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# JIPA

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# Emerging Technologies

## New Threats and Growing Opportunities for South Korean Indo-Pacific Strategy

DR. HYUN JI RIM

### Abstract

As strategic competition in the Indo-Pacific theater intensifies, states are more actively searching for ways strengthen their position in the great power game. Emerging technologies are at the center of this new geopolitical, geostrategic chess board, and their dual capabilities are opening new domains for the conduct of hostilities as well as cooperation. This article examines the new threat posed by emerging technologies and growing opportunities with the case of South Korea. It looks into threat perception and Seoul's national security imperatives, and further investigates strategic motives and the goals behind South Korea's pursuit of emerging technologies development, acquisition, and application. It argues that these emerging technologies are necessary for South Korea's viable military strategy, and that they will likely be a positive push toward Seoul's bigger role in integrated military strategy in the Indo-Pacific.

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From its naissance in the 2017 Asia-Pacific Economic Cooperation (APEC) meeting, the Indo-Pacific strategy (IPS) has come a long way. The vision of a Free and Open Indo-Pacific (FOIP) that emphasized preparedness, partnership, and promotion of a networked region has begun to take a more concrete shape under the Biden administration as US *Indo-Pacific Strategy*. One of the noticeable advancements made is the Quadrilateral Security Dialogue (the Quad). The Quad is at the core of US *IPS* that competes with China's Belt and Road Initiative.<sup>1</sup> Another step forward is the Australia–United Kingdom–United States (AUKUS) deal signed on 15 September 2021, a pact among Washington, London, and Canberra that addresses technologies related to artificial intelligence (AI) and nuclear-powered submarines, among others.

Under the 10 action plans for the next 12- to 24-month period, reinforcing deterrence was emphasized. The US *Indo-Pacific Strategy* issued in February 2022 reads:

The United States will defend our interests, deter military aggression against our own country and our allies and partners . . . and promote regional security by developing new capabilities, concepts of operation, military activities, defense initiatives,

and a more resilient force posture. . . . we will deepen cooperation and enhance interoperability through a concrete program of work on advanced capabilities, including cyber, artificial intelligence, quantum technologies, and undersea capabilities.<sup>2</sup>

In the security domain, the *IPS* is a more comprehensive form of the US Third Offset Strategy, which named China and Russia as strategic competitors of the United States and reevaluated civil-military fusion in technology. This competition is becoming more comprehensive across multiple sectors from semiconductor, telecommunication, to green energy, and the strategic roles and the significance of cooperation among the Quad and Quad Plus members is expected to rise.

The most severe competition lies in emerging military technologies that open new domains for the conduct of hostilities. These domains not only apply to the sheer size and speed of an act of aggression, but also to the nature of destruction in conflicts. New technologies mentioned in the 2018 *National Defense Strategy* are AI, lethal autonomous weapons, hypersonic weapons, directed energy weapons, biotechnology, and quantum technology.<sup>3</sup> These technologies are linked to developing and implementing new types of assets in the new era of counterforce and beyond.<sup>4</sup> China and Russia have been executing military modernization plans focusing on these new capabilities to increase survivability against the US missile defense system and potential conflicts in new domains.<sup>5</sup>

China, for example, tested a new space capability, the Fractional Orbit Bombardment System (FOBS) with a hypersonic glide vehicle carrying “a nuclear-capable rocket,” on 7 August 2021.<sup>6</sup> Even though FOBS is nothing new, the fact that China upgraded the system, which is prohibited by the Soviet-US Strategic Arms Limitation Treaty II, with a hypersonic glide vehicle and tested it was a wakeup call for Washington.<sup>7</sup> The new system will allow China to place nuclear weapons into low earth orbit and maneuver the warhead laterally and vertically when reentering the atmosphere. This an offensive antiaccess area denial (A2AD) asset that is capable of directly interfering with the US missile defense system. Thus, it is a recent example of deepening strategic competition between China and the United States. In addition, China has been investing in multiple independently targetable reentry vehicles (MIRV) and hypersonic glide vehicles (HGV), as well as a space-based early warning system.

On 15 November 2021, Russia tested a direct-ascent antisatellite missile that “clearly demonstrate that Russia, despite its claims of opposing the weaponization of outer space, is willing to jeopardize the long-term sustainability of outer space.”<sup>8</sup> This shows that Russia is exploring the use of emerging technologies and has an interest in new space technologies. Russia has been operating under the doctrine of “escalate to de-escalate” based on limited nuclear use and reiterated this point in its Basic Principles of State Policy of the Russian Federation on Nuclear De-

terrence, 2020.<sup>9</sup> Through military modernization plans, it focuses on developing “exotic weapons,” various delivery systems to weaken the US missile defense system such as HGVs (Project 4204), autonomous underwater vehicles (AUV, Status-6 or Canyon), nuclear-powered cruise missiles (NPCM), air-launched ballistic missiles (ALBM), hypersonic cruise missiles (HCM), and more.

South Korea (ROK) has also issued new budgets and retailored its policy to adapt to the changing security environment. The Defense Acquisition Program Administration (DAPA) in June 2021 announced a new defense program to develop an Israeli Iron Dome-like interceptor system, targeting completion in 2035. The approved budget for the project totals over \$2.5 billion.<sup>10</sup> Last year, in 2020, Seoul launched an Adaptive Acquisition Framework (AAF), benchmarked after the US AAF, for the first time and issued \$30 billion for AI, drones, and autonomous weapons. Other military modernization planning and investments include developing indigenous vertical takeoff and landing (VTOL) unmanned aircraft by 2033 with a \$1.109 billion budget, upgrading CH-47 Chinook choppers by 2032 with \$1.13 billion, and so forth. It is also actively pursuing the legal foundations for emerging civil-military technology and new weapon systems applications.

As the US nuclear umbrella protects South Korea from external threats, the US–ROK bilateral alliance relationship is an imperative factor in Seoul’s security policy. In this context, South Korea’s perspective on Indo-Pacific strategy is inseparable from its relations with the United States, threat perceptions, and its strategic motives. This article identifies those drivers of Seoul’s Indo-Pacific vision, and the role emerging technologies play in maximizing the effective use of the Indo-Pacific military strategy and Quad Plus for South Korea.

### **Threat Perception and National Security Imperatives for Seoul**

While the group of four—the United States, India, Japan, and Australia—announced that “the Quad is a flexible group of like-minded partners dedicated to advancing a common vision and to ensuring peace and prosperity,”<sup>11</sup> South Korea, supposedly the “linchpin” for security and prosperity in the Indo-Pacific,<sup>12</sup> showed no more than a lukewarm response to the quadrilateral cooperation. Only after the Moon and Biden administrations’ summit in late May 2021 has Seoul officially agreed on full participation and support for US *IPS* with the promise of a supply of COVID-19 vaccines for its 550,000 service-members who are in regular contact with the US Forces Korea in Seoul.

Contrary to active promotion of Indo-Pacific cooperation from Japan and Australia, Seoul did not announce an official stance on the Quad or Quad Plus, initially. It is interesting how domestic debate on Quad participation is anchored on fear of being left out, especially South Korea’s own comparison with another US



ally in the region, Japan. Seoul, however, was observed to be “hesitant” to fully participate in the strategic cooperation due to a number of reasons. First and foremost, South Korea still suffers from the memory of Terminal High Altitude Area Defense, (THAAD) where China boycotted the Korean tourism industry to penalize Seoul for its decision to host a US missile defense system in Seongju. Beijing and Seoul have come a long way from their “amicable cooperative relationship” in the 1990s to “strategic partnership” in 2008. However, as interdependency grew, policymakers in Seoul seem to have lost a long-term direction on how to thrive under Sino-US rivalry.

Another factor that contributes to Seoul’s lukewarm stance is nuclear North Korea. The Moon administration has been from the beginning sensitive to North Korean reaction to South Korean policy and cooperative gestures. As an administration that has dedicated policy priorities to its rapprochement with Pyongyang, the Moon administration has shown reluctance in acceding to the Quad, which may read as an outright alignment with the United States. South Korea after the summit, however, did officially state that “the United States and the ROK also reaffirm support for enhanced cooperation with Pacific Island Countries and acknowledge the importance of open, transparent, and inclusive regional multilateralism including the Quad.”<sup>13</sup>

Whether it be Beijing or Pyongyang, the essence of such indecisiveness reflects a significant flaw in Seoul’s thinking. If China or North Korea sees that South Korea perceives an outright alignment with the United States as a risk that it needs to take, then that will be the starting point of their undermining of Seoul’s diplomatic and foreign policy capacity in pursuing its own terms in the international political arena. Furthermore, North Korea will see this as an opening for achieving its long-term strategic goal: decoupling the US–ROK alliance. On a similar note, if the United States is convinced that that is the view Seoul holds, then it will be the beginning of an underconfident alliance with serious trust issues.

