



**SOUTH CHINA SEA STRATEGIC SITUATION  
PROBING INITIATIVE**

**An Incomplete Report on US Military Activities  
in the South China Sea in 2021**

**SCSPI**

March 2022

## About SCSPI

With a view to maintaining and promoting the peace, stability and prosperity of the South China Sea, we launched the South China Sea Strategic Situation Probing Initiative (SCSPI). The Initiative aims to integrate intellectual resources and open-source information worldwide and keep track of important actions and major policy changes of key stakeholders and other parties involved. It provides professional data services and analysis reports to parties concerned, helping them keep competition under control, and with a view to seek partnerships.

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## Preface

In peacetime, the conduct of highly-intensified military activities in another coastal state's surrounding waters, such as thousands of close-in reconnaissance operations and hundreds of military exercises, is a clear violation of the spirit "maintaining international peace and security" of the UN Charter and "the peaceful uses of the seas" of the United Nations Convention of the Law of the Sea.

Since 2009, US military activities against China have strengthened in terms of the frequency and intensity. In 2021, there was a sharp rise in the US armed forces' operations in the South China Sea compared with that in 2020, which poses increasingly high risks of China-US friction and conflict in the air and at sea.

In 2021, the US military strategy and operation on the South China Sea is featured by deterrence----strengthening forward military presence and targeted activities, to deter the imaginary "China might overreach". However, over-deterrence will stimulate China's decisive countermeasure, thus inevitably be backfired. In the future, deterrence and counter-deterrence, provocation and counter-provocation will be most critical strategies and tactics of US-China maritime interaction.

US military's presence and operations in the South China Sea are the major factor affecting South China Sea situations. Since 2019, *South China Sea Strategic Situation Probing Initiative* (SCSPI) has released a yearly report *An Incomplete Report on US Military Activities in the South China Sea*. The report is intended for promoting the transparency of South China Sea Situations and providing the perspective of a third-party think tank for reference to government departments, research institutions, media and the public of related parties.

Director of SCSPI  
**Hu Bo**



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# An Incomplete Report on US Military Activities in the South China Sea in 2021

## SCSPI

In 2021, as the US placed great emphasis on military deterrence against China, the US armed forces maintained a high tempo of military activities in the South China Sea, such as close-in reconnaissance operations, Taiwan Strait transits, forward presence, strategic deterrence, “freedom of navigation operations (FONOPs)”, military exercises and drills, and battlefield preparation. Specifically, large reconnaissance aircraft conducted nearly 1,200 close-in reconnaissance sorties over the South China Sea, several of which came close to only around 20 nautical miles away from China’s baselines. The US carrier strike groups (CSGs) and amphibious ready groups (ARGs) entered the South China Sea 12 times, more than twice the frequency in 2020. At least 11 nuclear-powered attack submarines (SSNs) deployed to the South China Sea and its surrounding waters throughout the year, among which the *Seawolf*-class fast-attack submarine USS *Connecticut* (SSN-22) even “struck an underwater mountain” in the northern waters of the South China Sea. In addition, with a significantly stronger focus on China, the US military has given more emphasis to “great power competition” with respect to strategies, tactics, concepts of operations (CONOPS) and weapons research and development.

## **I. Significantly Intensified Strategic Platforms' Activities**

In 2021, the US military deployed 4 CSGs, 2 ARGs, 11 SSNs, and conducted 22 Bombers. These strategic platforms' frequent deployments to the South China Sea demonstrated the US's obvious intention of deterrence against China.

### **1. CSGs**

The US military further intensified its activities in the region to nearly double that of 2020. In 2021, a total of four CSGs led by the USS *Theodore Roosevelt* (CVN-71), USS *Nimitz* (CVN-68), USS *Ronald Reagan* (CVN-76), and USS *Carl Vinson* (CVN-70), and two ARGs led by the USS *Makin Island* (LHD-8) and USS *Essex* (LHD-2) were deployed to the South China Sea for 12 times. Their activities showed the following features:

Table 1 Activities of the US military's large platforms in the South China Sea in 2021

No.	Date	Fleet
1	January 23-29	<i>Theodore Roosevelt</i> CSG
2	February 5-9	<i>Nimitz</i> CSG
3	February 8-17	<i>Theodore Roosevelt</i> CSG
4	April 4-12	<i>Theodore Roosevelt</i> CSG
5	April 8-12	<i>Makin Island</i> ARG
6	June 14-18	<i>Ronald Reagan</i> CSG
7	September 1-5	<i>Essex</i> ARG
8	September 5-13	<i>Carl Vinson</i> CSG
9	September 24-27	<i>Ronald Reagan</i> CSG
10	October 4-8	<i>Carl Vinson</i> CSG
11	October 24 - November 3	<i>Carl Vinson</i> CSG
12	November 4-7	<i>Carl Vinson</i> CSG

**Firstly, the frequency of activities was sharply increased with an obvious focus on China.** In 2021, a total of four CSGs, namely the *Theodore Roosevelt* CSG, *Nimitz* CSG, *Ronald Reagan* CSG, and *Carl Vinson* CSG, entered the South China Sea 10 times. Compared with the three CSGs deployed in 2020, the intensity of activities nearly doubled, and the force configuration was further enhanced. These US military platforms conducted dual-carrier drills and CSG-ARG joint expeditionary strike force operations, and carried out joint exercises with US allies and partners. Generally, the US CSGs stayed in the South China Sea for four or five days, no longer than 10 days. While operating in the South China Sea, one of the priorities of their activities was to conduct joint exercises

and drills with other naval and air forces, including ships, bombers and aerial refueling aircraft. In addition, the US CSGs maintained a long-term presence in the Philippine Sea to explore how to better involve in potential regional flashpoints against China's anti-access capabilities.



Fig. 1 On April 9, the *Theodore Roosevelt* CSG and *Makin Island* ARG conducted joint expeditionary strike force operations in the South China Sea

**Secondly, in 2021**, the US CSGs' activities in the South China Sea were defined by their rapidness and irregularity. Generally, the US carriers came in and out of the region very fast followed by sudden returns for several times, which demonstrated a focus on preparing for real combat. For example, from October 24 to November 7, the USS *Carl Vinson* entered and exited the South China Sea twice while operating around the Spratly Islands and rapidly sailing through key straits. It was suspected of exercising a rarely seen circuitous tactic surrounding the Spratly Islands. The US CSGs also put stronger emphasis on straits and channels among Philippine islands such as the San Bernardino Strait, the Mindoro Strait and the Balabac Strait, yet using the Bashi Channel less frequently. In fact,



the US CSGs were exercising how to survive and operate under extreme circumstances, which also demonstrated the US military’s emphasis on real combat preparedness. According to *Carl Vinson* strike group commander Rear Adm. Dan Martin, “Once you even get close to the South China Sea, you can bank on Chinese ships coming out to meet you and escort you in. You never make a move without an escort, which is why we try to make some moves that are unpredictable to try to scrape off some escorts,” he said, adding that he tried to keep the carrier traveling at 25 knots or faster through the South China Sea to remain unpredictable.<sup>1</sup>



Fig. 2 Tracks of *Carl Vinson* CSG from October 24 to November 5

**Thirdly, the US Navy actively tested its fifth-generation fighters for real combat.** In August 2021, the USS *Carl Vinson* CSG was deployed to the Western Pacific, which was the first of the US aircraft carriers to

deploy with the most advanced F-35C strike fighters and CMV-22B carrier onboard delivery aircraft. Once praised as the “air wing of the future”, the F-35C provides combatant commanders unrivaled battlespace awareness and stronger power projection capability with integrated active and passive sensors. During their activities in the South China Sea, the F-35C fighters conducted a number of exercises such as carrier-based aerial refueling and formation flying. In late August, the F-35C fighters, along with US Air Force B-52H, conducted a joint anti-access/area denial (A2/AD) mining exercise to the north of Guam.



