allow the loading of Pukuksong-class Submarine-Launched Ballistic Missiles (SLBMs), KN-23 series mini-SLBMs, Hwasal-2 Long-Range Cruise Missiles (LRCMs), and Haeil torpedoes supposedly capable of carrying nuclear warheads. The range of these weapons covers the Korean Peninsula, parts of Japan, and Guam.

There are some serious technical and operational issues for the *Hero Kim Kun Ok*: the 10m extension has broken the Romeo-class length/width ratio of 10:1, significantly reducing the strength of the submarine when launching SLBMs and LRCMs underwater; its centre-of-gravity will be higher, significantly affecting underwater operation and manoeuvring, so that it will likely prove very difficult to handle; and the superstructural missile section may be unreliable for cold launching missiles. Presumably to address these flaws, *Hero Kim Kun Ok* has port and starboard stabilisers on its conning tower, but this means it will be much noisier than the teardrop design of US submarines such as the Virginia-class SSNs and the next-generation Columbia-class [SSBNs](#).

What is Next?

Many naval experts were expecting North Korea to develop a strategic submarine, so Kim Jong Un's characterisation of the *Hero Kim Kun Ok* as a tactical nuclear attack submarine is significant. It is probably intended as an intermediate phase development, to establish safety and operational parameters, before developing SSNs and SSBNs. Kim's plan is apparently for the KWA-Navy to build nuclear-powered submarines in the near future.

North Korea apparently intends to build as many *Hero Kim Kun Ok*-class submarines as it can, and the website *38 North* reported on 8 September 2023 that the Sinpho Shipyard has another submarine pen suitable for this purpose, and that on 11 September 2023 two ageing Romeo-class submarines were in dry dock for maintenance. These are probably undergoing shape remodeling and engine refits, and one or both of them will likely be moved soon to a larger pen for conversion to *Hero Kim Kun Ok*-class.

What are the Ramifications?

The deployment of North Korea's *Hero Kim Kun Ok*-class submarines in the East Sea (aka Sea of Japan) and the Western Pacific will impact the ROK Navy's current underwater operations as well as its future submarine requirements. North Korea will likely depend on quantity rather than quality in challenging the ROK-US Combined Forces Command. Some naval experts insist, nevertheless, that the *Hero Kim Kun Ok*-class submarines will attempt to implement an Anti-Access and Area Denial (A2/AD) strategy to deter more capable ROK and US underwater assets from operating close to the east coast of North Korea. The *Hero Kim Kun Ok*-class submarines could also perhaps operate in a way similar to the Soviet Navy's "[Bastion Strategy](#)".

Although the weapons carried by the *Hero Kim Kun Ok*-class submarines have a regionally significant range, their technical flaws – especially their noisiness and the

operational weaknesses arising from their ad hoc construction designs – will limit their effectiveness, at least in the near term.

In any case, the ROK and the US need to decide on how to respond to the launch of the *Hero Kim Kun Ok* “tactical nuclear attack submarine”, since the KWA-Navy clearly intends to continue to develop this project, and they may get some assistance from Russia.

Kim Jong Un made a six-day visit to Russia in mid-September, meeting with President Vladimir Putin at Russia’s Vostochny Cosmodrome spaceport. North Korea has begun to play its “Russia card”, not least with respect to China. Kim is assumed to have promised artillery shells and rockets for Vladimir Putin’s war in Ukraine, and, in return, the North Korean side may get help with missile, space, and nuclear technologies. North Korea has tried and failed to launch satellites, and it is currently unclear whether it has mastered ICBM reentry or warhead miniaturisation.

How To Respond?

Reaction in the ROK to the launch of *Hero Kim Kun Ok* has been mixed. Some argue that since the project is obviously half-baked, the best response is further diplomatic pressure against North Korea and Russia, and this seems to be the position of ROK President Yoon Suk Yeol.

Popular media in the ROK take a different view, however, preferring a military response: Kim Jong Un went to Russia to try to obtain sophisticated modern missile and nuclear technologies which China would not provide, so the best way to counter North Korean underwater platforms is for the ROK to build its own.

The ROK is currently building KSS- III attack submarines, and many are now suggesting that these should be propelled by nuclear reactors. Nuclear-powered submarines enjoy much extended endurance for secret underwater operations, and such vessels would be effective in conducting the ROK’s [“anti-exit” strategy](#), as well as for platform-to-platform confrontation between the two Koreas. For the ROK, to construct an indigenous SSN is still a big request for the US, however, and the ROK may prefer to avoid upsetting the ROK-US alliance. Certainly, the US and its other allies have so far been quite cautious in their response to North Korea’s “tactical nuclear attack submarine”.

There are hardliners, both in the ROK and the US, who will use the launch of the *Hero Kim Kun Ok* to argue for serious and escalatory military options, particularly in the light of Kim Jong Un’s obvious desire to acquire missile and nuclear technologies from Russia. The problem which must be faced is not really the rather odd *Hero Kim Kun Ok* submarine, flawed as its military capabilities clearly are, but Kim’s overweening ambition to acquire tactical and strategic nuclear attack capabilities which pose a genuine threat to the ROK, to Japan, to US forces in Korea, to US bases in the Western Pacific, and perhaps eventually to the continental US. Sooner or later North Korea will have more worrying underwater platforms, such as autonomous extra-large unmanned underwater vehicles. This is why the ROK and its allies must decide now on how to deal with Kim’s underwater ambitions before the situation becomes more challenging.

Captain Sukjoon Yoon, ROKN retired, is a senior fellow of The Korea Institute for Military Affairs, Republic of Korea.

S. Rajaratnam School of International Studies, NTU Singapore
Block S4, Level B3, 50 Nanyang Avenue, Singapore 639798
T: +65 6790 6982 | E: rsispublications@ntu.edu.sg | W: www.rsis.edu.sg