Recent, more updated, policy of the Moon administration, however, seems to address this issue and move away from any complications of such indecisiveness. Reaffirming the alliance relationship, Seoul and Washington are working together in strategic sectors such as semiconductors and electric cars. The Biden administration on 12 April 2021 held a supply chain meeting with CEOs in the semiconductor industry from the United States, the Netherlands, South Korea, and Taiwan to bolster investment in and cooperation with the United States.<sup>14</sup> Such movements in the semiconductor sector to strengthen US ties with the world’s largest semiconductor suppliers in South Korea, Taiwan, and the Netherlands who possess an exclusive extreme ultraviolet (EUV) laser technology could further limit Chinese influence in global semiconductor supplies. South Korea is

supporting these US efforts to secure global semiconductor supplies and related investments. In the electric vehicles sector, LG Energy Solution and SK Innovation signed a contract for lithium-ion battery supply for Ford and Volkswagen electric vehicle (EV) plants in the United States.<sup>15</sup>

The longstanding US–ROK alliance is an indispensable piece of Seoul’s security calculations, and anything that damages the healthy relationship is considered as a potential threat factor. In this context, strengthening the alliance relationship based on comprehensive cooperation in broader areas and issues is crucial for Seoul not to become a weak link in Sino-US rivalry.<sup>16</sup>

Historically surrounded by great powers and involved in great power competitions, South Korean policy making is sensitive when it comes to independence, self-defense, and autonomy since those factors often dictate the domestic political agenda. Thus, national security policy tends to suffer from dilemmas such as (1) idealist self-defense and dependence on the US nuclear umbrella, (2) China, strategic partner who may help solve the North Korean puzzle and strategic competitor of the United States, (3) the picture of a reunified Korea and the currently threatening North Korea, and (4) Russia who can counter/leverage China and Sino-Russian cooperation.

Major external threats to national security for South Korea come from three neighbors mentioned above: China, North Korea, and Russia. What concerns Seoul regarding China is Beijing’s unilateralism and economic retaliation. From South China Sea or East China Sea territorial disputes to the Taiwan Strait, potential conflicts in the area may limit Seoul’s freedom of navigation, which is critical for securing oil and gas supply for an energy-deprived country. China’s vigorous pursuit of military modernization and new capabilities such as its “Blue Ocean Information Network” pose threats in this context.<sup>17</sup>

Moreover, China’s physical violation of Korean territory has raised continuous concerns, especially Chinese fishing boats in the Yellow Sea. A South Korean coast guard was stabbed to death in 2011 apprehending a Chinese vessel. In 2017, South Korea fired 249 warning shots over illegal fishing boats;<sup>18</sup> there were over 4,600 cases of illegal fishing reported in 2020 between January and August.<sup>19</sup> This concern turned into fear when Chinese H-6 bombers flew over the Korean Air Defense Identification Zone (KADIZ) in 2019 without any warnings. Similar incidents of Chinese violation of the KADIZ occurred over 410 times between 2017 and 2019.<sup>20</sup> China also surprised Seoul by sending a warship to the waters near Baengnyeongdo past the self-imposed boundary in December 2020.<sup>21</sup>

In addition, China’s recent test of FOBS with hyper-glide capability, as well as new nuclear weapons with emerging and space technologies seem to show how China is serious about growing its military forces—supporting such growth with the largest military expenditure in history.<sup>22</sup> While Chinese assertive tour de force



is becoming more visible in the military and security realms, recently, there were multiple cases of Chinese media portraying and claiming hanbok (Korean traditional attire) and kimchi as Chinese. This ignited tension between furious Koreans and Chinese on virtual platforms, and the tension is only getting more intense.

Russia, on the other hand, does not pose imminent direct threat. Its course of development in strengthened autocracy and deteriorating democracy, alongside its military modernization, however, does pose threat in the long run. In July 2019, it flew two Tu-95 bombers and an A-50 in violation of South Korea's KADIZ under coordination with China. It was the first time since the Korean War that Seoul experienced violation of its territorial airspace.<sup>23</sup> Russia has violated KADIZ around 90 times between 2017 and 2019.<sup>24</sup> This act triggered serious doubts on the intentions of Russia and revealed the face of "a revitalized malign actor."<sup>25</sup>

Finally, the most direct and longstanding military threat is posed by North Korea. In January 2022 alone, Pyongyang has conducted five missile tests and eight missiles of various ranges were used in those tests. This recent series of missile tests is, to some degree, instigated by Seoul's test of locally developed submarine-launched ballistic missiles (SLBM) on 15 September 2021 and, at the same time, by Kim Jong-un's desire to shape the political environment to his favor in the early stages of the Biden administration, the final stages of the Moon administration, and for the upcoming elections in South Korea.

North Korea's insatiable appetite for nuclear weapons and new missiles resulted in 132 missile tests under Kim Jong-Un, who has been in power since 2011. The number includes newly introduced SLBM, KN-11, and PK-1 in 2015, Hwasong-14 with 7–8,000 km flight distance, and Hwasong-15 with 13,000 km flight distance in 2017.<sup>26</sup> This is an exponential increase in the number of launches and in the variety of missile types compared to Kim Jong-il (1994–2011), who recorded only 47 tests.

Pyongyang's first hypersonic missile was fired in a missile test nine days after South Korea's SLBM test; an antiair missile test and a SLBM test followed suit, all three in one month period. In addition, Pyongyang claimed that the second ballistic missile of the year had a detached hypersonic glide vehicle (HGV) and the two short-range missiles of the third missile test were launched from two separate trains—part of a new railway-born missile regiment, similar to the ones Russia has been working on. The different ranges—short-range, long-range, intermediate range—and types of the missiles, both cruise and ballistic, launched during the tests, along with the high volume of missile tests, all imply that there is high possibility of unwanted escalation dragging not only the two Koreas, but other stakeholders in the Indo-Pacific into instability.

Beyond conventional weapons, North Korea also poses great threat in cyber domains. Seoul has been warned by East Security Response Center (ESRC) of

cyber hacking attempts by Thallium, a North Korean hacker group that was behind hacking Microsoft in 2019. Their activities against South Korean entities took place in 2014 against Korea Hydro Nuclear Power (KHNP) under the code name “Kimsuky” and in June 2021 via the Ministry of Unification and the Korea Institute for National Unification (KINU) emails, Korea Atomic Energy Research Institute (KAERI) or by impersonating the Institute for National Security Strategy (INSS) and Korea Internet and Security Agency (KISA).

Moreover, the concern over physical infiltration by unmanned aerial vehicles (UAV, i.e., drones) is intensifying lately. There were multiple accounts of North Korean drones infiltrating the border in 2014. Focused near Paju in order to fly over military facilities, one of them had taken pictures of South Korea’s presidential compound in addition to military installations.<sup>27</sup> In addition, there were two cases of North Koreans crossing the border on foot to be captured by South Korean guards in less than a one-year period, one in February 2021 and the other in November 2020.<sup>28</sup> The Moon administration was criticized for the late detection of the trespassers and its delayed response in capturing them.

