

Taiwan, Submarines, and Competitive Strategies for U.S.-China Competition

BY HENRY HOLST

In April 2001, the Bush administration agreed to assist Taiwan in its acquisition of diesel electric submarines (“SSK”). Bureaucratic hurdles on both sides of the Pacific torpedoed the process. However, China’s People’s Liberation Army (PLA) modernization over the last few years has reignited Taiwan’s interest in a U.S.-Taiwan SSK deal. This pursuit is now manifested in Taiwan’s *Indigenous Defense Submarine* (IDS) program.¹ Currently, the U.S. is helping Taiwan modernize its two-existing *Seadragon*-class SSKs.² As it stands, Taiwan will be pursuing conceptual designs for the IDS program over the next three years even in the absence of U.S. assistance.

The IDS program has spurred a small but fierce debate over the merits of Taiwan’s submarine aspirations.³ This discussion fails to consider the potential long-run strategic benefits for the United States. Taiwan’s IDS program could spur greater PLA budgetary allocation in an area of favorable U.S.-China technological asymmetry: anti-submarine warfare (ASW). Given the high probability of greater PLA investment in high-end war fighting capabilities, larger PLA spending on ASW is comparatively less threatening to U.S. regional interests than other capabilities within high-technology confines. As such, the U.S. should reevaluate the long-run strategic merits of assisting Taiwan’s pursuit of a submarine program.

Andrew Marshall’s concept of *Competitive Strategies* is at the core of this argument. *Competitive Strategies* are meant to “change a competitor’s decision-making calculus and thus his strategic behavior” in order to achieve, or improve one’s position to eventually achieve political objectives.⁴ Simply put, *Competitive Strategies* seek to manipulate competitor-nations into making less-effective strategic

decisions. Sub-optimal budgetary allocations are an example of this. One *Competitive Strategy* might be increasing spending in areas that you have a competitive advantage in and thereby force the competitor to spend comparatively more to counter you, also known as cost imposition strategies. Yet such manipulation can take many forms, such as revealing previously hidden capabilities, making public statements that play to the competitors’ deep-rooted strategic fears, acquisition decisions, deployment trends, and training programs.⁵

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The most famous example of *Competitive Strategies* occurred during the Cold War, where the U.S. manipulated the USSR into overspending on air defense.⁶ USSR strategic culture’s inclination towards air defense and the bureaucratic power of the USSR’s Air Defense Forces facilitated this *Competitive Strategy*. Greater Soviet spending on air defenses was beneficial for the U.S. because such systems posed less threat on American and European security, and had the dual benefit of depleting Soviet military budgets.⁷ The above-described *Competitive Strategy* was one of several the U.S. targeted the USSR with during the Cold War (others being AirLand Battle, the development of Stealth Aircraft, and the Strategic Defense Initiative).⁸ The possibility of a similar phenomenon exists today in the form Taiwan’s submarine aspirations and PLA investment in ASW.

Long Run Competition

The U.S. and China are in long-term competition.

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While this reality is slow to take hold in Washington, the Chinese Communist Party (CCP) views on sovereignty, territorial integrity, and the ideal nature of the international system differs from the U.S. and other regional states. U.S. Pacific Command (PACOM) Commander, Admiral Harris, is correct in diagnosing Beijing's long-term objective of seeking hegemony in East Asia.⁹

In many areas of this long-term competition the U.S. faces great challenges. Most significant are U.S. defense budgetary woes. Congressional Budget Office' (CBO) Senior Analyst for Naval Forces and Weapons, Eric Labs, one of the most authoritative voices on the U.S. naval budget, wrote in *Proceedings* that,

The tyranny of time, the stubbornness of high shipbuilding costs, and competing fiscal priorities will put pressure on the size and capability of the future fleet...In short, over the next 30 years the Navy faces a slowly unfolding fiscal Pearl Harbor.¹⁰

Although nobody *truly* knows what the PLA spends (the PLA's 2016 budget announcement is "a work of pure fiction"¹¹), let alone how it allocates funds to various services and programs, and how much various platforms cost, one fact is certain; the U.S. is facing an ever-growing challenge in the Western Pacific while its own resources are under great strain. The U.S. cannot afford to achieve deterrence in this competition by outspending across the board. Aging population in the U.S. will soon begin placing greater demands on federal budgets. Labs references CBO estimates that show how,

