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Steel Sharks: China's Growing Submarine Fleet

Loro Horta and Ong Weichong

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Confronted with the overwhelming superiority of the US Navy, China has embarked on an asymmetric naval strategy to mitigate American naval power. Relying heavily on submarines, cruise and ballistic missiles and modern fast attack craft, the People's Liberation Army Navy (PLAN) is fast developing a powerful sea denial capability.

SINCE ADMIRAL Liu Huaqing outlined his global vision for the Peoples' Liberation Army Navy (PLAN) in 1985, the past two decades have been a period of phenomenal growth and change for the PLAN. Key to this vision is the transformation of PLAN's undersea capabilities. The PLAN has since amassed a fleet of some 76 main surface combatants and 57 tactical submarines. No other major navy in the world today boasts such a high proportion of tactical submarines in its fleet (42% of its main conventional striking power). Indeed, the PLAN has made great strides in improving the capabilities and range of its tactical submarine fleet.

Steel sharks

It is evident that China's tactical undersea fleet will be the cornerstone upon which current and future naval ambitions will be built. What is perhaps less obvious to the observer is the rationale behind those ambitions and the utility of its submarine fleet. Like the historic Great Wall, China's undersea wall of tactical submarines serves to protect the territorial unity and integrity of China -- a China that includes the island of Taiwan, which it considers an unalienable part of its territory. Until the sovereignty issue of Taiwan is resolved, securing the littoral waters around Taiwan and possibly the area of operations within the First Island Chain will remain the clear and present priority for the PLAN.

Today the PLA believes that without American interference on the side of Taiwan, it can deal with the Taiwanese military without much problem. Therefore, increasing the costs to the US of intervening in any Chinese action is one of the PLAN'S main objectives in the coming years. Fundamental to the task will be the core of the PLAN's tactical submarine fleet consisting of its recently acquired SSKs (Song, Yuan and Kilo class).

Armed with supersonic SS-N-27B Sizzler anti-ship cruise missiles (ASCMs) and wire-guided and wake-homing torpedoes, the recently acquired Russian-built Kilos can easily remain undetected as they seek to interdict enemy carrier battle groups. Indeed, the PLAN's post-1994 SSKs provide the Chinese with the surgical knives needed to slice open the soft underbelly of a carrier battle group, particularly within the narrow confines of the littoral waters around Taiwan.

China realizes that for the foreseeable future it would not be able to match the US navy in terms of aircraft carriers and other major surface combatants. Therefore, SSKs provide the PLAN with a cost-effective means of neutralizing a carrier battle group or surface task force and temporarily quarantine the island of Taiwan. While eventually the powerful American navy would be able to clear the straits, such an operation would be a slow and risky one.

Swamping the Taiwan Strait

The time it would take to clear the straits of the PLAN's steel sharks may gain the Chinese military precious advantage in a crisis over Taiwan. The slow clearing process will mean that the bulk of the US surface fleet will have to stay away from the straits until it is clear. As noted by a US submarine commander of the nuclear-armed Los Angeles class – the backbone of the US submarine fleet – who was interviewed by the authors: “The Chinese are swamping the straits with submarines. It will take ages to clear them out and no American admiral in his right mind will move an air carrier near.”

According to the Australian diplomat and scholar Peter Howarth in his excellent study on China's submarine force, the PLAN's use of submarines will be further maximized due to limited anti-submarine warfare (ASW) capabilities currently available to the US navy in Asia. While the US navy possesses some major ASW platforms, these are dispersed throughout the world and mobilizing them to deal with a Taiwan contingency may take significant amount of time and preparation.

In November 2006, a PLAN Song class submarine reportedly shadowed a U.S. carrier battle group and surfaced within 5 nautical miles of the carrier USS Kitty Hawk. The incident demonstrates how difficult it is to detect an ultra quiet diesel submarine if it does not want to be found. What the PLAN lacks in terms of carrier strike groups and Aegis-type main surface combatants is offset by its considerable undersea capabilities which are further enhanced when employed in littoral waters around Taiwan.

When combined with the hundreds of missiles deployed in front of Taiwan and the growing air assets available to the PLA, China's ability to inflict damage is indeed impressive. As noted by the same American officer: “Imagine dozens of missiles being fired at you, both on a ballistic and cruise trajectory. It would saturate our Aegis defences and all it may take is one lucky shot to knock out an air carrier.”

Beyond the First Island Chain

In 2002 the PLAN carried its first circumnavigation of the globe followed by an increasing number of long-range naval cruises reaching as far as the North Atlantic. Most observers agree that the PLAN is, however, still confined to the first island chain and is not a true blue water navy. Still, the PLAN'S increasing number of long range naval missions demonstrates that the situation may be fast changing, and that the Chinese navy is growing more confident in its ability to operate outside territorial waters.

Its submarine fleet, like its surface counterpart, is also fast increasing its range of operations and the frequency of its missions. Chinese submarine crews are spending more time at sea and their morale is also being boosted by higher salaries and other privileges. PLAN submarine officers are among the best paid in the Chinese military; a lieutenant serving in a submarine earns 80 percent more than his counterpart in the army. Other inducements include better housing and family support.

The range, duration and complexity of the PLAN'S submarine missions are expected to increase as it deploys its new generation of nuclear attack submarines such as the Type 093 Shang class, which has been in service with the Chinese navy since early 2007. A sign of the PLAN's growing confidence in its submarine force can be seen in the high number of intrusions into its neighbours' territorial waters, with Japan reporting a sharp increase in the number of such incursions between 2004-2006. However, despite major progress, the Chinese submarine fleet still suffers from major deficiencies and many of its submarines are quite old and noisy. Indeed, nearly all of China's submarines that entered Japanese territorial waters were quickly detected. This situation is likely to change in the coming years as more modern submarines enter the PLAN'S fleet.

No one gains

Despite considerable advances, the PLAN's tactical submarine fleet remains primarily a coastal force with a sea-denial capability that is limited to Chinese littoral waters. For the PLAN to develop into a regional force capable of securing the first island chain and beyond, the PLAN must have an undersea capacity that is capable not only of securing the littoral zones around Taiwan but beyond. However, in a Taiwan crisis scenario, the PLAN's submarine fleet in combination with other assets can be lethal. As the costs of a conflict across the straits increase, so should restraint and moderation on the part of all concerned. For in the end it is unlikely that anyone would gain anything from such a tragedy.

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