

The Implications Revealed in the Military Simulations Conducted by the US Think Tank CSIS

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The implications of CSIS simulations

The Center for Strategic and International Studies (CSIS), a US think tank, released its “The First Battle of the Next War” military simulation report on January 10, 2023.¹

The CSIS report concludes that the simulations of 24 “conventional” amphibious invasions of Taiwan by China will be defeated by the joint force of the US, Taiwan, and Japan. The results maintain Taiwan's sovereignty but at a very high cost to the US and its allies, with the loss of dozens of ships, hundreds of combat aircraft, and tens of thousands of casualties. This loss would damage the

global status of the US for many years, but China would also suffer enormous losses and fail to occupy Taiwan, which is detrimental to the CCP leadership. That means victory alone is not enough for the US; it must have its deterrence power intensified immediately.

The report begins by stating that while the CCP's invasion plans are still unclear, military action cannot be ruled out, and it would be China's “most dangerous solution” to the Taiwan issue; this makes the topic of invading Taiwan a natural focus of discussion among senior US officials and experts. The report argues that if US intervention can deter an invasion under specific conditions with

1. Mark F. Cancian, Matthew Cancian, Eric Heginbotham, “The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan,” *CSIS*, January 9, 2023, <https://www.csis.org/analysis/first-battle-next-war-wargaming-chinese-invasion-taiwan>.

certain capabilities, it should develop policies accordingly.

CSIS notes that its report is not suggesting that war in the Taiwan Strait is inevitable or bound to occur as the CCP leaders may take strategies such as diplomatic isolation, gray zone pressure, or economic coercion. Dan Grazier, a senior defense policy researcher, believes that China will try to avoid conflict since it would cause the Chinese economy to collapse, so the CCP will tend to use its industrial and economic prowess to challenge the US. In the CCP's 20th Congress, Xi Jinping also said he would strive for "peaceful reunification". However, he still warned that China would not commit to renouncing the use of force, and it still retains the option to take all necessary measures.

There is also concern about how the CCP views the ongoing war between Russia and Ukraine. At the beginning of the conflict, there was concern that a successful Russian campaign might encourage China to take action against

Taiwan. Still, the recent Russian defeat and strong international reaction may also dissuade China from taking the possible risk. And the Russian invasion is a reminder that US deterrence may fail and that these countries may retain their claimed authority to act.

The report also mentions that the US provides Taiwan with the means to defend itself under the Taiwan Relations Act; the recent National Defense Authorization Act (NDAA) also requires the US to help modernize Taiwan's military — a strong sign of long-standing support for Taiwan from both US parties. Although the US claims its "One China" policy has been unchanged, Joe Biden has more than once stated that the US will defend Taiwan if China launches an invasion.²

CSIS believes publicized military simulations will test the necessary conditions for successful deterrence. If the US is to meet the recommendations of the CSIS report, it needs to take action as soon as possible. The actions include strengthening missile defense

2. "War Game Suggests Chinese Invasion of Taiwan would Fail at A Huge Cost to US, Chinese and Taiwanese Militaries," *CNN*, January 9, 2023, <https://edition.cnn.com/2023/01/09/politics/taiwan-invasion-war-game-intl-hnk-ml/index.html>.

capabilities at Japan and Guam bases, switching to smaller, more survivable Navy ships, deploying submarines and long-range bombers (the US Air Force has just unveiled the new B-21 bomber with better long-range deployment capabilities), producing cheaper fighters, and encouraging Taiwan to adopt a similar strategy of defending itself with simpler weapon platforms.

Five assumptions and 24 scenarios of the simulations

The simulation is modeled by historical factors taken from past wars and the Probability of Kill (Pks), which is the effectiveness of weapon systems, to simulate the results of future wars. The CSIS simulation included 24 operational scenarios grouped into five assumptions: “Base”, “Pessimistic”, “Optimistic”, “Taiwan Stands Alone”, and “Ragnarök”. These assumptions are mainly based on the Pks approach, which could lead to the overestimation of the PLA’s speed of the amphibious invasion in the non-public simulations conducted by the US Department of Defense and other institutions. From the historical experience of amphibious operations, Taiwan will be a particularly difficult target. The

successful Allies landing in 1943 resulted from years of preparation and combat experience, which the PLA did not have.

In the “Basic” assumption, the PLA was quickly defeated due to the destruction of ships by US, Taiwanese, and Japanese anti-ship missiles; the “Optimistic” assumption produced the same result, but faster and with fewer casualties. The “Pessimistic” assumption favors the PLA, and the battle lasts longer; in the worst “Taiwan Isolated” assumption, the PLA achieves the ultimate victory. In the “Ragnarök” assumption, the US could not use its bases in Japan as Japan remains neutral.

In all assumptions, losses were high on both sides. The US could only avoid carrier losses in the “Optimistic” assumption since it pushed the fleet forward as a deterrent signal before the conflict began. All sides suffered significant air force losses, but the PLA’s losses differed in various combat situations, as the US only attacked PLA air bases in the “Pessimistic” assumption. The ground force losses depended on the duration of the battle and the number of troops that landed in Taiwan.

The CSIS report states that in its 24 simulated scenarios, it was discovered that

there were four conditions necessary to defeat the Chinese invasion:

1. Taiwanese troops must hold the line of defense

Taiwan's ground forces must be strengthened. Although Taiwan will face serious naval and air losses, so will China. However, there are still chances that some PLA troops could land successfully, and Taiwan's ground forces must be able to contain beachhead positions with powerful counterattacks. The CSIS report believes there are serious flaws in Taiwan's ground forces, and the troops must be better fortified and trained to become the core of the defense.