Between now and 2040...the demands by a growing older population and rising medical costs will increase spending on Social Security and Medicare by 27 percent and 80 percent respectively. But the dedicated revenues that support those programs will remain nearly flat. Because federal deficits over that period will persist and increase the national debt, the CBO also projects that spending on interest will increase for 230 percent; at the same time, revenues from

federal income taxes will increase by only 25 percent. Stiff competition for federal resources will remain a fact of our budget debates for decades to come, and the Navy will not be immune [emphasis].¹²

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The above-circumstance could lead to a situation over time where a smaller Navy may have to fulfill growing demands for presence worldwide, given ongoing friction with Russia, the fight against ISIS, overall middle-east instability, and the cost of forward-presence (generally speaking, only 1/3 of the fleet can deploy abroad while the rest is undergoing maintenance and training). These trends reinforce the fact that we must think creatively to succeed long-term. The U.S. must adopt long-term *Competitive Strategies* in order to safeguard U.S. interests in East Asia.

Therefore, similar to the U.S.-USSR example, viable *Competitive Strategies* that increase PLA spending on capabilities that are comparatively less threatening to U.S. regional interests are necessary. For example, PLA investments in areas such as manpower-heavy ground forces, domestic security, base hardening, air defenses, and securing Internet and communications (ICT) technology, are less threatening to U.S. interests than higher-end *offensive* capabilities like space weaponry, long range missiles with over the horizon targeting, cyber and electromagnetic warfare, large numbers of advanced surface combatants, and superior long-range drones, for example. *Competitive Strategies* should undoubtedly attempt to maximize PRC investment in the afore-mentioned areas rather than the latter.

Yet, given the likelihood that the PLA's *high-technology* (emphasis) force modernization and acquisition will continue in the future, as evident in the PLA's recent reforms, it is necessary to develop a *Competitive Strategy* that focuses on specific capabilities within the confines of PLA's *more-threatening* high-technology investment

areas.¹³ Some of these capabilities are listed in the CRS report below:

China's naval modernization effort is a broad-based effort with many elements. China's naval modernization effort includes a wide array of platform and weapon acquisition programs, including programs for ASBMs, anti-ship cruise missiles (ASCMs), land-attack cruise missiles (LACMs), surface-to-air missiles, mines, manned aircraft, unmanned aircraft, submarines, aircraft carriers, destroyers, frigates, corvettes, patrol craft, amphibious ships, mine countermeasures (MCM) ships, underway replenishment ships, hospital ships, and supporting C4ISR20 systems...China's naval modernization effort also includes improvements in maintenance and logistics, doctrine, personnel quality, education and training, and exercises.¹⁴

Simply put, because sustained PRC investment in high-end *offensive* capabilities is inevitable, the U.S. should discern which capabilities within these areas are comparatively less, and more, threatening to U.S. interests. For example, PLA investment in aircraft carriers is less threatening than if those funds were instead spent on qualitative and quantitative advancements in land-attack and anti-ship ballistic and cruise missiles.

Yet a *Competitive Strategy's* target needs to be viable. It needs to be an already-present institutional behavior or investment that can be indirectly influenced by US actions (there is likely no sure-tactic for the U.S. to spur greater PLA carrier-production). In other words, *Competitive Strategies* seek to push on an open door rather than try to spur an entirely novel action. Influencing a competitor to do more of something they are *already* doing or have a pre-existing propensity for, that the U.S. has a direct method of influencing, has a higher chance of success. In this framework, PLA ASW investment is an ideal candidate-capability for a long-term *Competitive Strategy*.

Spurring greater PLA ASW expenditures would be increasing an already-extent trend.¹⁵ In recent years the PLA has begun to address its longstanding weakness in ASW. Naval War College professor and PLAN expert Lyle Goldstein notes that between 2011 to 2015, the PLAN built 20 ASW-optimized and tow-array equipped type-56 corvettes (picture below), and made advances in ASW-optimized helicopters (Z-18F, Z-20) and SOSUS systems ("Sound Surveillance System").¹⁶

For the United States, although seemingly counterintuitive, increased PLA investment in ASW may be preferential to other potential areas of budgetary allocation. Greater PLA ASW allocation is beneficial because ASW is inordinately expensive, and one of the most complicated areas of naval warfare. It requires long-term investment in human-capital and highly sophisticated technology with no guarantee of end-success. The PLA would be attempting to counter a capability that the U.S. has a longstanding technological, institutional, and personnel advantage in. American SSNs are the toughest targets in the world to find and track, whereas the PLA has a well-known longstanding technological and institutional weakness in ASW. PLA funds spent in ASW will, because of the organizations longstanding technological, institutional, and experiential ASW deficiency, be done less efficiently than in areas where the PLA possesses proven and developed technological and industrial capabilities. Relevant to this argument is Naval War College' Naval Strategist James Holmes point in *Competitive Strategies for the 21st Century: Theory, History, and Practice* that,