Fig. 3 The F-35C and B-52H conducted a joint exercise north of Guam

**Fourthly, littoral combat ships joined CSG operations for the first time.** On September 7, the USS *Tulsa* (LCS-16) littoral combat ship joined the USS *Carl Vinson* CSG in the South China Sea for joint operations. The

integration marks the first time an LCS has operated as part of a carrier strike group in the US 7th Fleet area of responsibility.



Fig. 4 USS *Tulsa* (LCS 16) joined *Carl Vinson* Carrier Strike Group (VINCSG) during presence operations in the South China Sea, September 7

Compared with the US Navy’s other surface combatants, littoral combat ships provide unique advantages in near shore combat of faster access to regional confrontations, with the flexible combination of task modules and superior mobility. In 2021, the US military increased the deployment of littoral combat ships in the Western Pacific to a new record of three, including USS *Tulsa* (LCS 16), USS *Charleston* (LCS-18) and USS *Jackson* (LCS-6). According to the commander of the US 7th Fleet, the figure may be increased to eight in 2022.<sup>2</sup> Further integration of littoral combat ships with carriers are therefore expected.

## 2. Bombers

In 2021, the US Air Force (USAF) dispatched a total of 22 B-52H Stratofortress or B-1B Lancer sorties for 14 operations over the South China Sea, which highlighted the concept of “dynamic force employment”.

It also conducted joint exercises with the armed forces of Japan, Malaysia and Indonesia.

Table 2 Activities of the US bombers in the South China Sea in 2021

No.	Date	Bomber	Sorties
1	January 1	B-1B	2
2	January 25	B-52H	2
3	January 31	B-1B	2
4	February 8	B-1B	2
5	February 23	B-52H	2
6	April 21	B-52H	1
7	April 25	B-52H	2
8	April 30	B-52H	2
9	September 2	B-52H	2
10	September 5	B-52H	1
11	September 24	B-52H	1
12	October 16	B-1B	1
13	October 17	B-1B	1
14	October 21	B-1B	1

### 3. SSNs

Based on the limited information publicly released, the US military deployed at least 11 SSNs to the Western Pacific, including the South China Sea, for strategic patrols, namely the USS *Connecticut* (SSN-22), USS *Chicago* (SSN-721), USS *Key West* (SSN-722), USS *Oklahoma City* (SSN-723), USS *Ohio* (SSGN-726), USS *Asheville* (SSN-758),

USS *Jefferson City* (SSN-759), USS *Springfield* (SSN-761), USS *Charlotte* (SSN-766), USS *Hampton* (SSN-767), and USS *Illinois* (SSN-786).

It is worth noting that the USS *Connecticut* struck an undersea mountain on October 2 during patrols in the South China Sea and as a result, more than 12 sailors were injured. The commanding officer, executive officer, and Chief of the Boat were fired following the investigation that the accident was caused by human errors.<sup>3</sup> The accident reflected the effects of fatigue as a result of the US Navy’s high operational tempo, including in the South China Sea.

Table 3 The US SSNs operated in the South China Sea and surrounding waters in 2021

No.	SSNs
1	USS Connecticut (SSN-22)
2	USS Chicago (SSN-721)
3	USS Key West (SSN-722)
4	USS Oklahoma City (SSN-723)
5	USS Ohio (SSBN-726)
6	USS Asheville (SSN-758)
7	USS Jefferson City (SSN-759)
8	USS Springfield (SSN-761)
9	USS Charlotte (SSN-766)
10	USS Hampton (SSN-767)
11	USS Illinois (SSN-786)

## **II. Further Expanded Close-in Reconnaissance**

In 2021, the US military maintained highly intensive close-in aerial and maritime reconnaissance and surveillance in the South China Sea. According to incomplete statistics, reconnaissance aircraft conducted around 1,200 reconnaissance sorties over the South China Sea. In the meantime, US ocean surveillance ships and oceanographic survey ships conducted frequent operations in the waters for a total of 419 ship-days at sea.

### **1. Aerial reconnaissance operations**

In 2021, there was a sharp increase in the intensity and frequency of the US military's close-in aerial reconnaissance around China. According to incomplete ADS-B statistics, the US military conducted nearly 1,200 reconnaissance sorties over the South China Sea, an increase of over 20 percent compared with that in 2020. These included U-2S high-altitude reconnaissance aircraft, RC-135 reconnaissance aircraft, WC-135W Constant Phoenix, E-3B airborne warning and control system (AWACS), E-8C joint surveillance target attack radar system (JSTARS), P-8A and P-3C anti-submarine aircraft, EP-3E Aries II reconnaissance aircraft, RQ-4B Global Hawk and MQ-4C Triton high-altitude unmanned reconnaissance aircraft dispatched from a number of air bases including Misawa and Yokota in Japan, Kadena Air Force Base in Okinawa, Andersen Air Force Base in Guam, and Clark Air Base in the Philippines. According to the statistics disclosed by Senior Colonel Wu Qian, spokesperson of the Ministry of National Defense of China, since the Biden administration took office, the number of activities conducted by the US surveillance aircraft



in the sea areas around China has increased by more than 40 percent compared to the same period of 2020,<sup>4</sup> which was a proof that the real situation was much more severe than what ADS-B statistics had shown.

