

A POSSIBLE STRATEGY FOR THE DEFENSE OF TAIWAN

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This issue brief examines the possibility of a People's Liberation Army's (PLA) offensive to capture the island of Taiwan from a military perspective. It analyzes the military geography, the threat perception, and the capability of the PLA to launch an expeditionary force across the Taiwan Straits. It looks at the military capabilities of the ROC Defense Forces and suggests a possible military strategy for Taiwan to defend itself from a PLA attack. All this without the direct intervention of the U.S. and her allies in support of the ROC. It concludes that the planning, conduct, and execution of an expeditionary attack, given the present array of forces and indirect support from the U.S. and allies, will not be without significant costs to China. Not only will it cause considerable damage and destruction to mainland China and its military forces, but China risks the possibility of a prolonged slanging match, which may be dear to China's reputation as an emerging superpower.

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Military analysts and strategists around the world have commented on Taiwan's "Porcupine Strategy" as a possible means of defeating a Chinese attack on Taiwan. Comparing Taiwan to a frightened porcupine and China to a predator, a porcupine typically uses its sharp quills as a means to ward off the attacker. When attacked, the quills come off the porcupine's body easily and get embedded into the attacker's skin causing tremendous pain. If the attacker tries to remove the quills, the pain is even more severe and gives time for the porcupine to escape.

More simply, a porcupine strategy looks at employing small, agile, cheap, and affordable weapon systems in small tactical groups across multiple domains to deter a larger adversary. Some may term it akin to asymmetric warfare while others may call it hybrid warfare—a combination of multi-domain, non-kinetic, and kinetic options using both the asymmetric as well as conventional space. This issue brief examines the possibility of a People's Liberation Army's (PLA) offensive to capture the island of Taiwan from a military perspective. It analyzes the military geography, the threat perception, and the

capability of the PLA to launch an expeditionary force across the Taiwan Straits.

Military Geography

Before looking at the strategy, it's important to understand Taiwan's military geography and the battlespace. Taiwan is an island 395 km long and 145 km across at its widest part with a population of 23 million, which mainly resides along the west coast. Taiwan also controls islands in the Pescadores archipelago and Matsu and Quemoy, which are just off the Fujian coast of mainland China. The island is roughly split by a series of mountain ranges running north to south, which average 2000-3000m high, with gentle slopes and grasslands to the west. The east coast is rocky, steep, and rough. Two-thirds of the island is mountainous, an important feature from a defender's point of view. Being in the tropics, Taiwan gets very heavy rains and is lashed by storms and vicious cyclones between April-September, particularly on the east coast.

The island is separated from the mainland by a 160-220 km wide Taiwan Strait in the East China Sea, the Sea of Japan on the North, the Philippine Sea in the East, and the South China Sea to its South East. The Luzon Strait separates it from the Philippines. Geography dictates Taiwan's cities and port locations which are predominantly along the west coast. From a military geography point of view:

- Taiwan is vulnerable to military threats from the west and north. Thus, denying the use of beaches is critical to the defense of Taiwan.
- The slope of terrain towards the beaches forces the attacker to fight upslope.
- The mountains and hills in the center afford cover to Taiwan's Defense Forces and assets against Chinese long-range weapons, air, and missiles.
- Any movement to the east can be denied by

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choking the Straits to prevent being surrounded. In any case, it is not conducive to landing troops and ground forces.

- The weather limits the timing of an operation across the Straits to 6-7 months in a year from September/October to March/April.

Threat Perception

The threat to Taiwan is from a formidable PLA, the world's second-largest and strongest military. The threat is multi-dimensional covering six domains—air, land, and sea as well as cyber, space, and cognitive domains. Of these, cyber and cognitive are played out in the non-kinetic domain and are difficult to quantify or assess and can be set aside for purposes of this assessment. The threats to the cyber and cognitive domains are played out irrespective of the level of threat or escalation and could be underway even today. However, it is possible to analyze and assess the possible threat from the other four domains.

Sea

The primary threat to Taiwan is an expeditionary attack from the sea. An expeditionary operation is a highly complicated maneuver that is the acme of skill in integrated operations by all four services or forces—air, land, sea, and space supported by cyber

and psychological operations. The lead service will be the PLA Navy (PLAN), with land forces carried piggy-back and supported by a well-coordinated firepower attack involving a land-based air-missile campaign, aerial bombardment, and a moving belt of naval gunfire support. The role of the PLA Navy will be to establish complete sea control¹ prior to moving the expeditionary force across the Straits. This will be done with the support of submarines lurking in waters well beyond the second island chain to deter any external intervention into the battlespace.