Compounding China's difficult maritime geography, the PLA has displayed a curious myopia toward antisubmarine warfare (ASW) and mine countermeasures (MCM), exposing the PLA Navy to low-cost U.S. and Japanese naval operations. This is an odd oversight given the emphasis PLA officers lay on *offensive* submarine and mine warfare. Whatever the case, clearing mines is slow, laborious work, as are detecting and countering stealthy submarines. Chinese

inattention to ASW and MCM will demand years of determined effort and training to rectify, even once the PLA Navy decides to make the effort [emphasis].¹⁷

Relatedly, a Congressional Research Service report on China's naval modernization by Naval specialist Ron O'Rourke notes,

Although China's naval modernization effort has substantially improved China's naval capabilities in recent years, observers believe China's navy currently has limitations or weaknesses in certain areas, including joint operations with other parts of China's military, and antisubmarine warfare (ASW).¹⁸

The technological asymmetry between PLA ASW and U.S. undersea warfare (USW) is comparatively greater than most other areas of the U.S.-China offensive-defensive capability balance. ASW has been called the PLA's "Achilles heel."¹⁹ Although ongoing technological advancements in ASW threaten to erode submarine's inherent stealth and therefore survivability, these advancements also herald new possibilities in the realm of USW.²⁰ As the technological leader in this area, the U.S. is primed to capitalize on these possibilities. Concisely, USW is a quintessential American strength.

The undersea balance is, and will likely continue to be, more in U.S. favor than it is on the surface. Although the vulnerability of U.S. surface forces may be overstated, the proliferation and enhancement of precision strike weaponry poses comparatively greater threats to U.S. surface ships than U.S. submarines.²¹ In 2014, the Office of Naval Intelligence (ONI) noted to the U.S.-China Economic and Security Review Commission that,

China has made the most demonstrable progress in anti-surface warfare (ASuW)...The PLA(N) has also made notable gains in anti-air warfare (AAW)... Although progress in anti-submarine warfare (ASW) is less pronounced, there are indications that

the PLA(N) is committed to addressing this gap.²²

This area of PLA weakness corresponds with an area of U.S. strength; nuclear attack submarines (SSN). U.S. SSNs are arguably the most highly advanced warships on the planet. They are extraordinarily difficult to find and track. MIT Security Studies professor Owen Cote Jr. notes that,

Should the Chinese decide in the longer term to try to counter this capability [Context: US SSNs penetrating PRC near-seas] it would force them into major investments in shallow water ASW against very quiet, fast, nuclear submarines. This is a mission area where the ratio between input and output is among the least favorable, and, even if the investments were made, success would not be guaranteed [emphasis].²³

China has very limited ASW capabilities, and US submarines are the most difficult ASW target in the world.²⁴



Virginia-class SSN. Photo credit: U.S. Navy

Viewing strategic competition through the lens of *Competitive Strategies* changes how one analyzes foreign military developments. Consider the question: in a long-term U.S.-China competition, are PLA dollars spent more

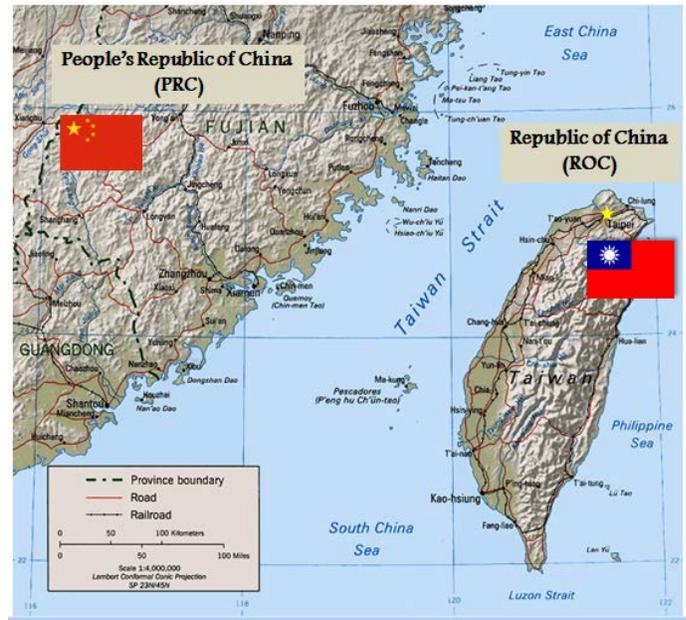
efficiently in areas that they have technological and institutional expertise in, or an area of longstanding PLA technological inferiority? There is a strong argue for the latter. Funds spent in areas where the PLA has a profound technological disadvantage, dearth of related domestic-industry knowledge, lack of institutional knowledge and experience, and likely only nascent training regimens, will likely be done comparatively *less* efficiently than in threatening-areas that the PRC possesses an established, scientifically modern domestic industrial-complex and longstanding institutional experience in.