These actors in the theater are actively pursuing military buildups and modernization through emerging technologies such that some posit that a qualitative arms race is on the trend.<sup>29</sup> The increasing threats supported by emerging technologies and advanced capabilities have pushed South Korea to invest in its data protecting, gathering, and processing capabilities; intelligence, surveillance, and reconnaissance (ISR) capabilities; missile and antimissile capabilities; AI-based weapons; and UAV technologies. The pursuit of emerging technologies, thus, contributes to achieving the following three strategic goals for South Korea:

- **Maintaining military superiority over North Korea:** Among the three countries mentioned above, North Korea is the one who poses the most direct military threat. With the two Koreas technically still at war, North Korea shares borders with South Korea and has been aggressive in pursuit of its own offensive capabilities. As Pyongyang remains Seoul’s key adversary, it is imperative to maintain military superiority over North Korea and escalation dominance. Thanks to the US nuclear umbrella, South Korea has that advantage, however, evolving technologies pose a challenge to suppress and prevent strategic and tactical surprise completely. Investing in emerging technologies and their military applications such as antidrone technologies and AI-based radar detection technologies place South Korea one step closer to achieving this strategic goal.
- **Bolstering domestic economic innovation and protecting Korean intellectual property:** Emerging technologies trigger domestic innovations and

their cumulation contributes to advancing weapons systems and platforms. Securing these intellectual properties is critical in military terms. The military use of emerging technologies when obtained by adversaries, leading them to not only replicate the technology-applied product but also to exploit its weakness may bring severe damage to South Korea's national security. Thus, investing in emerging technologies to develop defensive and offensive capabilities and to secure them is in South Korea's best interest.

- **Increasing interoperability with the United States:** The emerging technologies help enhance South Korea's interoperability with US assets that are also heavily invested in maximization of these technologies. Interoperability is a critical aspect of US–ROK military alliance cooperation that can further boost general data processing, the collection of ISR capabilities, and resiliency and readiness. Seoul has increased its expenditure on force improvement programs from 32.9 percent in 2019 to 38.2 percent in 2024.<sup>30</sup>

### **Emerging Technologies: ISR system, Missiles, UAV and VTOL, AI, and Autonomous Weapons**

Seoul's drive for emerging technologies coincides with its efforts to put forward a Fourth Industrial Revolution policy. While acknowledging the important merge of physical, biological, and cyber technologies, Seoul established the Presidential Committee on Fourth Industrial Revolution (PCFIR) on 22 August 2017 to focus on digital "ICBM" comprised of Internet of Things (IoT), cloud computing, big data, and mobile technology as its priority sectors.<sup>31</sup> Especially in the security domain, Seoul is investing in military buildups in the following areas to counter external threats: ISR systems and sensors, UAVs and VTOL capabilities, AI, and other autonomous weapons.

Strengthening ISR capabilities is becoming a priority for Seoul with the rising number of North Korean infiltration and reconnaissance attempts, border crossings, and China's assertive push in the waters of the theater. The ROK Air Force (ROK AF) on 23 December 2019 received its first Northrop Grumman RQ-4 Global Hawk, which has an enhanced integrated sensor suite (EISS) and airborne signals intelligence payload (ASIP) that enables sophisticated situation awareness and intelligence gathering. With an increasingly heavy emphasis on ISR, South Korea also signed a memorandum of understanding (MOU) with Israel to cooperate in the field of unmanned airborne intelligence, surveillance, targeting, and reconnaissance (ISTAR) on 15 March 2021. The MOU between Elbit Systems and Korea Aerospace Industries (KAI) targets developing future unmanned airborne ISTAR capabilities for the ROK AF and for international customers. Seoul

has four Boeing E-737 airborne early warning and control Peace Eye platforms, two Dassault Falcon 2000 ISR platforms, and eight Hawker 800 Peace Krypton signal intelligence and ISR platforms<sup>32</sup>.

UAVs are a central piece in ISR capabilities, and South Korea recently selected 11 AAF projects, seven of which were on UAV, two on antidrone technologies.<sup>33</sup> South Korea is investing in developing indigenous technologies such as a radar-linked antidrone integrated solution that uses active electronically scanned-array radar, sense-and-avoid navigation technology, and attack drones of many sizes and functions. The DAPA announced on 22 June 2021 that the ROK Army, Navy, and Air Force will test new indigenous anti-UAV technology developed by K-NETZ under a \$4.3 million contract.<sup>34</sup> The six-month trial of a “radar-linked anti-drone integrated solution” targets detecting micro-UAVs with radar cross sections of 0.01m<sup>2</sup> out to 8km to protect military facilities.<sup>35</sup>

The DAPA is investing \$2.5billion in purchasing three types of offensive UAVs—a suicide drone, an attack drone with a rifle, and a small-sized drone for reconnaissance and offensive operations. The suicide drone, a “fire-and-forget platform” is built by Datz Corporation; the attack drone, developed by UMAC and equipped with a 5.56mm K2 rifle and an electronic optics camera;<sup>36</sup> and the multifunctional drone is a VTOL small drone for ISR and precision strike capability developed by LIG Nex1 and SAMCO.

In addition, the Agency for Defense Development (ADD) announced in May 2021 that they have completed the development of “sense-and-avoid” navigation technology. The technology, which took four years to develop, will enable UAVs to autonomously navigate through obstacles and increase their survivability in battlefields. The ADD also mentioned its plans to “conduct research on artificial intelligence-based technologies that can recognize tactical solutions, and on technology that optimizes the simultaneous operation of multiple UAVs, as part of efforts to continuously improve the performance of UAV autonomy.”<sup>37</sup>

AI is another key component for supporting and advancing ISR capabilities and utilizing UAVs. In a joint venture with the private sector, the Research Center for the Convergence of National Defense and Artificial Intelligence was established by Hanwha and the Korea Advanced Institute of Science and Technology on 20 February 2018. The institution works on four research areas including: an AI-based command and decision system, composite navigation algorithms for mega-scale unmanned undersea vehicles, AI-based smart aircraft training system, and AI-based smart object tracking and recognition technology.<sup>38</sup>

Developed in 2018 by the Korea Institute of Science and Technology, Gyunma Robot, a four-legged unmanned combat vehicle is an example of robots with AI and deep-learning capability used for ISR and communication. Under a \$2.5 mil-

lion contract, the DAPA plans to deploy an AI surveillance system this October to strengthen the demilitarized zone border. The new system employs deep-learning technologies that allow its detection capabilities to improve constantly.<sup>39</sup> As part of an AAF project, the South Korean government has signed a contract for ten types of UAVs and drones to guard the nautical border against Chinese trawlers whose presence has been increasing—an average of 180 vessels were spotted in May 2021, three times more than a year before.<sup>40</sup>

These investments and developments in the emerging technologies sector contribute to building South Korea's defensive strategic weapons system, 3Ks, that is to be expanded into the Strategic Strikes System. Initially conceptualized to counter Pyongyang's growing missile capability, the 3Ks stand for Kill Chain, Korean Air Missile Defense (KAMD), and Korean Massive Punishment and Retaliation (KMPR). Kill Chain is a preemptive strike capability that can target North Korean nuclear missiles while launching is in process. It involves various precision guided bombs, sensor technologies, and ground and sea based ballistic and cruise missiles. The KAMD is a layered missile system that allows Seoul to intercept missiles in midair. The KMPR is more of an operational concept that emphasizes Seoul's second-strike capability and airpower using kinetic and non-kinetic capabilities such as ballistic and cruise missiles, blackout bombs, and electromagnetic pulse weapons.

Expanding on the concept of 3Ks, Seoul is spending heavily on airpower or missile capabilities, including building a \$2.56 billion interceptor system. The new system will detect, identify, and destroy any incoming short-range missiles, artillery shells, and UAVs. More robust 3Ks and the Strategic Strikes System became viable with the termination of the bilateral missile guidelines that took place in May 2020. The missile guidelines, first signed in 1979 as part of an agreement with the United States, had been restricting Seoul's missile development by limiting the range to under 800 km (500 miles) and payload to under 500 kg. Without these limits, South Korea can develop missiles that can reach more major Chinese cities and the latest revision notes that it has gained approval for developing solid-propellant space rockets.<sup>41</sup>

### **Strategic Motives and Opportunities**

Seoul's strategic motives for pursuing emerging technologies are threefold: strengthening the US–ROK alliance, nurturing the South Korean defense industry and bolstering related exports, and expanding Seoul's middle power status in Southeast Asia. The three strategic considerations are also related to new opportunities South Korea seeks in IPS cooperation.

First, the alliance commitment of the United States is indispensable to Seoul's security. While Pyongyang and Beijing try to loosen the linchpin, it is in Seoul's best interest to maintain and strengthen the bilateral alliance.<sup>42</sup> Investing in emerging technologies and further developing their applications to improve military capabilities help South Korea to consolidate the relationship by allowing South Korea to assume bigger roles in various fields in Indo-Pacific security cooperation. This may reward South Korea with growing prestige in the global political arena. In addition, having more stakes in global affairs through expanding networks helps internationalize the regional security issue of nuclear North Korea. This, in a practical sense, contributes to gaining global support and stronger agenda-setting powers, which will lead to more successful neutralization of North Korean threats and realizing reunification on the Korean peninsula in the long run.