There were new records of the monthly and daily reconnaissance sorties as well as the distance to China's airspace. First, the monthly reconnaissance operations hit a new record. According to ADS-B statistics, the US conducted a total of 94 sorties with large reconnaissance aircraft for close-in reconnaissance over the South China Sea in November. Specifically, the P-8A anti-submarine aircraft accounted for nearly 80 percent of all sorties. Second, in terms of daily reconnaissance operations, on November 4, as many as 10 sorties of reconnaissance aircraft were dispatched for reconnaissance operations during the USS *Carl Vinson* CSG's deployment in the South China Sea, setting a new record for the number of daily reconnaissance operations. Third, the US continuously set new records of the distance of its reconnaissance aircraft from China's territorial sea baseline, posing increasingly high military risks. According to incomplete statistics, as many as 22 sorties of US aircraft came within 30 nautical miles from the China's territorial sea baselines. Specifically, on March 22, a RC-135U reconnaissance aircraft reached a location that was only 25.33 nautical miles away from China's territorial sea baseline. On September 4, a RC-135S Cobra Ball ballistic missile-detection reconnaissance aircraft came close to Jiaozhou Bay of Shandong Province for close-in reconnaissance, with the nearest point less than 20 nautical miles from China's territorial sea baseline. On November 29, a P-8A anti-submarine aircraft transited the Taiwan Strait, during which it once came around 15.91 nautical miles from China's territorial sea baseline.

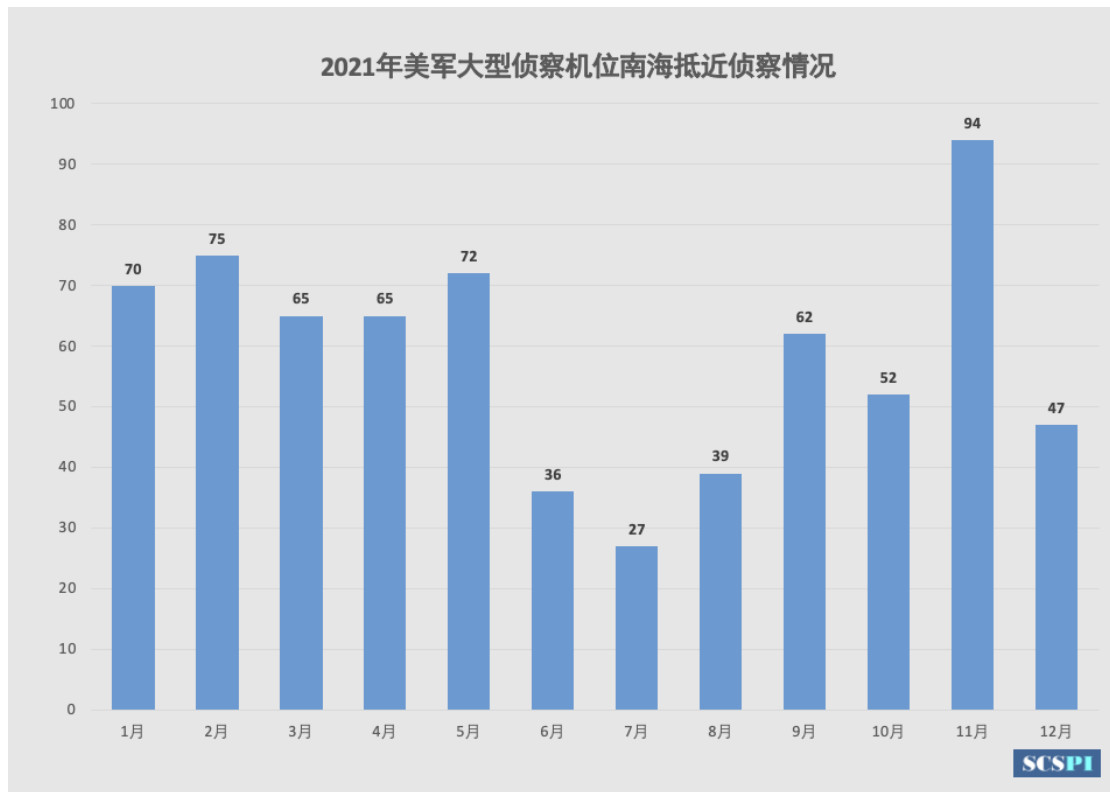


Fig. 5 The US large reconnaissance aircraft's close-in reconnaissance operations in the South China Sea in 2021

## 2. Maritime reconnaissance activities

US reconnaissance ships mainly conducted two types of reconnaissance activities around China: ocean surveillance ships focused on inspecting underwater targets and supporting anti-submarine warfare, and oceanographic survey ships focused on exploring underwater topography and marine meteorology and hydrology.

### (1) Ocean surveillance ships

In 2021, US ocean surveillance ships continuously intensified their activities. The US military's five ocean surveillance ships, namely the USNS *Victorious* (T-AGOS 19), the USNS *Able* (T-AGOS 20), the USNS *Effective* (T-AGOS 21), the USNS *Loyal* (T-AGOS 22) and the USNS *Impeccable* (T-AGOS 23), all conducted operations in the South China Sea.



The total duration of their activities in the South China Sea reached 372 ship-days at sea, which means on average at least one US ocean surveillance ship was operating in the waters every day throughout the year. Their activities demonstrated the following features:

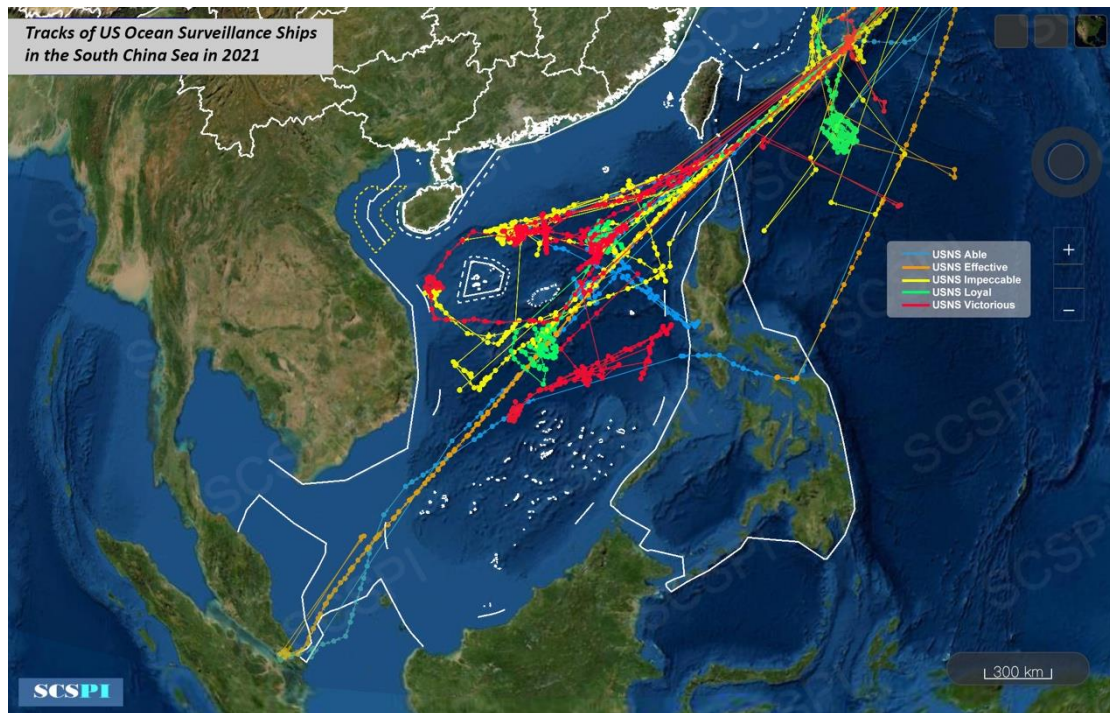


Fig. 6 Tracks of five US ocean surveillance ships in 2021

**First, the Paracel Islands and Macclesfield Bank have become the US Navy’s surveillance priority.** Judging from the tracks of US ships, a large number of reconnaissance activities were carried out in the waters around the Paracel Islands and Macclesfield Bank. With a depth of over 2,000 meters and complex hydrological environment, the sea area is ideal for underwater and anti-submarine combats. By continuously sending ocean surveillance ships to operate in such waters, the US military is mainly preparing for potential underwater combat in the region.