Taiwan and the IDS program

Taiwan is inherently a large component of long-term U.S.-China competition.²⁵ While many avenues should be pursued to strategically capitalize on U.S. superiority in USW, to say the least about the plethora of other viable *Competitive Strategies* for long-run U.S.-China competition, Taiwan’s Indigenous Defense Submarine program provides an opportunity *outside* the U.S. defense budgets to accomplish this same end. Using the IDS program in a *Competitive Strategy* would impose tolerable costs. Given that Taiwan is the primary driver for PLA force modernization programs, Taiwan is uniquely placed to successfully manipulate long-standing sources of PRC political and strategic anxiety (listed below) and force the PLA to raise investment in ASW:

- Taiwan's military developments that further complicate a cross-Strait amphibious operation (which itself is one of the most difficult military operations to conduct).
- Decreasing PRC political leverage and coercion capabilities stemming from an improved Taiwan security position.
- An inability to seize Taiwan, especially after decades of growing defense budgets, rising domestic expectations that stem from these budgets and a growing sense of China’s military might, and, in turn, the domestic political consequences for PRC leadership

should Taiwan make legal moves toward permanent separation from China.



Taiwan and China.
Photo Credit: Project 2049 Institute

All of these sources of PRC strategic anxiety would be affected by a Taiwan submarine program, which, given SSK’s inherent broad operational capabilities, would be capable of:

- Interdicting PLA forces (at sea and at invasion staging-ports) involved in an amphibious landing campaign
- Conducting close-in ISR
- Deploying Special Forces
- Counter-blockade activities

SSKs have the endurance, range, stationary longevity, and magazine capacity to contribute to a wide range of mission sets, thereby adding a key component to Taiwan’s overall ability to disrupt an amphibious operation at its point of greatest vulnerability: troop loading, and the at-sea transit-period. The logistical issues present in coordinating the loading of hundreds of thousands of men and vehicles onto thousands of vessels in harbors where space is limited, organizing this unwieldy fleet throughout this process, then attempting to guide it across a

strait characterized by unpredictable weather conditions and high current and wind speeds, presents the optimum vulnerability for Taiwan to exploit. Forgoing the forces capable of exploiting the periods of great vulnerability inherent to amphibious operations is ill-advised.

For these reasons, China could not afford to ignore a Taiwan SSK program. Doing so would allow Taiwan to achieve a degree of deterrence, thereby reducing the effectiveness of PRC coercion. Taiwan has been used to justify the PLA's double-digit budget increases over the last few decades, and the Chinese public has come to expect the PRC to assert itself on the world stage. As one of the CCP's top foreign policy priorities, given the implications that Taiwan's SSKs would have on a cross-strait scenario, it would be extremely difficult to argue that a Taiwan submarine program *wouldn't* cause the PLA to increase ASW budgetary allocations.

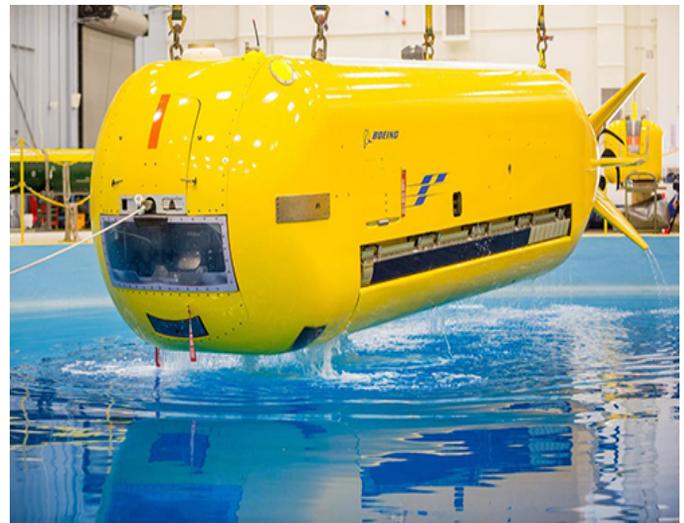
Yet central to this *Competitive Strategy* is whether the U.S. undersea superiority will continue in the future. New detection and stealth technologies are changing the realities of USW. CSBA's Bryan Clark notes that, "today[s] sensor, processing, power, and communication technologies are on the verge of breakthroughs that could revolutionize the capabilities of undersea platforms".²⁶ Clark also notes, however, that such gains go hand in hand with advancing technologies for finding submarines: undersea "big data" (sifting through the oceans background noise to find the smallest of sounds that submarines emit), bouncing lasers and LED lights off submarine hulls, and low frequency active sonar, for example.²⁷