Second, South Korea's defense industry has grown substantially in recent years. South Korea ranked ninth in international arms transfers with 2.7 percent global market share after Israel, who ranked eighth place with 3.0 market share; it was followed by Italy with 2.2 percent market share.<sup>43</sup> For example, Korea Aerospace Institute (KAI) signed a \$240 million contract to export T50s, supersonic jet trainer/light fighter jets, to Indonesia. Since 1999, KAI has exported T-50 advanced trainer jets and KT-1 basic trainer jets to Indonesia, Iraq, Thailand, Turkey, Peru, and the Philippines.<sup>44</sup> Annual average exports record \$3 billion for past decade, led by major companies in the defense industry such as KAI, Hanwha, LIGNex1, and Daewoo Shipbuilding & Marine Engineering.<sup>45</sup> Seoul's pursuit of emerging technologies is a way to nurture and strengthen its defense industry.

Last but not least, expanding Seoul's middle power status in Southeast Asia is another strategic motive South Korea carries. Mentioned under strengthening the US–ROK alliance, agenda-setting power is an example of middle power strategy. As the strategic importance of Southeast Asia rises due to intensifying Sino-US competition and potential conflicts in the South China Sea, East China Sea, and in Taiwan, Association of Southeast Asian Nations (ASEAN) countries are gaining Seoul's attention. Strong middle power status in the region provides opportunities to strengthen the US–ROK alliance by allowing Seoul to build tighter networks in Southeast Asia and linking the United States with ASEAN countries. Close networks with ASEAN countries also will be South Korea's valuable assets in the future, and emerging technologies are one of the keys that opens those doors.

## **Conclusion**

South Korea is faced with new threats to military strategy triggered by both improved and new capabilities supported by upgraded ISR sensors, precision technology, multifunctional UAVs, AI-based weapons, and deep learning. These emerging

technologies, however, are also providing opportunities for Seoul to become a more valuable ally and play expanded roles in the Indo-Pacific. That being said, Seoul needs to reconfirm its commitment to the strategic goal of the US–ROK alliance and put a foot forward in promoting the cohesive front of these aligned goals.

Supporting the US Indo-Pacific vision, Seoul should take proactive steps to operationalize military strategy in Indo-Pacific and can start with resuming joint military exercises, including large-scale joint military exercises, both command post exercises (CPX) and field training exercises (FTX), promoting dynamic information exchange, and role sharing to increase interoperability.

Its investment in emerging technologies in ISR systems, missiles, UAVs and VTOL, AI, and autonomous weapons will all be necessary for viable military strategy. Furthermore, these emerging technologies, when combined with Seoul's political determination, government-led defense industry, and its strong IT network will likely result in a positive push toward an essential role for Seoul in integrated military strategy in the theater. ★

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**Notes**

1. The Belt and Road Initiative has been China's long-term strategic plan since 2013 and focuses on transcontinental geoeconomic and geopolitical power projection of the People's Republic of China (PRC).

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## For Your Situational Awareness Autonomous Systems and Constabulary Tasking

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In an influential 1980 essay, Barry Buzan observed how trouble and dispute at sea obtains, not only from issues of naval rivalry and military balance but also the growing awareness that the world's oceans are not an inexhaustible source of resources. Overfishing and pollution jeopardize stocks of desirable fish. The volume of world shipping has increased so that there is now traffic chaos in congested waters. Demand has created a competitive rush to exploit the limited oil and industrial raw material resources in the seabed.<sup>1</sup>

In the Asia-Pacific—perhaps more than in any other part of the world—sea trade has increased, the exploitation of marine resources has increased, and tension over the demarcation of resources, especially fish, has increased. There is also the problem of large-scale crime.

In a 2013 report, the United Nations Office on Drugs and Crime detailed transnational crime in East Asia and the Pacific. Very often, the sea is a means for the smuggling of counterfeit goods and fraudulent medicines, for the trafficking of heroin, methamphetamine, and other drugs, for trafficking enslaved persons, for illegal migrant smuggling, and for the smuggling of illegal wildlife and illegal wood products.<sup>2</sup>

But unlike the North Atlantic Treaty Organization, no formal, regionwide collective security agreement unites nations in the Indo-Pacific. Rather, states are joined by a variety of multilateral or bilateral agreements. The Boe Declaration on Regional Security illustrates this point. On 5 September 2018 in Nauru, the Pacific Islands Forum, including Australia, recognized an expanded concept of security, including human, cyber, and environmental security and framed regional responses to emerging security issues. The Boe Declaration offers a “vision for the Pacific as a region of peace, harmony, security, social inclusion and prosperity so that all Pacific people can lead free, healthy and productive lives.”<sup>3</sup> In addition, Pacific Island nations supported an aerial surveillance program to be implemented through memoranda of understanding. But in certain crucial respects, the Boe Declaration and the memoranda are insufficient and merely prolong a collage of ineffective approaches to security cooperation.

Accepting (as Bateman and colleagues have) that “regional cooperation is fundamental to the maintenance of good order at sea in Southeast Asia,” and accepting (still following Bateman) that “effective multilateral institutions are required through which the requisite cooperation can be developed,”<sup>4</sup> this article looks at constabulary operations.

We contemplate a regional intelligence-gathering and -sharing convention. Such a convention would systematize and regulate the collection, analysis, and sharing of intelligence data. Such a convention is likely to become progressively more important as we realize the potential of autonomous systems to gather data.

### **Constabulary Operations**

Following Ken Booth, we recognize “constabulary tasking”<sup>5</sup> as a basic function of navies and as an essential responsibility of nations. Among the oldest<sup>6</sup> and most consequential of naval tasks,<sup>7</sup> constabulary operations are as much a responsibility as a right.<sup>8</sup>

The spectrum of constabulary tasking requires gathering intelligence about merchant shipping, the trafficking of contraband and people, fish stocks and fishing vessels, oil and gas platforms, and warship movements<sup>9</sup> so that states might work to secure conditions in which the peaceful use of the sea can be equitably and safely carried on.

However, what is plain in theory is blurred in practice.<sup>10</sup> For example, ships deployed on constabulary tasking might be involved in the benign supervision of national fisheries, securing them from irresponsible citizen fishers and from poachers. But anodyne, superintendent fisheries patrolling might not be benign. There are many cases of hot pursuit, gunfire, and apprehension. Navies have come to blows over fish, ships have been damaged and sunk, and sailors have been killed. Contested boundaries in the South China Sea demonstrate that a fisheries patrol might be very far from benign.<sup>11</sup> The point is that, in practice, constabulary operations are constabulary, but *at the same time* they are “presence” missions, a form of political gesture or gunboat diplomacy, linked inextricably to warfighting potential.<sup>12</sup>

The significance of this observation is in the scope of regional cooperation. Conceivably, a regional security convention *might* describe a far-reaching, inclusive, regional security arrangement. Arguably, there are reasons to commend such a broadly strategic relationship with objects to prosecute a wide-spectrum constabulary operations in the cause of “good order.” There are two models. The first is the Malacca Straits Patrols; the second is the Trilateral Maritime Patrols.

The Malacca Straits Patrols have been undertaken since 2004 by Malaysia, Indonesia, and Singapore, later joined by Thailand. Aiming to counter the threat of piracy in the Strait of Malacca, the patrols offer a year-round naval presence. The

participating governments offer coordinated surface and air patrols with an exchange arrangement for intelligence. The Trilateral Maritime Patrols is a similar agreement to defend against maritime crime in the Sulu and Celebes Seas. The three participating nations, Indonesia, Malaysia, and the Philippines, coordinate patrols and share intelligence.

Even though they demonstrate the feasibility of regional interstate cooperation, the Malacca Strait Patrols and the Trilateral Maritime Patrols are designed narrowly to defend against maritime crime. Our focus is equally constricted: the possibility of a convention that would systematize intelligence collection and sharing. The problems of operationalizing a response are beyond the scope of this article.