**Second, in view of the operating model, the US Navy is gradually normalizing its deployment of ocean surveillance ships in the South China Sea.** In 2021, at least one ocean surveillance ship was operating in

the South China Sea every day throughout the whole year on average. In terms of the rotation, an ocean surveillance ship would only leave after another one had come to ensure a near persistent presence. Each ocean surveillance ship would spend 10 to over 40 days in the South China Sea.

**Third, ocean surveillance ships were actively integrated into the US combat system for effective collaboration with other platforms.** When the US Navy's ocean surveillance ships operated near the Paracel Islands and Macclesfield Bank, US guided missile destroyers and P-8A anti-submarine aircraft would also appear nearby to provide cover and support. There was a certain level of collaboration among ocean surveillance ships as well. For instance, from February 15 to March 28, the USNS *Impeccable* and the USNS *Loyal* were respectively stationed at the east and west ends of the Bashi Channel, conducting joint surveillance on this important waterway.

**Fourth, their activities were increasingly targeted and expanded.** As shown in the picture, the points clustered are the region of interest. Compared with previous years, a new feature shown in 2021 was that the operating areas of the US ocean surveillance ships further expanded into waters west of the Paracel Islands and southeast of the Pratas Islands.

Moreover, the US further stepped up forward deployment in the South China Sea. On November 20, the USNS *Able* ended its operations in the South China Sea and ported in Subic Bay of the Philippines for the first time in 2021.

## **(2) Oceanographic survey ships**

In 2021, the USNS *Bowditch* (T-AGS 62), the USNS *Henson* (T-AGS 63) and the USNS *Mary Sears* (T-AGS 65) oceanographic survey ships successively conducted operations in the South China Sea, among which

the USNS *Mary Sears* was particularly active.

From August 20 to September 6 and from September 29 to October 6, the USNS *Mary Sears* conducted intensive surveys in waters south of Hainan Island and west of the Paracel Islands. From October 25 to 26, it also conducted operations southeast of the Pratas Islands, a rare move that makes people wondering the US's intentions.

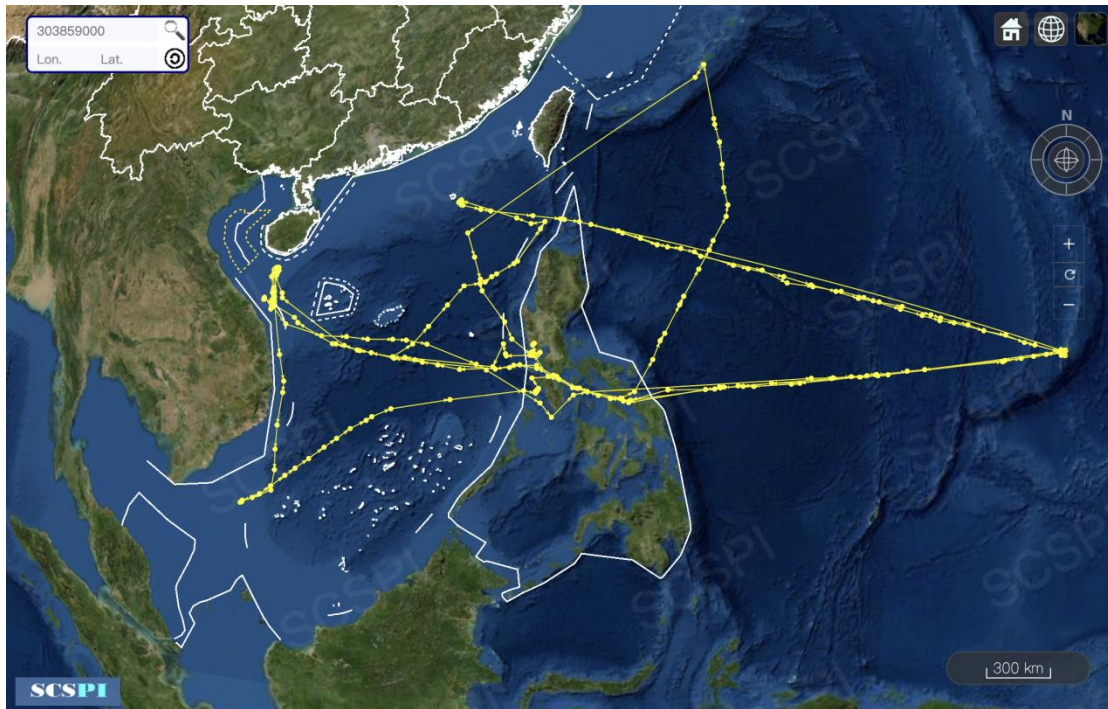


Fig. 7 Tracks of USNS *Mary Sears* in 2021

On November 4, the USS *Carl Vinson* CSG entered the South China Sea through the Mindoro Strait, only days after the USNS *Mary Sears* conducted surveys of the path from October 11 to 14.

### III. Frequently Stirring up the Taiwan Strait Situation

Since the Biden Administration took office, the US military has reduced the number of FONOPs, decreasing from nine times in 2020 to five times in 2021. However, it has significantly stepped up its activities around the Taiwan Strait.

Table 4 Reported US Navy’s intrusions into China’s stationed islands and reefs in the South China Sea in 2021

No.	Date	Ship	Area
1	February 5	USS <i>John S. McCain</i> (DDG-56)	Paracel Islands
2	February 17	USS <i>Russell</i> (DDG-59)	Spratly Islands
3	May 20	USS <i>Curtis Wilbur</i> (DDG-54)	Paracel Islands
4	July 12	USS <i>Benfold</i> (DDG-65)	Paracel Islands
5	September 8	USS <i>Benfold</i> (DDG-65)	Mischief Reef, the Spratly Islands

#### 1. The US warships and aircraft transited the Taiwan Strait in a high-profile manner

Since the Biden Administration took office in 2021, the US warships transited the Taiwan Strait 12 times, more specifically, five times north to south and seven times south to north. Overall, the US military maintained a frequency of one transit per month, each time coupled with hypes. Taiwan Strait transits have become increasingly regular and politicized with

upgraded means. On August 27, the USS *Kidd* (DDG-100) and the USCGC *Munro* (WMSL-755) jointly transited the Taiwan Strait. It was **the first time** the US Coast Guard (USCG) joined the transit of the waters in the past two years. On October 15, the USS *Dewey* (DDG-105) and the HMCS *Winnipeg* (FFH 338) jointly transited the Taiwan Strait. It was **the first time** that the US military transited the Strait along with other countries.