2. The Ukraine model is not applicable to Taiwan

The US and NATO can keep delivering weapons to Ukraine, which the Russian military cannot stop, but China could isolate Taiwan for more than a few weeks. The report argues that Taiwan must be able to fight instantly with everything it needs, so the US must work together with Taiwan to provide the weapons the island needs in peacetime; if the US decides to assist Taiwan in wartime, it must quickly engage in direct combat.

3. The US must use its bases in Japan to fight

Taiwan must strengthen its military and diplomatic relations with Japan. While other allies such as Korea and Australia are important in the broader regional conflicts and may also play a role in defending Taiwan, Japan is the most prominent since US combat aircraft cannot function effectively in wartime without access to its bases in Japan.

4. The US needs to strike the PLA Navy quickly and intensively from outside the Chinese defense circle

The US needs more long-range anti-shiping cruise missiles and bombers that can carry such weapons to reduce its military losses effectively. The US Navy needs smaller ships, and so does the Taiwan Navy.

The report also hints that both the US and Taiwan should be prepared for possible military action by China. Taking the Russia-Ukraine war as an example, the report by the British think tank RUSI points out that the Ukrainian army has long taken the Russian invasion into account, so their war plans to military exercises all take the Russian invasion as an assumption.

The same is true for Taiwan. Although war is not inevitable, the accelerated pace of China's military buildup may increase its chances of success in its ventures. The CCP is indeed increasing its military pressure on Taiwan through gray-zone operations. Taiwan's elevation of its military preparation would at least deter China's ambitions and send a message to the CCP that its military attempts would be significantly more costly and the results unpredictable, thus reducing its intentions to launch military actions.

The simulations suggest the US and Taiwanese forces to improve survivability

The purpose of the simulations is to provide a reference for US policymakers. The report points out that the simulations have different purposes, not just for testing the "highly likely" situations. They also staged "fictional scenarios" to see if the US forces could utilize other available military means to help evaluate relevant weapons capabilities and the structure of military units. The simulations can also put innovative combat concepts to the stress test. RAND senior analyst David Ochmanek also pointed out that even

if a simulation results in a US failure, it does not necessarily reflect the real-world war situation but is intended to assess the vulnerability of the US forces. Even the most pessimistic assumptions do not constitute the most likely outcome. The simulations are designed to educate participants and allow US officers to understand the potential for future conflicts as the US military is used to enjoy the advantage on the battlefield.

The CSIS also advised the US government not only to update and complete its arsenal but also to strengthen combat capabilities and deployment. The report found that the US Air Force is facing a dilemma: being too far from Taiwan won't be effective, but being too close would expose itself to the threat of Chinese missiles. The Anderson Air Force Base in Guam is about 2,800 kilometers from Taiwan, too far for multiple sorties in a short period; it cannot substitute the Japanese bases and does not have fortified hangers and other defensive facilities.

CSIS also believes that the US Navy should use smaller, more stealthy ships, deploy expendable unmanned drones to accompany carrier strike groups and act as decoys, and build more submarines; the US Air Force should maintain its bomber

fleet, such as the B-1, for a possible US-China conflict by 2030, and ensure that all aircraft types are equipped with AGM-158C long-range anti-shiping missiles. If the Air Force fleet can launch long-range weapons outside the war zone, stealthiness will become less relevant, making producing more low-cost fighters possible. Since the next-generation fighters cost hundreds of millions of dollars each, it makes no sense if most of them would be destroyed on the ground.

Many Washington military simulation results have also offered recommendations about the US military deployments in the Pacific. For example, a simulation conducted by the US Air Force in 2021 about the possible conflict in the Taiwan Strait in 2030 concluded that it's necessary to deploy unmanned "loyal wingmen", a large number of small drones, and bombers with long-range weapons to adopt "agile combat employment" (ACE) in order to reinforce remote island airports, spread out fighters deployed, and stockpile supplies in advance. Clint

Hinote, Deputy Chief of Staff of the US Air Force, believes that the next war can only be prevented if it can be won.³

The CSIS report also reiterated that Taiwan should adopt the "Porcupine Strategy" that focuses on agile, concealable weapons and invest more in easily portable weapons such as Javelin and Stinger missiles. In addition, shore-based anti-ship missiles for coastal defense, missile boats, and minelayers are also recommended for their survivability against Chinese air attacks and ability to counter Chinese surface ships effectively. The mobile anti-air missiles are effective against aircraft, and their survivability is also desirable.

The report argues that Taiwan can maintain strong naval and air power to counter China's efforts to challenge Taiwan's sovereignty in peacetime. Still, as the PLA's naval, air, and missile forces keep growing, it's impractical for Taiwan to maintain a military power with a comparable scale. The report also mentions that China may use gray-zone

3. "A US Air Force War Game Shows What the Service Needs to Hold Off — or Win Against — China in 2030," *DefenseNews*, April 12, 2021, <https://www.defensenews.com/training-sim/2021/04/12/a-us-air-force-war-game-shows-what-the-service-needs-to-hold-off-or-win-against-china-in-2030/>.

pressure and other methods; even if it chooses to use force against Taiwan, it could be for a blockade, which is not in the conjecture of CSIS or other think tanks. In response to China's gray zone operations, it is still necessary for Taiwan to have naval and air forces with certain capabilities and to adopt flexible combat doctrines to deal with the disturbance by the Chinese military aircraft and warships.

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