### **Maritime Security and Good Order**

Among the buzzwords of international relations, the term “maritime security” enjoys no definitive meaning.<sup>13</sup> Rather, “maritime security” is what W. B. Gallie described as an “essentially contested concept,” an ill-defined yet paradoxically well understood idea characterized by “endless dispute” about the proper meaning.<sup>14</sup>

The idea of maritime security implies defense from military threat. But the idea is larger and more inclusive than this.<sup>15</sup> Beyond military threat, the idea of maritime security entails a more general need for “good order.”<sup>16</sup> Following this reasoning, the 2014 United Kingdom National Strategy for Maritime Security recognizes risk from terrorist attacks against cargo or passenger ships; disruption to vital maritime trade routes as a result of war, criminality, piracy, or changes in international norms; cyberattack on maritime infrastructure or shipping; the transportation of illegal items by sea, including weapons of mass destruction, controlled drugs, and arms; and the risk of people smuggling and human trafficking.<sup>17</sup> Similarly, the Council for Security Cooperation in the Asia Pacific says:

Good order at sea permits countries to pursue their maritime interests and develop their marine resources in an ecologically sustainable, and peaceful manner following international law. Hence, a lack of good order at sea is evident [in] illegal activity at sea or inadequate arrangements for the safety and security of shipping.<sup>18</sup>

Good order is maintained since navies<sup>19</sup> and other agencies<sup>20</sup> prosecute constabulary tasks to enforce international laws and etiquettes. In part, these are laws and etiquettes that safeguard the oceans as a means of trade. Peter Gretton makes the point when he says:

World economic progress depends largely on the free exchange of goods and raw materials by sea. Without economic progress, the abolition of poverty and the raising of living standards will be impossible. Mankind will relapse into anarchy.

Freedom of movement on the seas brings great benefit to the Western world. Any obstruction is damaging; [thus] attempts to limit the extent of international waters and to control the international waterways must be resisted.<sup>21</sup>

In another sense, constabulary tasking defends against resources conflict and transnational organized crime.

### **Resources Conflict and Transnational Crime**

In *Mare Liberum* (1609), Grotius contended that the sea was an inexhaustible source of resources. Per John Seldon, our modern consciousness of the sea's limits is different. In *Mare Clausum* (1635), Seldon said: "Yea, the plentitude of such seas is lessened every hour, no otherwise than mines of metal, quarries of stone or gardens when their treasures and fruits are taken away."<sup>22</sup>

Since we recognize the seas' limits, we recognize the potential for resources conflict. This potential is complicated by the United Nations Convention on the Law of the Sea (UNCLOS), which establishes exclusive economic exclusion zones stretching 200 miles from the coast; it thus magnifies the prospect of disputed frontiers at sea and escalates the need for states to secure good order.<sup>23</sup>

In the Indo-Pacific, resources conflict is focused on fish. Eighty-four percent of the global population engaged in fisheries resides in the Indo-Pacific. Of an estimated 4.6 million global fishing vessels, the Indo-Pacific is home to a fleet of 3.5 million vessels, or 75 percent of the worldwide fleet.<sup>24</sup> Predictably, under the pressure of intensive fishing, Indo-Pacific fish stocks have maintained a declining trend since 1974.<sup>25</sup> This decline is compounded by the pressure of illegal fishing, which accounts for more than 15 percent of the world's wild fish catch.<sup>26</sup>

Regionally, the Indo-Pacific has seen the rise of bilateral tensions over fish. Thailand is one of the most significant fishing states in Southeast Asia, and local disagreements between fishers have escalated tensions between Malaysia and Thailand. Cross-border raids and the killing of Thai fishermen by Malaysians have been reported. Thai illegal fishers have impacted diplomatic relationships between Thailand and regional neighbors such as Myanmar and Indonesia. Moreover, in 2021, India and Sri Lanka were in a fisheries dispute regarding the Palk Bay area, which jeopardizes the food security of this coastal region. Compounding the issue is the increasing presence of large, modern fishing fleets from Japan, China, Korea, and Taiwan in regions known formerly for smaller-scale subsistence fishing practices. Modern technology allows incredible catch rates, against which the traditional fishermen cannot compete. Compounding the problem, under-resourced regional navies cannot prevent this type of advanced poaching.<sup>27</sup>

Resources conflict is aggravated by the rise of transnational crime, which is enabled by global trade agreements. With development of legitimate economic flows, there is the growth of a parallel criminal economy. This criminal economy involves the movement of illicit drugs and other goods, illicit wildlife, counterfeit products, and human trafficking.<sup>28</sup> Regionally, transnational crime might unfurl under cover of the Association of Southeast Asian Nations (ASEAN) economic community.

To respond constructively, states must invest in the apparatus and methods of maritime security and in technical capacity. States must also recognize the importance of regional partnerships. Good order is not the problem or the responsibility of any one state but the responsibility of all states.

Systems of globalized trade offer criminal groups an opportunity to operate across borders. Under cover of high-volume legitimate cross-border flows of goods, people, and money, contraband flows cycle through continents. For this reason, constructive intervention must be at the scale of the problem; national responses must be integrated into international strategies and formalized in an agreement, described in more official terms as a “concord” or “convention.”

## A Convention

A *convention* establishes the framework of law that scaffolds practical responses. The convention envisaged here would structure the sharing and analysis of information gathered by autonomous systems. Such cooperation would better enable nations to secure good order at sea.

The model convention and the main instrument in the fight against transnational organized crime, the UN Convention Against Transnational Organized Crime, opened for signature by Member States at a high-level conference convened in Palermo in December 2000 and entered into force on 29 September 2003. The Convention is supplemented by three Protocols: the Protocol to Prevent, Suppress, and Punish Trafficking in Persons, Especially Women and Children; the Protocol Against the Smuggling of Migrants by Land, Sea, and Air; and the Protocol Against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components, and Ammunition.

The Convention signifies recognition by UN Member States of the need for international cooperation to defend against transnational crime. States that ratify the Convention commit to take measures, including the creation of domestic criminal offenses, the adoption of extradition agreements, and the adoption of law enforcement cooperation agreements.



## ***Autonomous Systems***

Autonomous surveillance systems might be used cooperatively, as a *mutual* tool to advance good order at sea.

The search for Malaysian Airlines flight MH370 hints at the prospective utility of autonomous systems at sea. In 2014, the search for the missing aircraft was the most comprehensive search ever undertaken at sea.<sup>29</sup> But it was a search confounded by the domain. It was uneconomic and unfeasible for manned platforms to comb such a vast area. Unconstrained by fatigue, autonomous platforms might well have sustained the search for more hours per day, over a greater area, and at a bearable cost.

The United States Navy recognizes the way autonomous aircraft systems might bolster maritime domain awareness.<sup>30</sup> Similarly, the Royal Australian Navy has developed the Robotics, Autonomous Systems, and Artificial Intelligence (RAS-AI) Strategy 2040. This strategy recognizes the opportunities in technology and the need for collaboration with allies and other agencies.<sup>31</sup>

## ***What It Takes***

Maritime domain awareness requires constant surveillance. Thus, persistence—the ability to stay on mission for long periods of time—is a requirement of an autonomous system. To ensure persistence, autonomous platforms could be used in conjunction with satellite-based systems. Another way of boosting endurance could be by use of air-to-air refueling.<sup>32</sup> Another way to secure persistent surveillance is to work in conjunction with regional partners.

This highlights the requirement that systems be easily interoperable, or able to transfer data seamlessly to a central system for integration. Interoperability speaks to the idea that individual platforms are deployed as part of a larger system of sensors, potentially controlled by an autonomous software platform. Interoperability speaks to the collection, processing, analysis, and dissemination of data.<sup>33</sup>

Interoperability entails the need for suitable sensors. This includes radar, electro-optical systems, and sensors to detect radar and/or radio transmissions. A platform need not have all these capabilities, though a combination would make such a platform more flexible. Indeed, the use of different systems, including both aerial and surface platforms, would allow for greater flexibility.

## ***Autonomous Air Platforms***

Autonomous air (and surface) systems might complement satellite and ground-based radar, but we do not explore this sort of operation.<sup>34</sup>

The Royal Australian Navy currently operates the Schiebel S-100 Camcopter and the Boeing Insitu ScanEagle. The S-100 is useful in the maritime tactical role, identifying contacts of interest to determine whether these contacts require further attention and tracking, but is less useful as a surveillance platform as it does not meet the endurance requirement.