Table 5 The US military warships crossed the Taiwan Strait in 2021

No.	Date	Ship
1	February 4	USS <i>John S. McCain</i> (DDG-56)
2	February 24	USS <i>Curtis Wilbur</i> (DDG-54)
3	March 10	USS <i>John Finn</i> (DDG-113)
4	April 7	USS <i>John S. McCain</i> (DDG-56)
5	May 18	USS <i>Curtis Wilbur</i> (DDG-54)
6	June 22	USS <i>Curtis Wilbur</i> (DDG-54)
7	July 28	USS <i>Benfold</i> (DDG-65)
8	August 27	USS <i>Kidd</i> (DDG-100), USCGC <i>Munro</i> (WMSL-755)
9	September 17	USS <i>Barry</i> (DDG-52)
10	October 15	USS <i>Dewey</i> (DDG-105), HMCS <i>Winnipeg</i>
11	November 23	USS <i>Milius</i> (DDG-69)
12	December 15	USS <i>Chafee</i> (DDG-90)

Moreover, US reconnaissance aircraft also joined Taiwan Strait transit operations. US Navy P-8A anti-submarine aircraft transited the Taiwan Strait on June 2, August 12, and November 29 respectively. On June 2, a P-8A anti-submarine aircraft (AE6864) took off from Kadena Air Force



Base in Okinawa and flew through the Taiwan Strait from north to south. It was the first time that a P-8A crossed the Taiwan Strait since being deployed to the Western Pacific in 2013. On November 29, a P-8A anti-submarine aircraft (AE6832) transited the Taiwan Strait and flew within nearly 15.91 nautical miles away from China's baseline, the shortest distance of the US military's close-in reconnaissance on China according to open source data. P-8A aircraft accounted for nearly two thirds of the US military's reconnaissance aircraft sorties and have frequently conducted close-in reconnaissance over waters near China since their deployment to the Western Pacific in 2013. Despite that, high attention should be paid to their new role in the US's Taiwan Strait transits.

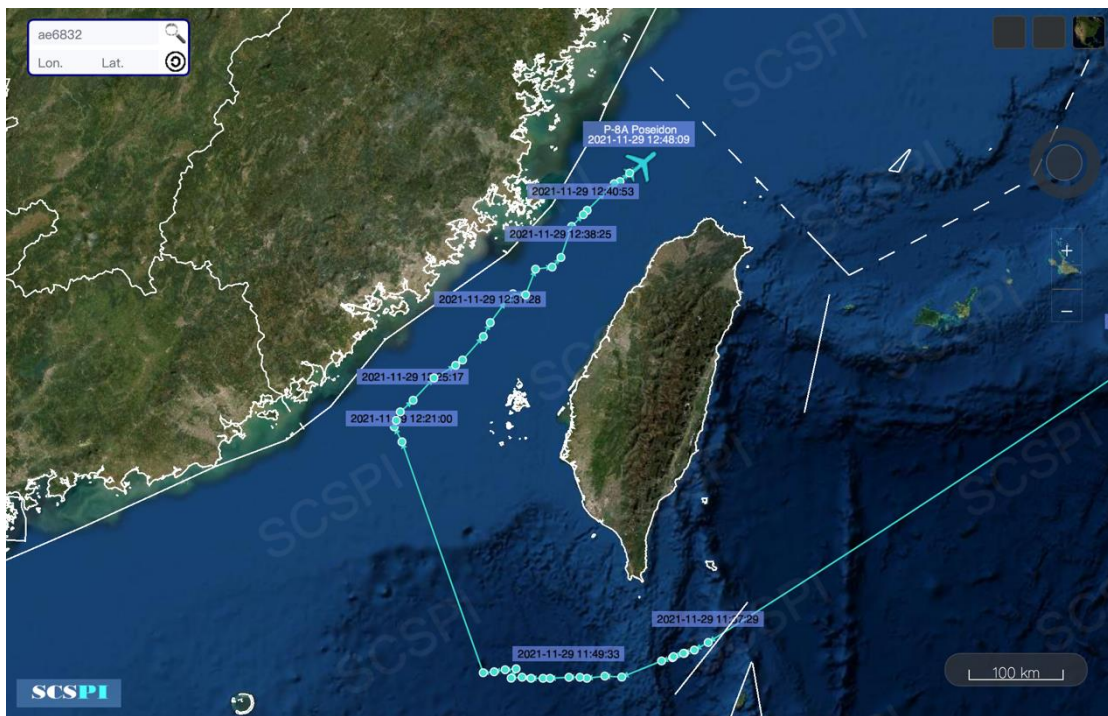


Fig. 8 USN P-8A (AE6832) flew through the Taiwan Strait, November 29

## 2. US senior officials stealthily visited Taiwan

In addition to Taiwan Strait transits, the US military has been playing tricks around Taiwan, continuously challenging Chinese mainland's bottom lines and stirring up the situation in the Taiwan Strait.

On June 6, July 15, July 19 and November 9, a C-17A transport aircraft, a C-146A Wolfhound transport aircraft, a C-130J transport aircraft of the Central Intelligence Agency, and one C-40A Clipper of the US military landed in Taiwan respectively, triggering sharp reactions from China.

The Taiwan Strait is naturally connected with the South China Sea and their situations are closely interconnected. As the US and the Taiwan side hyping up and stimulating the Taiwan Strait situation, military security risks in the northern waters of the South China Sea are sharply increased. The US reconnaissance aircraft, survey vessels and underwater assets are maintaining a persistent presence in the triangle zone of Hainan Island, the Paracel Islands and the Bashi Channel, posing more uncertainties to the regional situation.<sup>5</sup> The US military's frequent Taiwan Strait transits and US officials' stealthy visits to Taiwan released dangerous signals to separatists in Taiwan and extremely threatened the peace and stability of the Taiwan Strait.