Air

The role of the PLA Air Force and PLA Naval Air Force will be to establish air supremacy² over the entire battlespace prior to the induction of the expeditionary forces. That will involve the total destruction of the Republic of China (ROC) or Taiwan's air assets, airfields, and missile sites. It will also entail the bombardment of cities and key industrial and infrastructure assets like power stations, rail, and road bridges, communication towers, headquarters, and ammunition storage dumps. The movement of the expeditionary force will be under the umbrella of an air bubble, which guarantees freedom from the interference of enemy air assets.

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The Taiwanese Defense Forces have an imposing inventory of weapon systems. The numbers and quality of weapons is likely to get a boost as U.S. Defense Secretary Lloyd Austin has promised to use the powers of the Presidential 'drawdown' authority of \$1 billion to transfer more weapons to Taiwan as was done for Ukraine. This is aside from the \$14 billion worth of outstanding weapon supplies that have been delayed for various reasons.

Land

The role of land forces commences after a successful landing at the beaches. The most critical part of any expeditionary operation is the beaching of land forces, i.e., tanks, amphibious vehicles, troops, and artillery from ship to shore. It is also the most vulnerable period in an expeditionary operation. Once ashore, the land forces are expected to capture and secure operational objectives. The PLA Ground Forces, largely from the Eastern Theatre Command (ETC) and Central Theatre Command (CTC), have been rehearsing and practicing these drills for a few years in conjunction with the PLA Navy and PLA Rocket Forces.

Space

The growing presence of China in space and its attempt to militarize space has been demonstrated by the PLA. Aside from using space-based weapons, China uses the Beidou Navigation System comprising a number of satellites located in the Geostationary Earth Orbit (GEO), Inclined Geo-

Synchronous Orbit (IGSO), and Medium Earth Orbit (MEO) for navigation, positioning, and targeting by all its weapon systems. It has over 35 Yaogan (remote sensing) and Gaofen (imagery) satellites to provide intelligence, surveillance, reconnaissance (ISR), and communications. China also has the capability to deny the use of space to any adversary and can use space-based weapons to deter any assistance provided to Taiwan from space like ISR, navigation, and positioning. Therefore, complete mastery over the sea and the air is a precondition for the launch of expeditionary forces across the Taiwan Straits.

The Impact of U.S. Intervention

Direct Intervention

Direct intervention by U.S. into the conflict in support of Taiwan will completely tilt the balance in favor of Taiwan. Direct intervention has many forms—launching Carrier Battle Groups that include a fleet of surface and sub-surface vessels against the PLAN, air strikes against PLAN and PLAAF assets, contestation of the control of the electromagnetic space, denial of use of space assets to the PLA and the physical deployment of ground forces on the Taiwan island. Undoubtedly, it amounts to a declaration of a full-scale war between the two superpowers, the consequences of which will be catastrophic for not only the belligerents but the whole world.

***“With over 1,200 tanks, its ability to contest the PLA ground forces on the beaches far exceeds the PLA’s total capabilities to land less than half as many tanks in a single, synchronized lift on the beaches across the Straits.*”**

***“Taiwan’s ballistic and cruise missile inventory, varying from 800-1200 and an additional capacity to increase production by 500 missiles a year of all types pose a sizable threat to the PLA to engage targets at sea and on the mainland.*”**

Indirect Intervention

Indirect intervention would be unconditional military support in all dimensions except direct or kinetic intervention. This could be the provision of equipment and spares, providing ISR, denying and deterring the use of the electromagnetic spectrum and space to the PLA, employment of asymmetric weapons and strategies that afford non-attributability to the U.S., coercion, and subversion against Chinese assets elsewhere in the world and even use of clandestine forces like Special Forces and private military contractors.

Indirect intervention is akin to the U.S. support to Ukraine in the ongoing Russia-Ukraine war. The major difference, however, is the absence of other NATO allies. That can be offset by assistance from like-minded nations like Japan, South Korea, and even the Philippines as well as the activation of the AUKUS alliance (Australia, UK, and U.S.) and the Five Eyes (Australia, UK, U.S., Canada, and New Zealand).