ScanEagle is more utile and suited to a variety of constabulary taskings, including long-endurance intelligence surveillance and reconnaissance, ocean mapping, and communications relay. ScanEagle was deployed aboard HMAS *Newcastle* during a deployment to the Middle East region during Operation MANITOU in 2017, where it conducted surface search operations in the western Indian Ocean looking for possible narcotics smuggling dhows, as well as tracking and monitoring contacts of interest before interdiction by the ships' boarding party. ScanEagle was used in conjunction with the ship's MH-60R helicopter, showing the potential of autonomous-crewed teaming, albeit at a very basic level with the two platforms operating independently but cooperatively.

The Royal Australian Air Force (RAAF) is acquiring six MQ-4C Triton unmanned air systems.<sup>35</sup> Triton, a maritime version of the venerable Global Hawk, can sustain missions up to 24 hours and is equipped with a sensor suite for detection and tracking 360-degree views for over 2,000 nautical miles.<sup>36</sup> This is exactly the kind of persistence needed for maritime domain awareness taskings.

Additionally, the RAAF is breaking ground with its Loyal Wingman program. The Loyal Wingman, "a pathfinder for the integration of autonomous systems and artificial intelligence to create smart human-machine teams," has successfully completed its first test flight.<sup>37</sup> It has been designed to fly, as a partner, with crewed aircraft. This opens numerous possibilities, including surveillance, where the Loyal Wingman could be paired with an aircraft such as the P-8 Poseidon. The P-8 could provide wide-area coverage while the Loyal Wingman was tasked to investigate contacts of interest: ships acting suspiciously or encroaching into disputed areas, for example.

Further potential of the autonomous system is demonstrated by the MQ-25 Stingray. A project between the US Navy and Boeing, the MQ-25 Stingray is a next-generation unmanned aerial refueling aircraft. The MQ-25 will have the capability to deliver up to 6,800 kg (15,000 lbs.) of fuel to a distance of 926 km (500 nm) and can refuel the F/A-18 Super Hornet, EA-18G Growler, and F-35C fighter jets, significantly extending their range and time in the air.<sup>38</sup> Significantly, on 4 June 2021, during a test flight, a MQ-25 successfully and safely transferred jet fuel to a US Navy F/A-18 Super Hornet, making it the first UAV [unmanned aerial vehicle] to refuel another aircraft.<sup>39</sup>

The MQ-25 demonstrates potential in the combination of UAV and traditional aircraft. When UAVs refuel aircraft such as the P-8 Poseidon, the potential for super long-endurance maritime domain awareness missions is obvious. And there is the possibility of machine-machine teaming. For example, a UAV like the Loyal Wingman might partner with an MQ-25 for refueling. Such teaming would allow autonomous systems with already long endurance to have even greater persistence, cover even greater distances, and (feasibly) gather a greater volume of information.

The significance of the capability lies beyond the combination of different systems from the one nation. The larger potential is in the conjunction between nations, where platforms cooperate to gather data, analyze data, and compile a regional common operating picture.

### ***Autonomous Surface Platforms***

Beyond autonomous air systems, significant advances have been made in autonomous surface vessels. Small remotely controlled surface vessels have been in use by various navies around the globe for decades, such as the Singapore Navy's *Protector*, an armed RHIB-sized patrol craft that has been deployed operationally in the North Arabian Gulf.<sup>40</sup> However, larger autonomous surface vessels have not come into their own until very recently. The United States Navy has been working on several different programs. First, there is the Medium Displacement Unmanned Surface Vessel program. Two medium displacement vessels are in service: *Sea Hunter* and *Sea Hawk*.

In late 2018, *Sea Hunter* sailed from San Diego to Pearl Harbor and back, a round trip of 5,200 miles, completely autonomously.<sup>41</sup> The Ghost Fleet Overlord Unmanned Surface Vessel program has also enjoyed success. The Ghost Fleet Overlord unmanned vessels *Nomad* and *Ranger*—each larger than *Sea Hunter* and *Sea Hawk*—have completed journeys from the East Coast to the West Coast of the United States, transiting through the Panama Canal with a reported 98 percent autonomy.<sup>42</sup>

Looking further ahead, the US Defense Advanced Research Projects Agency has a project for a No Manning Required Ship (NOMARS). The NOMARS project seeks designs for a future unmanned ship that “aims to challenge the traditional naval architecture model, designing a seaframe from the ground up with no provision, allowance, or expectation for humans at sea.”<sup>43</sup> None of these current projects is focused on integrating weapons onto the platforms—only sensors and other systems, making them ideal for surveillance work.

Autonomous surface platforms do not have the sensor range of aerial systems, but they have the capacity to work when weather precludes aerial systems from flying or from offering effective surveillance.

In addition, surface platforms offer a presence that is beyond an air platform. The unmistakable physical presence of a surface platform in high-interest or contested areas could be of value in monitoring contested fishing grounds or resource exploration areas.

Just as aerial systems can be teamed to operate in conjunction with manned platforms, manned surface platforms could utilize smaller autonomous surface vessels. A large manned platform could utilize these smaller autonomous vessels to cover a wider area, including in shallow coastal, littoral, estuarine, and riverine environments that are inaccessible to deeper-draught manned platforms. The ability for small autonomous systems to operate in such an environment would be invaluable, especially defending against activities such as piracy, smuggling, and trafficking in people.

### ***Autonomous Systems—Software***

The artificial intelligence (AI) algorithms that make sense of big data to build a common operating picture and enable better decision-making are critically important. This article contemplates a convention or agreement to frame cooperative data analysis so regional partners might better undertake mutual constabulary tasking.

In Australia, several Defence Cooperative Research Centres have been established to link industry with researchers and the Department of Defence.<sup>44</sup> The first of these centers to be established was Trusted Autonomous Systems.<sup>45</sup> A program of note here is the Cognitive Intelligence Surveillance Reconnaissance program led by Boeing Australia. Approved in March 2019, “this project will examine the embedding of machine learning techniques on board an uninhabited system to better understand and react to the environment. The project will design and test cognitive artificial intelligence algorithms to enable sensing under antiaccess conditions and to navigate and conduct advanced behaviours in contested environments.”<sup>46</sup>

While operations envisaged in this article do not involve contested environments, an autonomous system will still need to react to the environment. It will be important to determine which contacts are of interest and worthy of further investigation and which contacts can be assigned lower priority.<sup>47</sup>

Importantly, software and systems are upgradable, so platforms may become more capable over time as systems are upgraded. This has the benefit of cost-effectiveness and fewer worries over platform obsolescence. This in turn ensures that maritime domain awareness remains an affordable mission profile for the stretched defense budgets of the region.

As with all new technologies, it is hard to predict where autonomous systems will be in the future. What is clear is that autonomous systems will surely play a larger part in the surveillance and constabulary missions that are critical to good

order. Intelligence gathered by these systems must be collated, analyzed, and distributed to inform operational plans and strategies.

### ***Intelligence Fusion***

In 2000, the Japanese government invited representatives to a conference that came to be the seed for the Regional Cooperation Agreement on Combating Piracy and Armed Robbery Against Ships in Asia (ReCAAP). Formalized on 11 November 2004 with 21 contracting parties, including Australia, the ReCAAP offers a significant example of collaboration in the Information Sharing Centre in Singapore.

The Information Sharing (or fusion) Centre is the region's first multilateral antipiracy and armed robbery establishment. The center facilitates the intelligence collation and statistical analysis and enables the generation of cooperative best practice in operations to defeat piracy and armed robbery at sea. Beyond the collection, analysis, and sharing of intelligence gathered by the contracting parties, the ReCAAP fusion center engages with a variety of nongovernment agencies committed to the extinction of piracy. The fusion center thus serves as an excellent model, as it demonstrates the feasibility and the benefit of systematized information exchange and the power of a common will to tackle a global problem.

### ***The Common Will***

This article contemplates a convention to regulate the cooperative use of autonomous systems so regional partners might better undertake constabulary tasking. Such a convention would symbolize a common political will to put down resource conflict and transnational maritime crime.

Edward Luttwak speaks to this idea when he outlines his theory of suasion. Outlining the political uses of sea power, Luttwak speaks to political influence that obtains from a practical capability and from the symbolism of national intent.<sup>48</sup> Where Luttwak spoke of ships, arguably similar influence might obtain from the capability of autonomous systems and collaborative data analysis. This is because a convention concerning information-gathering and -sharing would enable a coordinated constabulary response (practical capability) and demonstrate a mutual political will (symbolism of intent).