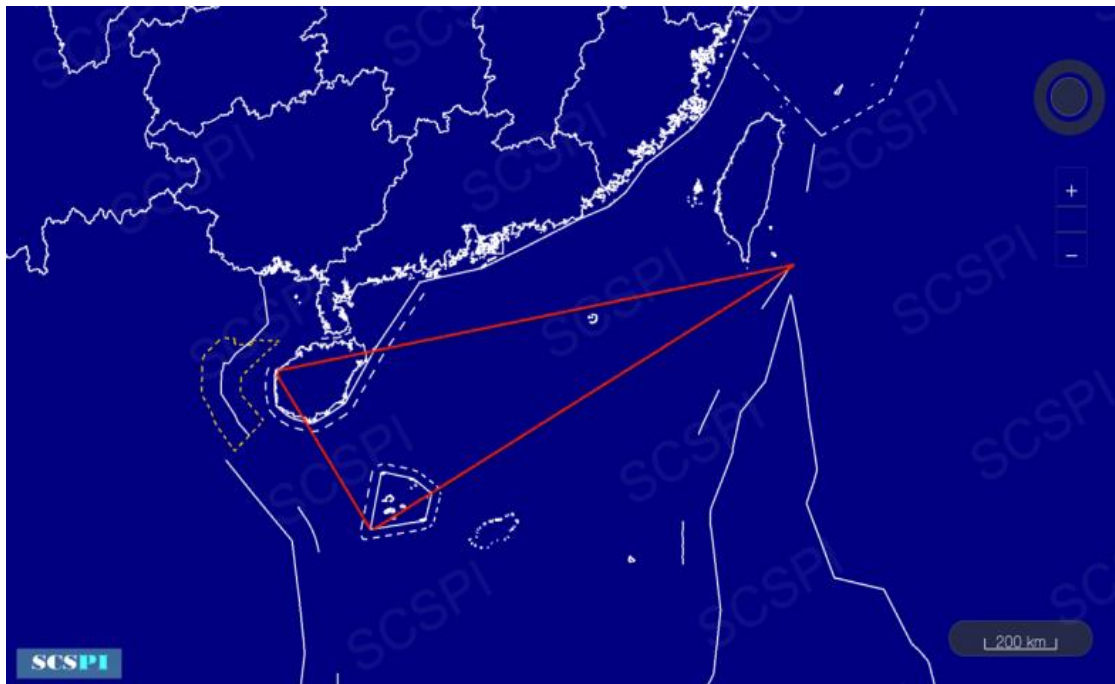


Fig. 9 The triangle area surrounded by Hainan Island, the Paracel Islands and the Bashi Channel

## **IV. Military Exercises and Drills' Recovery and Scale-up**

### **1. Military exercises were further increased and scaled-up.**

In 2020, due to the impact of the COVID-19 pandemic, the US military scaled back, or even canceled, a series of training and exercise activities. In 2021, by accelerating vaccination and continuing restrictions on personal contact, the US military managed to recover and even scale-up its military exercises compared with pre-pandemic levels.

According to open data, the US military carried out a total of 95 military drills throughout 2021, which exceeded those conducted in pre-pandemic 2019 in terms of both the number (85) and the scale. Among these military exercises, there were 14 large-scale unilateral exercises and 81 bilateral and multilateral ones. Unilateral exercises were undertaken by the US Navy, the USAF, the US Marine Corps (USMC), the US Army, the USCG and other armed services. These exercises covered subjects such as anti-surface warfare (ASuW), anti-submarine warfare (ASW), mine countermeasure operations, amphibious warfare, cyberspace operations, and maritime domain awareness. Multilateral exercises were joined by countries along the South China Sea and those outside the region, such as Japan, the UK, Australia, India, France and Canada. The US's military



exercises in 2021 were brought to a new level in terms of not only the frequency but also the scale.

From August 2 to 27, 2021, the US held the first Large Scale Exercise 21” (LSE 21), calling it the largest military exercise in four decades. Approximately 25,000 personnel participated in the activity, including those with the 2nd, 3rd, 6th, 7th, and 10th Fleets and three Marine Expeditionary Forces.<sup>6</sup> With an unprecedentedly large scale, wide geographical span, and huge variety of weapons used, the exercise aimed to demonstrate the US’s capacity in addressing challenges simultaneously in different theaters of operations with an obvious intention of deterring China and Russia. As a part of the LSE 21, the US joined with the UK, Japan, and Australia to hold a series of military exercises involving over 30 naval vessels, 200 aircraft and 30,000 military personnel in the Philippine Sea. Covering land, sea, air, space, electromagnetic and various aspects of modern warfare, subjects of the joint exercises included the security of communication lines against A2/AD efforts, forward bases and sea routes in simulated combat, the 4th and 5th generation fighters formation training and etc.<sup>7</sup> Overall, the exercises featured wide coverage of subjects, in-depth integration among forces, long duration and implications for real combat.

## **2. Joint actions with extra-regional countries were strengthened.**

**The US made greater efforts to get extra-regional countries more militarily involved in the South China Sea, as the China-US competition intensified.**

In terms of diplomatic instruments, the US directed agenda-setting under such multilateral mechanisms as the Quadrilateral Security Dialogue (QUAD)<sup>8</sup> and Group of Seven (G7)<sup>9</sup> to continuously draw attention to the South China Sea issue and exert diplomatic pressure. For example, it frequently expressed “concerns with the situation in the South China Sea” and the necessity to “address security challenges in the Indo-Pacific region”, trying to exaggerate the “China threat” and solicit support from its allies and partner states.

In terms of military means, the US stepped up joint military exercises with others. Throughout 2021, it carried out as many as 75 military exercises in the South China Sea and neighboring areas with extra-regional countries, nearly double the 2019 figure of 39.

In terms of the number of bilateral and multilateral exercises jointly held with the US, Japan ranked the first with 61, followed by Australia with 14, and then the UK and India tied for third place with eight respectively. Japan has become the “vanguard” in the US’s Indo-Pacific strategy,

playing a bigger role in supporting the military activities of the US armed forces in the South China Sea.

On September 15, the US, the UK and Australia announced the creation of an enhanced trilateral security partnership called “AUKUS”<sup>10</sup> to deepen diplomatic, defense and other cooperation and meet mounting security challenges in the Indo-Pacific region. Within this partnership framework, the US and the UK will help Australia build at least eight nuclear-powered submarines. This move is very likely to induce a new round of arms race in the region or even across the globe, and cast a shadow over the peace and stability in the South China Sea, hence the concerns of various parties.

**The US has deepened the integration and normalized the interoperability with allies and partners through military exercise.** In February 2021, the French Floréal-class light frigate FNS *Prairial*, the US Navy’s USS *Curtis Wilbur* (DDG 54) and the Japan Maritime Self-Defense Force Towada-class replenishment ship *JS Hamana* (AOE-424) conducted trilateral replenishment drills at sea.



Fig. 10 The US, Japan and Australia conducted trilateral replenishment drills

From July to August, the UK Royal Navy's HMS *Queen Elizabeth* (R08) CSG engaged in high-intensity joint military exercises and trainings with the US Navy's USS *America* (LHA-6) amphibious assault ship in the Philippine Sea. On August 20, the two formations conducted cross-deck aviation mission, a first-of-its-kind operation in modern naval history, which saw F-35B aircraft launched from HMS *Queen Elizabeth* land on the amphibious assault ship USS *America* to load ordnance, refuel, and strike follow-on objectives.<sup>11</sup> Judging from the subjects, the two navies focused on developing interoperability, with the UK's aircraft carrier actually playing the role of its US counterpart.

