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## Background Briefing:

### Vietnam: Evaluating its Fleet of Six Kilo-class Submarines

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Next week the Vietnam People's Navy is going to receive the sixth - and the final - Kilo-class submarine from Russia. We request your assessment about the strength of this fleet and its impact on Vietnam and regionally.

Q1. What is your assessment about the Vietnamese Navy's capabilities after it commissions the sixth Kilo-class submarine from Russia?

ANSWER: Vietnam now has the largest and most modern submarine fleet in Southeast Asia with the delivery of the sixth *Varshavyanka* or Enhanced Kilo-class submarine. Indonesia and Malaysia have two each, while Singapore has four (two are due for retirement).

China has a total of 61 submarines of all types. Its South Sea Fleet has twenty-two, including 16 hunter-killer submarines designed for anti-submarine warfare. China is giving priority to its South Sea Fleet and is providing it with its most modern ships and submarines as they are commissioned into service. All four of China's nuclear ballistic missile submarines or SSBNs are attached to the South Sea Fleet.

Vietnam's *Varshavyanka* submarines are more stealthy than China's and Southeast Asia's submarines. Vietnam's submarines generally have more modern sensors and radar so that they can detect and attack targets at a greater distance. But China is rapidly modernizing its Kilo-, Song- and Yuan-class submarines. All regional submarines are roughly comparable in armament such as heavy torpedoes and anti-ship cruise missiles. Vietnam and China have equipped their submarines for under surface combat.

Vietnam has a long way to go to develop these platforms into an effective subsurface combat force. First, Vietnam will have to meet enormous financial costs involved in maintaining, repairing, and servicing these submarines as well as the costs of training sufficient crews and support staff. Each of Vietnam's submarines needs a crew of 52 to operate, while Singapore needs only 28, Malaysia 31 and Indonesia 36.

Second, Vietnam lacks undersurface warfare experience.

In 1981, Indonesia was the first Southeast Asian country to acquire submarines so it has nearly thirty-five years of experience. But it is Singapore that has the most experience in submarine operations. Singapore acquired its *Challenger*-class

submarines in the mid- to late-1990s and used them to train their crews and develop expertise in undersea warfare. Singapore then acquired the more advanced *Archer*-class submarine for deployment in Southeast Asia's waters. Malaysia took delivery of its first *Scorpene* submarine in 2009 the year Vietnam placed its order for submarines with Russia.

Third, Vietnam has not yet integrated its submarine force into the Vietnam People's Navy and is still developing a doctrine to utilize the military capabilities of its submarine fleet. For example, China has incorporated submarines into naval exercises in the South China Sea for several years while Vietnam has yet to do so.

Vietnam has yet to conduct anti-submarine warfare (ASW) exercises involving its *Gepard*-class ASW frigates and its *Varshavyanka*-class subs. These exercises would provide valuable experience in locating and targeting submarines by the frigates and valuable experience in stealth operations by the *Varshavyanka*-class subs.

Q2. What are the capabilities of Vietnamese submarines now in comparison with Chinese submarines, and with three other countries in Southeast Asia that also possess submarines (Indonesia, Singapore, Malaysia)?

ANSWER: Vietnam is beginning from scratch in developing its submarine force. The *Varshavyanka*-class is more advanced than the *Kilo*-class submarines Russia sold to China. Vietnam's submarines have greater stealth characteristics. But as noted above, Vietnam lacks real life experience in operating a submarine fleet. Vietnamese navy personnel sent to India for training have only undertaken the basic submarine course not more advanced war fighting courses. It is not known at what level Vietnamese submariners have been trained in Russia.

Vietnam also lacks badly needed international experience. Vietnam has not conducted naval exercises with friendly countries to gain additional experience in submarine operations.

Most of China's submarine fleet is much older than Vietnam's submarines although that will change over time as China develops its fleet of nuclear powered attack submarines. Indonesia and Singapore all have plans to modernize their submarine fleets in the coming years. Indonesia will take delivery of South Korea's *Chang Bogo* Type 209 class submarines while Singapore will acquire the Type 218 submarine.

Generally speaking, Vietnam's submarines are larger and slightly faster than submarines currently being operated by China, Indonesia, Malaysia and Singapore.

But there are only marginal differences in other characteristics. For example, the endurance capacity of Vietnam's submarines is around 45 days at sea. This compares with around 50 for the other regional submarine fleets. The same is also true for range – surface travel, submerged at snorkel depth and fully submerged.

Vietnam's *Varshavyanka* has six tubes for firing torpedoes or missiles compared to 9 for Singapore's submarines, 8 for Indonesia and six for Malaysia. All regional submarines have the capacity to launch anti-ship missiles while submerged.

Submarines are good for gathering intelligence. Their stealth characteristics also make them effective weapons in naval warfare. To be effective all naval forces must develop the ability to target the enemy. At the moment, it is unlikely that Vietnam's

submarines when submerged can tell the difference between a Chinese and a Japanese frigate or distinguish between the commercial ships of different flag states. In other words, Vietnam must spend much time developing an acoustic library of ship sounds so it can tell which ships are on the surface.

Targeting becomes important if Vietnam is to use land attack, anti-ship and anti-submarine missiles on its submarines. Vietnam will need an effective link between military satellites and its submarines.

Q3. Given Chinese aggressive military actions in the South China Sea, how will the military power balance in this area change after Vietnam deploys its submarine fleet?