The practical wherewithal of a convention is demonstrated in the UNCLOS. In part VII, articles 100–105, the UNCLOS deals with piracy, defining the act (article 101) as “any illegal act of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed: (i) on the high seas, against another ship or aircraft,

or against persons or property on board such ship or aircraft; (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State.”

Recognizing piracy as a transnational problem, the UNCLOS made it feasible for states to collaborate in a transnational solution. Such a solution was, at least in part, in Operation MALSINDO against piracy in the Malacca Strait.<sup>49</sup> MALSINDO was an initiative between Malaysia, Singapore, Indonesia, and, later, Thailand. A system of communication and coordination made it feasible for ships from participating nations to operate effectively against pirates and thus to uphold the general good order.

Saying this, we recognize some acts are offenses against all people and against all nations. In his *Commentaries* on the laws of England, Blackstone says: “The crime of piracy, or robbery and depredation upon the high seas is an offence against the universal law of society; a pirate being . . . hostis humanis generis.”<sup>50</sup> *The pirate has renounced the benefit of all society, and all society is against him.*

The modern idea is in the claim of universal jurisdiction. Speaking to this claim, the Israeli Supreme Court in the Eichmann trial (*Attorney General of the Government of Israel v. Eichmann*, 36 IRL 5) cited the long jurisprudence that maintains that some crimes are not offenses against the law of one nation but offenses against the law of all nations (*delicta juris gentium*). The doctrine of universal jurisdiction came to more recent prominence and found ratification in a set of three constitutional law judgments by the House of Lords. The judgments confirmed that certain crimes are against the law of all nations<sup>51</sup> and implied that all nations should defend against these crimes.

## Conclusion

“Maritime security” enjoys no definitive meaning. But it is understood to involve ideas of good order and to depend upon partnership—a shared commitment to political and economic stability, equal justice, and human flourishing.

Good order is advanced when nations prosecute constabulary operations, which are described by Ken Booth as operations concerned with the “maintenance of public order” to the extent of the economic exclusion zone, much like the civil police keep the streets safe.<sup>52</sup> Of these constabulary tasks, the “coast guard” responsibility is described as the most important and is acknowledged to be one that might be undertaken by a navy or by a navy in combination with other agencies. Constabulary tasking can be, at least in part, a mutual endeavor undertaken by regional partners.

Recognizing that the spectrum of constabulary tasks calls for substantial intelligence-gathering and data analysis, we have contemplated a regional convention or agreement. Such a convention, we propose, would systematize and

regulate the operation of autonomous systems, which are so important in the intelligence-gathering role. ⚙

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# Let Taiwan and the Quad Fight Side by Side

## How Can the Quad Incorporate Taiwan into Its Military Deterrence against China?

DR. LIANG-CHIH EVANS CHEN

### Abstract

In response to a highly potential military confrontation in the Taiwan Strait, both the United States and Taiwan must look for a strong *collective* defense framework against China's threat, and the Quadrilateral Security Dialogue (QSD or Quad), composed of the United States, Japan, Australia, and India, is a decent platform for that concept. The Quad has a good basis for developing a mutual security system in the Indo-Pacific, although it is still far from a real military alliance. I contend that the Quad can keep working on legalizing and institutionalizing the mechanism while also developing its military strategy. At the same time, the Quad and Taiwan can develop to incorporate one another into their mutual defense network starting with lower-grade meetings, then moving to summits and foreign affairs-defense (2+2) ministerial conferences, intelligence sharing, joint staff assignments, and joint military exercises. The Quad-Taiwan defense cooperation preserves several options to establish their common military strategy and accumulate energy in deterring and denying China's island invasion plan. Rather than enthusiastic discussions of these "the Quad Plus Taiwan" issues, however, going back to the beginning to persuade each other to take the next step is more important.

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As China's military threat to the Indo-Pacific region is quickly increasing, the United States is also expanding its military presence in the area to counterbalance potential tensions and uncertainties raised by the People's Liberation Army (PLA). Although Washington is still a global military hegemon, the US government recognizes that there is a need to establish a *collective* defense mechanism in the Indo-Pacific to deter Beijing's military intentions and actions. The Quadrilateral Security Dialogue (QSD or Quad), composed of the United States, Japan, Australia, and India, has been a strategic platform or forum that

holds summits and other meetings on regional security issues since 2007. In previous years, the Quad moved quickly in a military security direction, and the Quad's content switched to a military alliance from concepts of "framework" or "network."<sup>1</sup> Following that development, the Quad seems to be the major foundation for Washington and its allies and partners to counteract Beijing.

It is assumed by Stephen Walt that an aggregate military power is mightier than merely one or two individual powers, and can generate greater deterrence against a potential rival.<sup>2</sup> In practice, however, the Quad is still far from a real military alliance. This implies that if the United States seeks to build up an Asian North Atlantic Treaty Organization (NATO) in the Indo-Pacific, the Quad is a good model providing a strong foundation but leaving considerable room to catch up. In other words, the security and military personnel of Quad members and others might need to consider the *legalization* and *institutionalization* problems of a future Asian collective defense mechanism before they can discuss what military strategy and military capability the alliance can have.

Although legalization and institutionalization of the Quad are important to establish a collective defense mechanism in the Indo-Pacific, discussions on these matters might not keep pace with strategic environment changes in the region. In fact, China's various military actions, such as militarization of the South China Sea (SCS) islands, growing intrusions into Taiwan's air defense identification zone (ADIZ), increasing aggression surrounding the Senkaku Islands, and gray-zone operations already raise great challenges for the Quad and have made the security situation in the West Pacific more complex. Therefore, Quad member states and other Indo-Pacific countries must continue developing a multilateral defense mechanism as well as accelerate outlining their common military strategy.

In outlining a military strategy against China's threat, the Quad must recognize its strategic environment first. Compared to the South and East China Seas, a military confrontation is more likely to take place in the Taiwan Strait.<sup>3</sup> This implies that the Taiwan Strait is most critical, geopolitically, and strategically, to the Quad and the Indo-Pacific. The reasons are as follows: First, in the SCS, as China has moved to the stage of militarization of the islands it occupies, it is expected that China will build more military bases in the SCS, and that raises difficulties for Washington to counterbalance against Beijing. For China, the marginal benefit of launching a war in the SCS is not great, and it can instead choose to continue expanding its strategic strong points until they cover most or all of the region. Second, in the East China Sea (ECS), China is hesitant to attack Japan due to the mutual defense mechanism between Tokyo and Washington. Real, meaningful control of the Senkaku Islands requires Beijing to attack, land, occupy, and *militarize* the islands. For China, these military operations are costly and risky,

and it is very difficult to calculate the military's chance of winning a war against a joint US-Japan force. Third, although a military invasion of Taiwan is as costly and dangerous as China's military occupation of the Senkaku Islands, the marginal benefit to China would be *overwhelmingly* huge if it successfully took over the island. Once China controls Taiwan, Beijing not only can disconnect the communication lines between the SCS and the ECS but also pass freely through the First Island Chain. Beijing always considers preserving its vast military advantage over Taipei with other political, economic, and social measures to influence the island. If Beijing could eliminate a military intervention by Washington or could win the war against Taiwan as quickly as possible, before Taiwan receives any international assistance, the Chinese military would invade Taiwan. Certainly, Washington's strategic ambiguity also leaves space for Beijing to seize any opportunity to accomplish its historical mission.

Based on argument above, the Quad needs to develop its military strategy and operations by incorporating Taiwan's defense capability and Taiwan must look for military cooperation with the Quad as well. Thus, this article seeks to answer the following questions: What will it take, and how, for the Quad to strengthen its collective defense mechanism, and what and how can Taiwan participate? What military strategy can the Quad and Taiwan use to work together to construct a common deterrence and denial to China's military threat? And what military capability can the Quad and Taiwan build together for operations in the future battlefield? In the end of the article, I conclude that both the Quad and Taiwan need to persuade each other to take the next step to start their dialogues, communications, and exercises of mutual defense cooperation.