On October 3, a USMC F-35B successfully conducted the first ever landing on the JS *Izumo* (DDH-183), a JMSDF helicopter destroyer, indicating the latter is capable of serving as an aircraft carrier.<sup>12</sup>

All these moves showed that the US is normalizing interoperability with its allies through mutual deployment of carrier-based aircraft, mutual formations of warships, and mutual supply between warships and the other countries' replenishment ships. The goal is to effectively combine and exploit the naval forces of the US and its allies and partners in the Indo-Pacific region, and further pull external forces to intervene in the affairs of the South China Sea.

### **3. Exercise subjects were highly targeted.**

**The exercises encompassed not only traditional large-scale exercises** such as the Cooperation Afloat Readiness and Training (Exercise CARAT) and Exercise Malabar, but also small-scale tactical drills, with the subjects mainly focusing on ASW, air defense operations, amphibious warfare, electronic warfare, replenishment at sea, and so on.

**The US armed forces also stepped up the verification of a series of emerging CONOPS**, such as Multi-Domain Operations, Expeditionary Advanced Base Operations (EABO), Distributed Maritime Operations (DMO), and Littoral Operations in a Contested Environment (LOCE) to proactively explore future modes of operations. For instance, in May 2021, the USMC and the US Navy co-organized training on the operational concept of EABO in areas off Okinawa, Japan;<sup>13</sup> in August 2021, the US

military conducted drills testing the concepts of DMO, EABO and LOCE during the LSE 21.<sup>14</sup>

**What's more, the exercises took on features of real combats.** For example, from November 21 to 30, naval forces from the US, Japan, Australia, Canada and Germany jointly conducted the exercise ANNUALEX-21. A total of 17 military warships from five countries, led by the USS *Carl Vinson* CSG and the JS *Izumo*, gathered in the Philippine Sea off the southern coast of Japan's Shikoku to engage in the 10-day large-scale exercise. The subjects of this exercise included maritime communication tactics, ASW, air warfare operations, combat firing, replenishments-at-sea, cross-deck flight operations and maritime interdiction maneuvers. This exercise also included the first combined information warfare (IW),<sup>15</sup> during which process the navies worked together on integrated command and control systems as well as collaborative battlefield environment assessments, which further promoted the integration of their warfare systems. The commander of the US Seventh Fleet later noted such exercises are aimed at sending precautionary messages to potential adversaries and deter "aggressive or authoritarian" countries from overreaching in the region.<sup>16</sup>

Overall, the major goals of multilateral exercises were to strengthen collective readiness, maintain maritime superiority, and enhance interoperability and maritime power projection.

## V. Evolution of Maritime Strategies, CONOPS and Equipment

### 1. Strategic vision: from strategic competition to integrated deterrence

The idea of “long-term inter-state strategic competition” with China and Russia as proposed in the US’s *2018 National Defense Strategy (NDS)* was highly controversial, since “the establishment of this broad, undefined mission” undermined the strategy’s original intent, “became a loophole to circumvent the strategy’s hard choices”, and was further complicated by the mixed use with “great-power competition.” The US administration was suggested to focus the next NDS on “strengthening nuclear and conventional deterrence against China and Russia.”<sup>17</sup> After repeated discussions, “integrated deterrence”, a term that includes maintaining military superiority, the latest technologies, and new CONOPS that make adversaries think twice, and will be the cornerstone of America’s defense strategy.<sup>18</sup> On August 6, 2021, Admiral John Aquilino, Commander of the US Indo-Pacific Command, expressed his “concerns” about China’s actions on the issues of the Taiwan Strait and the South China Sea, as well as the “urgency” to execute “integrated deterrence” against China.<sup>19</sup> On December 9, Mara Karlin, performing the duties of deputy undersecretary of defense for policy, said that the new NDS will be released in early 2022. The strategy of integrated deterrence that integrates US military forces

across domains, and brings together US allies and partners will become “the really front and center” to “deal with challenges.”<sup>20</sup>

Correspondingly, the US Navy diverted its strategic focus from competing with China to deterring China. In implementing the guidelines of the Chief of Naval Operations (CNO) in 2020 — *Advantage at Sea: Prevailing with Integrated All-Domain Naval Power*, CNO Adm. Mike Gilday released the *2021 Navigation Plan* on January 11 and established it as the annual guidance for the US naval services. The plan stated that “China is the most pressing long-term strategic threat” to the US, and stressed that the US’s security and prosperity depend on the seas. It also required that the naval forces generate integrated all-domain naval power to compete with its rivals “in new ways”—countering rivals through effective day-to-day competition, and that should deterrence fail, the naval forces stand ready to confront aggression and decisively win the fight. In managing global force demands, the US should focus investments on improving advantages over China.<sup>21</sup> The plan clarified that to win the “strategic competition” against China is “to deter and ultimately defeat adversary aggression.” In October, a strategic guidance was released by the newly-appointed Secretary of the US Navy, noting that the top priority for the US Navy and Marine Corps is “to develop CONOPS and capabilities that bolster deterrence and expand warfighting advantages vis-a-vis the People’s Republic of China.”<sup>22</sup>



The USAF, US Army and other services are clarifying their deterrence missions within the framework of Joint All-Domain Operations (JADO). Leaders of the USAF stressed that the fast-developing Chinese Air Force has become an actual challenge, and requested additional investment so that the USAF and US Space Force remain in control of the “global high ground,” support other services to jointly provide integrated deterrence, and deter or defeat China in the Indo-Pacific region.<sup>23</sup> As China rises to become the “decisive challenge” to the US and dealing with this challenge turns out to be an important part of the national security strategy, other services of the US armed force will also introduce integrated deterrence strategies against China.

## **2. CONOPS: Focusing on practical operations and real combat**

A strategic vision would be impossible without the support of concrete CONOPS. The *US Strategic Framework for the Indo-Pacific* declassified in January 2021, crystallized three objectives of the US military against China in the Indo-Pacific region, namely: 1) denying China sustained air and sea dominance inside the first island chain in a conflict; 2) defending the first-island-chain nations, including Taiwan region of China; 3) dominating all domains outside the first island chain.<sup>24</sup> In general, the various services all proposed or updated their CONOPS in the Indo-Pacific region on this basis, with a view to addressing potential conflicts in the