While it is not the intent of this piece to dive into the nitty-gritty of operations, it is sufficient to state that the intervention of the U.S., both direct and indirect, has huge consequences for the PLA in its capabilities to capture Taiwan.

But back to Taiwan.

A Possible Strategy for Defense of Taiwan

In his candid and frank paper to the Hoover Institute on Taiwan's Overall Defense Concept (ODC), Admiral Lee Hsi-min (ret'd) identified four challenges to Taiwan, viz, PLA gray zone aggression, a full-scale invasion, limited resources, and availability of time to prepare and implement the ODC.³

An assessment of threats and geographical factors that assist in framing a possible military strategy for Taiwan against the PLA given these challenges is discussed ahead.

- Ends
 - Deter and deny the PLA capture of Taiwan island.
 - Degrade the PLA to the extent possible and cause damage to China's mainland to severely dent its image as a world-class superpower.
- Ways
 - Deny the ability to control the skies and seas.
 - Retain the ability to absorb PLAs air-missile campaign and prevent the beaching of PLA expeditionary forces.
 - Seamlessly integrate with assistance provided by the U.S. and other friendly forces.
- Means
 - Fight through an intense air-missile campaign by inflicting maximum damage to the Chinese mainland across the Straits.
 - Use asymmetric warfare and weapons like sea mines, sub-surface vessels, drones, and UAVs to destroy and degrade PLAN, PLAAF, and PLANAF assets on the ground, in the air, and at sea.

Given the many pre-conditions necessary for a successful expeditionary operation, the odds of a short, swift, and isolated operation are unlikely. The risk of failure far outweighs the benefits of success for China. It will loathe to get embroiled in a Ukraine-type operation that can seriously undermine the goal of unifying 'lost territories.

- Deny the use of beaches for the landing of expeditionary forces by the employment of mechanized forces, overwhelming firepower of artillery, skillful use of obstacles and engineering, small team operations ("quills") using counter drone systems, shoulder fired missiles like Stingers, Special Forces and Heliborne detachments.
- Finally, prepare to fight urban guerrilla warfare to inflict maximum damage on the PLA.

Taiwanese Defense Forces Inventory

The Taiwanese Defense Forces have an imposing inventory of weapon systems. A list of weapons acquired from the U.S. between 2000 and 2022⁴ includes an impressive array of:

- F-16 aircraft with AAMRAM, AIM9L (Sidewinders), Mavericks and Harpoon-2 family of missiles in the Air Force.
- Apache AH-64 attack helicopters, S-70 Black Hawks, UH-1A Huey Cobra and CH-47 Chinooks in the helicopter fleet.

- M1-A2 Abrams tanks, M-60 tanks and M113 APCs in their mechanized forces.
- TOW2, Stingers, Javelins Anti-tank Guided Missiles in huge numbers.
- M-109 Paladin and M-142 Self Propelled HIMARS MRLs which are capable of massed fires. (The latter have proven their worth in Ukraine.)
- Patriots, MIM-104 PAC 3 Anti-Ballistic Missile Defense Systems.
- E2C-Hawkeye, PC3 Orion AEW&C aircraft for EW.

The numbers and quality of weapons from the U.S. is likely to get a boost as U.S. Defense Secretary Lloyd Austin has promised to use the powers of the Presidential ‘drawdown’ authority of \$1 billion to transfer more weapons to Taiwan as was done for Ukraine.⁵ This is aside from the \$14 billion worth of outstanding weapon supplies that have been delayed for various reasons.

By itself, the Taiwan Defense Forces has 170,000 active-duty personnel and 1.5 million reservists. Its defense budget is \$19 billion for 2023, up by

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15 percent from 2022, essentially to contest the growing Chinese invasion threat. It has an army of an impressive 4 armored, 9 mechanized, 3 marine, and 3 artillery brigades. It has over 300 fighter aircraft and anti-submarine and early warning squadrons in its air force. The navy is small but nimble with 4 destroyers, 4 submarines, over 60 frigates and corvettes and almost 40 fast attack crafts with subsonic and supersonic HF-II and III anti-ship missiles that can play havoc with the PLAN’s troop carriers and landing crafts. Its asymmetric capability includes hundreds of indigenous drones and drone swarms, MQ-9B Sea Guardians and loitering munitions, over 2,000 plus shoulder-fired Stingers, and shallow as well deep-water influence sea mines, including self-propelled mines.⁶ With over 1,200 tanks, its ability to contest the PLA ground forces on the beaches far exceeds the PLA’s total capabilities to land less than half as many tanks in a single, synchronized lift on the beaches across the Straits.