ANSWER: China's People's Liberation Army Navy (PLAN) will continue to expand and modernize at a pace no regional state can match. Vietnam cannot hope to fight a war at sea and win in a conventional naval engagement against China. But Vietnam can provide a deterrent to Chinese aggression by using the stealth characteristics and armament of the *Varshavyanka*-class submarines to inflict major damage on Chinese warships and even Chinese naval bases. For example, once Vietnam has mastered the skill of targeting for its Land Attack Cruise Missiles on its submarines, Vietnam will be able to strike the home ports of the PLAN or other land targets.

#### APPENDIX

Ever since Vietnam took delivery of its first Russian-built enhanced *Kilo* or *Varshavyanka*-class conventional submarines analysts have differed over how quickly Vietnam could absorb these weapons into its navy and create a credible deterrent force to China. For example, Admiral James Goldrick (Royal Australian Navy retired) noted, '(t)he Vietnamese are trying to do something very quickly that no navy in recent times has managed successfully on such a scale from such a limited base... The new boats may have significant numbers of Russians on board for years to come.'[\[1\]](#)

The assessment of whether or not Vietnam can absorb submarines and create a credible deterrent is now becoming clearer with reports by diplomatic observers that Vietnam's submarines are undertaking patrols along Vietnam's coast. More recent press accounts indicate that the Vietnamese submarines have commenced patrols without their Russian advisers. In addition, Vietnamese crews are currently undergoing training at India's *INS Satavahana* submarine center in undersea warfare doctrine and tactics.

The views of defense analysts range from skeptical to cautiously optimistic about Vietnam's ability to develop an effective counter-intervention or area denial naval force to deter China in Vietnam's maritime domain. Lyle Goldstein, a professor at the U.S. Naval War College, for example, has written an analysis of Chinese assessments of Vietnamese military capabilities. Goldstein notes that Chinese defense planners monitor Vietnam's modernization programs 'extremely closely' and have 'ample respect... for Vietnam overall,' including the Vietnamese Air Force.[\[2\]](#)

With regard to Vietnam's *Varshavyanka*-class submarines, Goldstein notes that they can 'deliver lethal blows with either torpedoes or anti-ship cruise missiles.' Nonetheless, Goldstein reports that Chinese analysts have identified two major weaknesses in Vietnam's military strategy: lack of major experience in operating complex weapons systems and 'surveillance, targeting and battle management.'

These weaknesses have led Chinese defense officials to conclude, ‘that China could prevail in any armed clash’ with Vietnam. Goldstein concludes that, ‘Vietnam’s most promising strategy versus China is the hope that it might have sufficient forces for deterrence, while simultaneously pursuing diplomacy to resolve disputes.’

Zhang Baohui, a security specialist at Lingnan University in Hong Kong, reports that China’s military planners are concerned about Vietnam’s submarines. ‘On a theoretical level,’ he notes, ‘the Vietnamese are at the point where they could put them to combat use.’<sup>[3]</sup>

Brian Benedictus offers cautiously optimistic evaluations of Vietnam’s counter-intervention strategy. Benedictus reviews in detail the capabilities of Vietnam’s *Varshavyanka*-class submarines. He concludes that these acquisitions, ‘potentially allows it more options in its power projection towards claims in the South China Sea.’ In his view, Vietnam’s *Varshavyanka*-class submarines ‘have the potential to disrupt enemy ships in a military conflict in a variety of ways,’ particularly as the People’s Liberation Army Navy is weak in anti-submarine warfare.

Finally, Benedictus concludes by stressing the importance of the geographic factor. He argues:

Vietnam is in close proximity to China’s Hainan Province, the island which is harbor to the PLAN Southern Pacific Fleet. It is worrisome enough for Beijing to consider that harbored vessels could be easy prey to submarines off the island’s shores, if conflict took place; the prospect of Vietnam someday having land-attack capabilities integrated into its submarine fleet would be a serious cause of concern.<sup>[4]</sup>

Collin Koh, from the S. Rajaratnam School of International Studies in Singapore, argues that Vietnam will use its submarines in area denial operations off its coast and in the Spratly islands once they become fully operational. According to Koh:

Sea denial means creating a psychological deterrent by making sure a stronger naval rival never really knows where your subs might be. It is classic asymmetric warfare utilized by the weak against the strong and something I think the Vietnamese understand very well. The question is whether they can perfect it in the underwater dimension.<sup>[5]</sup>

Siemon Wezeman, from the Stockholm International Peace Research Institute, goes further to argue that from the Chinese point of view Vietnam’s deterrence is already a reality. According to Wezeman,

The Vietnamese have changed the whole scenario – they already have two submarines, they have the crews and they appear to have the weapons and their capabilities and experience will be growing from this point. From the point of view of Chinese assumptions, the Vietnamese deterrent is already at a point where it must be very real.<sup>[6]</sup>

<sup>[1]</sup> James Goldrick, “Vietnam’s Submarine Fleet,” *United States Naval Institute Proceedings*, 139(9), September 2013.

<sup>[2]</sup> Jane Perlez, “Q. and A.: Lyle Goldstein on China and the Vietnamese Military,” *The New York Times*, July 5, 2014.

[3] Greg Torode, 'Vietnam building deterrent against China in disputed seas with submarines,' Reuters, September 7, 2014.

[4] Brian Benedictus, 'The Wildcard: Vietnam's Naval Modernization and Its Role in the South China Sea,' *Warm Oolong Tea*, February 11, 2013.

[5] Torode, 'Vietnam building deterrent against China in disputed seas with submarines.'

[6] Quoted in Torode, 'Vietnam building deterrent against China in disputed seas with submarines.'

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