## South China Sea and Taiwan Strait.

ASuW, as the primary task for the US to ensure sea control and power projection, is also the core of DMO. Focusing on deterrence and preparedness against China in the South China Sea and Taiwan Strait, the US Navy and the USAF both strengthened their capability of striking the surface warships and carrier fleets of the People's Liberation Army. On April 7, 2021, CNO Gilday said that the US Navy will “move to a hybrid fleet” by placing dual emphasis on the force on the sea and under the sea from a fleet survivability focus and enhance its offensive capabilities against its adversaries by integrating manned and unmanned platforms and developing advanced hypersonic and directed-energy weapons. In addition, efforts will be made to integrate the Navy Operational Architecture (NOA) into Joint All-Domain Command and Control (JADC2) for greater lethality.<sup>25</sup> On April 30, the US Naval Air Systems Command unveiled the newly-formulated *Offensive Anti-Surface Warfare Increment 2* (OASuW Inc 2), which will research and develop carrier-based, aircraft-launched and long-range anti-ship missiles of a new generation.<sup>26</sup> Aside from expanding the airbase in Okinawa, Japan, under the concept of the Agile Combat Employment (ACE), the USAF successfully completed a live-fire test of the “Rapid Dragon” program in December where a military cargo aircraft was used to launch precision-guided weapons from outside the theater.<sup>27</sup>

On December 1, the USMC introduced a new CONOPS, *A Concept for Stand-in Forces*, which explained EABO. In contrast to the US Navy and the USAF who work to enhance strike capabilities from outside a theater, the USMC advocates having multiple services, arms and allied armies form small forces featuring strong combat capability, high mobility and use of deception to operate within the theaters' front areas, in a bid to support its own military activities, deter adversaries, or disrupt the adversaries' plans and actions.<sup>28</sup> The Japan-US joint operation plan, as recently revealed by Japanese media, might be an application of the concept of "stand-in forces". The draft plan would enable the USMC to set up a forward base along Japan's southwestern islands in the event of a Taiwan contingency.<sup>29</sup> Apart from the transformation toward "guerrilla warfare", the USMC has eliminated its entire tank force in line with its 10-year transformation ambition to "return to its historic role in the maritime littoral", and shifted its focus to building the Fleet Marine Force (FMF) dedicated to maritime operations with greater maneuverability. The US Army introduced the *Waypoint 2028-2029* to put in place "intervention forces" that can cope with large-scale combat.<sup>30</sup>

Furthermore, the US devoted vigorous efforts to increase its allies' role in relevant CONOPS. As part of its "Indo-Pacific Strategy", the US is increasing military cooperation with Japan including in the South China Sea and Taiwan Strait, and has encouraged its NATO allies to dispatch

vessels for certain activities in the South China Sea and the East China Sea, along with creating international hotspot issues, for example, USS Dewey and HMCS Winnipeg conducted joint Taiwan Strait transit on Oct 15. Even then, the US might, leveraging the mechanism of AUKUS established in September, deploy weapons such as nuclear-powered attack submarines in Australia to improve the US military's survivability and strike capability against China from outside theaters. At the same time, the US has continued trying to secure forward bases in areas surrounding the South China Sea. Since the *Visiting Forces Agreement* between the US and the Philippines was restored in late July, US warships have engaged in increasingly frequent visits to Subic Bay. Over the first half of 2021, only one dock landing ship, the USS *Harpers Ferry* (LSD-49), visited Subic Bay in March; yet the figure climbed over the second half of the year—a total of 11 US warships sailed into the area, the types of which included replenishment ships, ocean surveillance ships and destroyers, showing that the US military has acquired greater access to Subic Bay. With constant deployments to Subic Bay as a forward base, the US might further enhance the intensity of activities in the South China Sea.

### **3. Military equipment and technologies: Seeking to create new gaps**

According to the *US Strategic Framework for the Indo-Pacific*, the US has acknowledged that China has air and sea dominance inside the first

island chain, and the focus of the US military development should be placed on expanding advantages in terms of military equipment and technologies to maintain deterrent capability so as to defeat China in potential conflicts over the South China Sea and Taiwan Strait.<sup>31</sup> Aside from proposing new projects of weapons and technologies and developing new applications of available equipment, such as launching palletized munition systems with transport aircraft, the US military is working on creating advanced asymmetric capabilities against adversaries.

The US Navy and the USAF have both stepped up the research, development and testing of anti-missile and air-to-ground hypersonic weapons to bridge the gap with China and Russia. They are also pursuing the research and development of other hypersonic weapons to alleviate Indo-Pacific-based US military from the pressure of Chinese missiles. For the fiscal year 2022, the US Department of Defense has sought as much as \$3.8 billion for hypersonic weapons.<sup>32</sup>

As reported by the United States Naval Institute, in line with the “Pacific Deterrence Initiative”, the US Indo-Pacific Command submitted a document to Congress, seeking to build deterrence capabilities in the theater against China. The US Indo-Pacific Command plans on the fielding of an Integrated Joint Force with precision-strike networks west of the International Date Line along the first island chain, integrated air and missile defense in the second island chain, and a distributed force posture

that provides the ability to preserve stability, and if needed, dispense and sustain combat operations for extended periods.<sup>33</sup>

New maritime systems are also being developed. On December 15, 2021, Raytheon Technologies, in partnership with the Defense Advanced Research Projects Agency (DARPA), successfully completed a demonstration of its Cross-Domain Maritime Surveillance and Targeting (CDMaST) program. This new maritime “systems of systems” will bolster DMO and hold enemy ships and submarines at risk in contested environments.<sup>34</sup>

Directed-energy weapons are also being researched, developed and tested. In early-August, Lockheed Martin announced it had successfully carried out the shipboard launching test of the High Energy Laser with Integrated Optical-dazzler and Surveillance (HELIOS).<sup>35</sup> At the same time, the USAF released an announcement of developing the microwave-based anti-drone system to be called Mjolnir.<sup>36</sup>

Furthermore, the US armed forces will, based on its military strategic vision and operational demands, advance the research and development of new technologies and weapons including Counter-C5ISR, land-based intermediate-range missiles, the next-generation nuclear-powered attack submarine SSN (X), and the next-generation guided missile destroyers DDG (X), so as to cement and expand the military advantages.

## VI. Conclusion

Since Joe Biden took office, his administration has adopted a dual approach towards China: emphasizing competition and intensifying deterrence on the one hand, and enhancing crisis management on the other. However, in this contradictory logic, a wide spectrum of the US military's activities in the South China Sea were intensified and more frequent throughout 2021. Since the presidency of Barack Obama, the US has been intensifying military competition with China, especially in the South China Sea. Though different presidents and administrations differ greatly in behavioral styles and policy focuses, strengthening forward presence in the South China Sea and increasing military activities are an area of common interest.

At present, the US has indeed shifted its focus to Taiwan issue to ramp up strategic pressure on China. Nevertheless, the focus of military competition is still placed on the South China Sea, not to mention that the situations in the Taiwan Strait are fundamentally linked with those in the South China Sea. In the future, the US will continue to step up military activities in the area, the high intensity of which demonstrates minimum linkage with the "freedom of navigation" or regional peace. Under the influence of "China threat" and "great-power competition", the US military will act even more fiercely, not only jeopardizing the benefits of regional

peaceful development, but also hindering itself from achieving political goals. It is a delicate balance to strike between military competition and crisis management. Undoubtedly, the risk of conflicts caused by the US military activities is soaring up in the South China Sea.



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