Its arsenal of TOW and Javelin anti-tank guided missiles (ATGMs) can be devastating on the beaches. Its fleet of limited but deadly Apache and Huey Cobra attack helicopters and gunships as well as the Black Hawks can assist in the conduct of Special Operations to great effect.

Taiwan’s ballistic and cruise missile inventory, varying from 800-1200⁷ and an additional capacity to increase production by 500 missiles a year of all types⁸ pose a sizable threat to the PLA to engage targets at sea and on the mainland (see Figure 1).

The key to winning is the ‘quills’, asymmetric warfare capabilities employing small teams of 4-5 men out to sea in dinghies or on the beaches armed with MANPADS like Stingers and controlling drone swarms or acquiring targets for deadly land and air-based Harpoons that can sink PLAN ships across the Straits. It also has the capability to use unmanned surface vehicles (USVs) and unmanned underwater vehicles (UUVs) to sink PLAN ships and submarines.

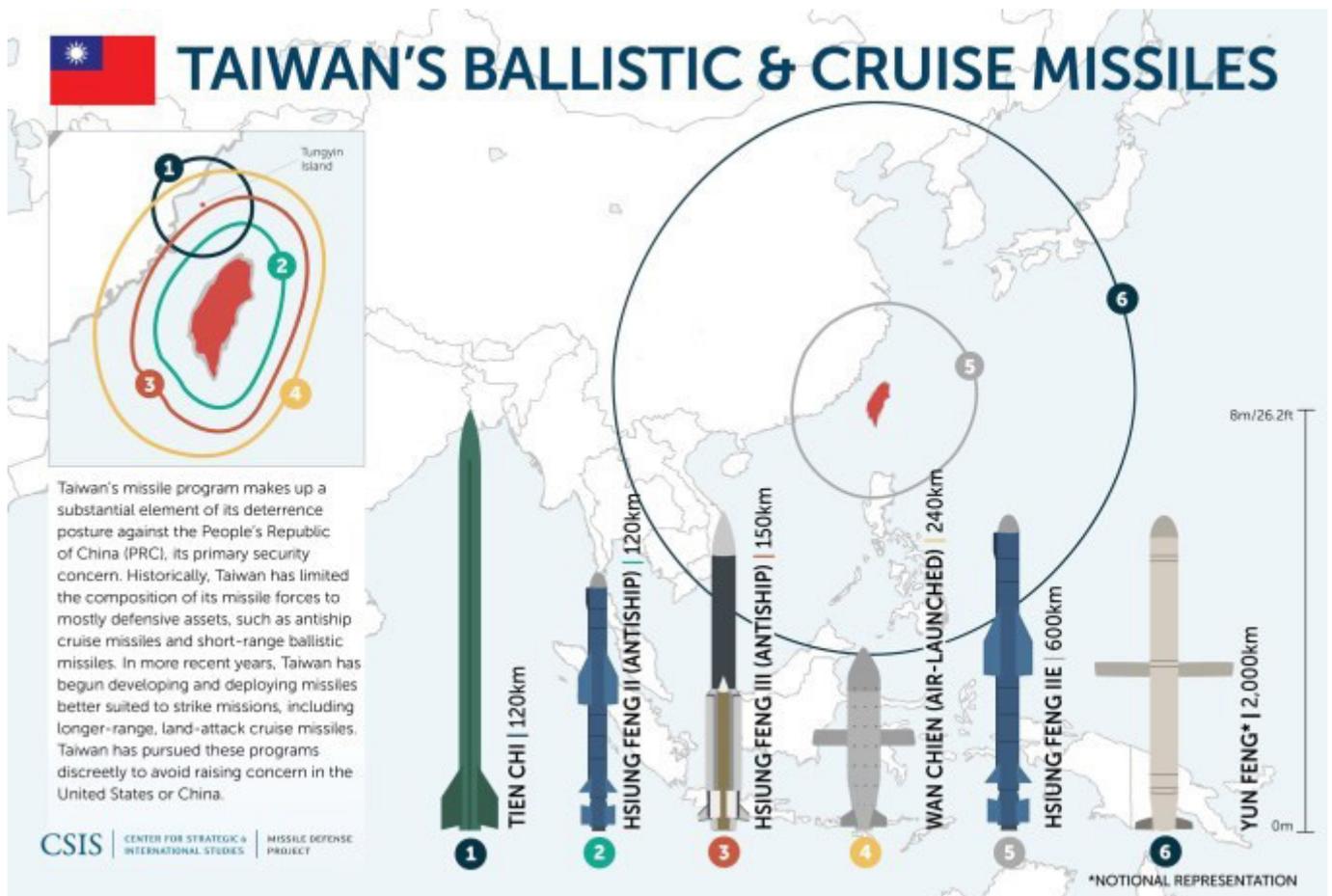


Figure 1: Range of Taiwan's Ballistic and Cruise Missiles

(Source: CSIS, "Missiles of Taiwan", updated August 10, 2012).

According to Admiral Hsi-min, "asymmetric capabilities is to have a large number of small things. They have to be highly survivable and lethal on the battlefield. They might not attract much attention in peacetime, but in wartime, they can be a game changer that decides life or death."

Overall Assessment

Firstly, the battle for Taiwan is not by any stretch of the imagination an easy task for the PLA. Given the many pre-conditions necessary for a successful expeditionary operation, the odds of a short, swift, and isolated operation are unlikely. Further, the risk of failure far outweighs the benefits of success for China. It will loathe to get embroiled in a Ukraine-type operation that can seriously undermine the

goal of unifying 'lost territories. Worse still, it will lay bare the hollowness of a regime that has for decades drummed up a nationalistic fervor about the superiority of the Communist Party and the invincibility of the PLA.

Secondly, the use of force will not be without retaliation from a formidable array of weapons and missiles in the inventory of ROC Defense Forces. The unleashing of a 'porcupine strategy' with its many quills embedded in the PLA has the capability to cause sufficient damage to mainland China. Cross-Strait fires on the Fujian coast or the city of Shanghai, never mind its intensity, and casualties to PLA equipment and manpower, even if a few hundred will be enough for Taiwan to declare a 'notion of victory'.