All militaries make bets about the future. The entire concept of *Competitive Strategies* hinges on calculated risks and the acceptance of uncertainty. Johns Hopkins School of Advanced International Studies (SAIS) professor and Center for Strategic and Budgetary Assessment (CSBA) President Dr. Thomas Mahnken notes,

Strategy in peacetime occurs with a greater sense of uncertainty than in war. As Sir Michael Howard famously wrote nearly half

a century ago, planning in peacetime is akin to navigating a ship through a thick fog of peace. Statesmen and soldiers generally have a much lower tolerance for risk in peacetime than they do in war. As a result, they often shy away from actions that could be seen as provocative for fear of exacerbating tensions with a competitor. Finally, it takes longer to determine the effects of one's strategy in peacetime than in wartime. Whereas the impact of one's actions on the battlefield manifest themselves in hours, days, weeks or months, the impact of peacetime actions often does not become apparent for years or more.²⁸

As such, it is impossible to know with certainty whether the end of U.S. undersea superiority is on the horizon. Yet it is key to note that the U.S. would not be a static actor during the above-described technological developments. Rather, the U.S. technological lead in this area imbues it with an inherent advantage in adapting to new undersea war fighting conditions as time progresses.



*Unmanned Underwater Vehicle.
Photo Credit: Boeing*

This past year the U.S. deployed Virginia-class SSNs with unmanned underwater vehicles (UUV) and new Vertical Payload Modules, "bringing the submarine's total load [of Tomahawk Land Attack Missiles] from 12 to 40".²⁹ UUVs are near

impossible to find and track without the use of active sonar. Bryan Clark describes a potential future U.S. SSNs may operate as “mother ships” for swarms of difficult-to-detect UUV’s, all the while maintaining cross-platform communication and thereby creating a true undersea “battle space”.³⁰ This trend appears to be unfolding.³¹ In 2011 US Chief of Naval Operations Admiral John Greenert reinforced this notion, stating,

Submarines will deploy and operate in conjunction with a family of unmanned vehicles and sensors by 2025 to sustain the undersea dominance that is a clear U.S. asymmetric advantage [Emphasis]. Large-displacement unmanned underwater vehicles (UUVs) will deploy from ships, shore, or Virginia-class submarine payload tubes to conduct surveillance missions. With their range and endurance, large UUVs could travel deep into an adversary’s A2/AD envelope to deploy strike missiles, electronic warfare decoys, or mines. Smaller UUVs will be used by submarines to extend the reach of their organic sensors, and will operate in conjunction with unattended sensors that can be deployed from surface combatants, submarines, and P-8A patrol aircraft. The resulting undersea network will create a more complete and persistent “common operational picture” of the underwater environment when and where we need it.³²

Conclusion

Successful employment of this *Competitive Strategy* may lead to a future where ever-greater portions of PLA expenditure on high-end war fighting capabilities are done comparatively inefficiently, with smaller impact on the long-run power balance than would be otherwise. The U.S. should seek a future where U.S. *Competitive Strategies* not only spur PRC investment in areas like domestic security and hardening, but one where ever-growing portions of funds slotted for

high-technology war fighting capabilities are spent in an area of clear U.S. strength and PLA inferiority. A PRC attempt to create an effective, robust ASW capability will prove extremely costly, inordinately difficult, with no guarantee of success. Successful employment of this competition strategy may, over the long run, maintain U.S. strength, and thereby improve the likelihood of achieving future policy objectives. As such, U.S. policymakers should consider the long-term strategic benefits that the IDS program poses for current and future U.S. interests.

The views expressed are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

Endnotes

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