Thirdly, it is beyond doubt that the PLA will ultimately prevail. That China has the power to obliterate the islands of Taiwan is well within its military capability. Yet many forget to foresee the post-war impact on defeated populations. The PLA risks a long-drawn underground resistance and subversion, which has the potential to embroil the PLA in a guerrilla type of warfare with attendant long-term costs to the Party. The risk of another Xinjiang or Tibet or even a Hong Kong-type of civil unrest is very much a possibility.

All this without factoring in the impact of either direct or indirect intervention by the U.S. and her allies on the outcome of the battle with the PLA.

Author –

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Endnotes

- 1 Sea control means full command of the sea for an extended time over a large part of the theater. Some also term it as full control of the subsurface, surface, and airspace in a maritime operation area for the duration of time desired.
- 2 Air supremacy is that degree of control of the air wherein the opposing force is incapable of effective interference within the operational area using air and missile threats.
- 3 Lee Hsi-min, "Taiwan's Overall Defense Concept: Theory and the Practice," September 27, 2021, https://www.hoover.org/sites/default/files/210927_adm_lee_hoover_remarks_draft4.pdf (accessed May 28, 2023).
- 4 Data from SIPRI, sipri.org.
- 5 Bryant Harris, "Pentagon to use new Taiwan arms transfer authority, similar to Ukraine," *Defense News*, April 7, 2023.
- 6 For details, see "Taiwan Military Strength," https://www.globalfirepower.com/country-military-strength-detail.php?country_id=taiwan (accessed May 29, 2023).
- 7 David Axe, "Taiwan Is Arming Itself To Beat A Chinese Invasion. Some New Weapons Are Better Than Others," *Forbes*, September 13, 2021, <https://www.forbes.com/sites/davidaxe/2021/09/13/taiwan-is-arming-itself-to-beat-a-chinese-invasion-some-new-weapons-are-better-than-others/?sh=11a3e8c32e77>.
- 8 Yimou Lee, "Taiwan wary of China charm offensive ahead of presidential vote – agency," *Reuters*, March 3, 2023.
- 9 Lee Hsi-min, n. 3.