## **The Quad and Taiwan's Participation**

### ***Options for an Asian Collective Defense Mechanism***

The Quad has a good basis for developing a strong mutual defense system in the Indo-Pacific, and NATO is an excellent model for how to develop an actual *Asian* collective security mechanism. Although the Quad is expected to be an "Asian NATO" by many advocates, there are several reasons discouraging the forum from forming a solid military alliance mirroring NATO in Europe. First, an examination of various security environments, threat perceptions, and defense strategies of not only the member states of the Quad but also other states in the Indo-Pacific shows it is highly challenging for them to build up a true multilateral military alliance, although the states recognize China's expansionism is most likely to endanger peace and stability in the region.<sup>4</sup> Second, another difficulty is

due to a historical factor. Victor Chan defines the US choice of bilateral alliances in East Asia after World War II as a “powerplay,” arguing that Washington preferred to exert its control over potentially dangerous allies, such as South Korea, Taiwan, and Japan, during the Cold War period. Because the United States did not want to be entrapped in these countries’ specific military confrontations with either Communist China or the Soviet Union, implementing a bilateral mutual defense model instead of a multilateral one was easier for containing allies and safer for preserving security in Asia.<sup>5</sup>

To promote the Quad as a strong collective defense system for balance of power in the region, the Quad and Indo-Pacific nations also face two hidden conflicting options. One choice follows NATO as a raw model. The nations work on *legalizing* and *institutionalizing* the mechanism as a standing organization based on international conventions and the shared commitment and consensus of the member states. Although this option can establish a solid, viable, and credible unity to deter China’s threat, the weakness is that setting up the regime is very time-consuming, and it might not keep up with the pace of China’s military development. Another option is to abandon the thinking of the NATO model and concentrate on continuing and upgrading military cooperation through the Quad framework instead of crafting a hard unit for the nations. There are also two sides to this option: The advantage is that the Quad could be able to respond to contingencies with greater flexibility, but the disadvantage is members might not be united in action, and there are no legal constraints compelling them.

Regarding the dilemma involving this course of action, I contend that the Quad member states and other Indo-Pacific nations must keep working on legalizing and institutionalizing the multilateral defense mechanism while also moving toward a true Asian NATO in terms of military cooperation. In other words, considering the formalization of the organization is not a precondition for the Quad to develop its defense plan, conversations about institutionalization are not immediately beneficial to the Quad. At this moment, accelerating to summarize a common military strategy and demonstrating deterrence and denial capabilities in confronting China’s military challenge are more important to the Quad.

Interestingly, the Quad is not a tight mutual defense alliance but a relatively loose and flexible framework for similar-minded nations to communicate and cooperate with each other on a wide range of topics, military and nonmilitary. The idea of “Quad Plus” is also flexible and calls for other states without membership but with deep connections to regional issues to participate in the mechanism.<sup>6</sup> As the Quad seeks to accumulate power, intelligence, and energy of related states in the Indo-Pacific to preserve balance in the region, Taiwan, the actor most directly



on the Quad's security agenda, should be willing and welcomed to participate in the Quad's defense framework.

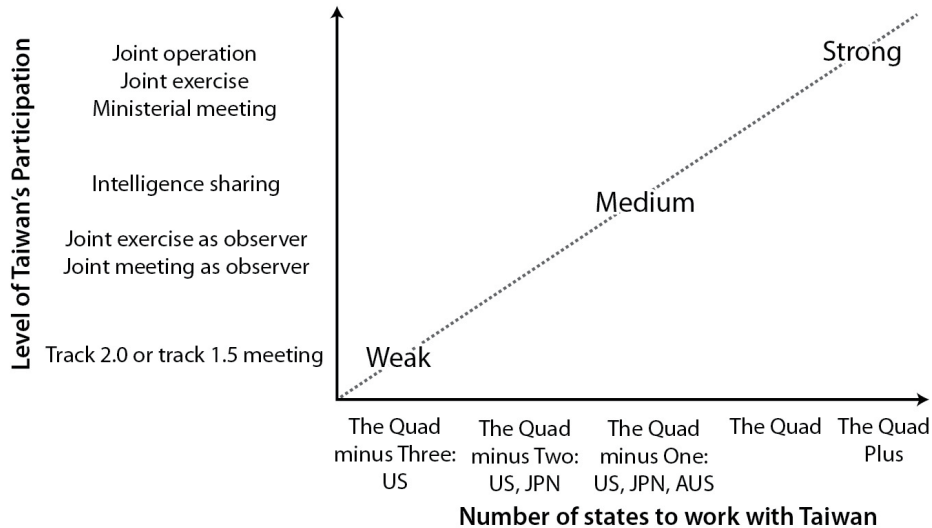
It is true that while the larger security concern may be shared between the Quad (and the Quad Plus) constituent members, their threat-perceptions of China are not always the same. However, Taiwan's threat by China is strongly connected to the development and security of the Quad as well as the whole Indo-Pacific region. Compared to the Quad member states, the case of Taiwan's threat from China is much more urgent and is completely a fundamental issue of *survival*. An invasion of Taiwan by China is primarily a strategic-*existential* threat to the island. In contrast, relationships between the Quad members and China are a matter of *development* in a long term. Their struggles with China are more defined as a strategic-*developmental* competition rooted in their conflictual strategic ambitions. The Quad and the Quad Plus need to realize that once they lose Taiwan to China, their survival is perhaps not threatened by Beijing immediately, but development and security will be surely coerced sooner or later. They will also lose strategic advantages to Beijing and competing with China will be costlier.

### ***Co-participation of the Quad and Taiwan***

As I posit above that a military confrontation is more likely to take place in the Taiwan Strait, compared to contingencies in the SCS and the ECS, it is reasonable for the Quad and Taiwan to incorporate one another into their mutual defense framework. Although Taiwan has indicated a strong wish to defend itself, increasing its military cooperation with and connection to the regional defense network is not only beneficial to the island per se but also a great advantage to peace and stability in East Asia. In the same way, without Taiwan's involvement, the Quad is unlikely to react to a contingency in the Taiwan Strait appropriately.

However, an examination of the international situation shows that it is not particularly easy for the Quad and Taiwan to work together on a military security agenda. The main reason is that both sides are still concerned about China's response and the uncertainty of deteriorating the status quo in the Strait. Although Taiwan gained considerable diplomatic and military support from both the Trump and Biden administrations over the past years, Taiwan's political and military relations with the Quad were still very limited. There are two key dimensions to look at in future cooperation between the Quad and Taiwan: One is the number of states working with Taiwan on the military security issue, and the other is the level or type of Taiwan's participation with the Quad in mutual defense teamwork. See Figure 1. From the perspective of the number of states that work with Taiwan, the ideal scenario for Taiwan, and the worst for Beijing, is if all four Quad member states (the United States, Japan, Australia, and India) and other states (the

Quad Plus) cooperate with Taiwan on deterring the threat posed by China's military. However, achieving this scenario would be very difficult. In reality, only the United States appears to diplomatically and militarily support Taiwan—but even then, without official recognition or a mutual defense pact between the two countries. Recently, Japan seems to have changed its attitude toward the Taiwan issue and become active to the possible warfare in the Strait.<sup>7</sup> But the other two Quad members are less likely to work together with Taiwan. From the perspective of the level of Taiwan's participation in the Quad, there are various types of Taiwan's engagement from low to high. Taiwan and the Quad can start with the lower grade to hold track 2.0 or track 1.5 meetings, for either nongovernment or lower-level government, to discuss the security environment and the network's defense strategy. Then, Taiwan and the Quad could share intelligence, or the Quad could invite Taiwan to attend a joint conference or military drill as an *observer* in the interim phrase. This would indicate both sides intend to promote military cooperation. Last, at the highest level of cooperation, the Quad and Taiwan could hold summit and foreign affairs-defense (2+2) ministerial meetings and incorporate Taiwan into the Quad's joint military exercises and operations. Undoubtedly, the two models of Taiwan's participation at the medium and highest levels will be strongly opposed by China, and as a result will not be accomplished easily.



**Figure 1. The Quad and Taiwan: Two Dimensions to Look at Their Cooperation**

Although there are challenges that prevent the two from cooperating, the Quad and Taiwan can work together step by step and start with track 2.0 or track 1.5 dialogues first. Inviting Taiwan as an observer to attend joint military meetings

and exercises will definitely upset China, but the Quad is unlike the United Nations and the World Health Organization, and Beijing is neither a member nor a leader of the security framework. The Quad should preserve its independence to develop its own strategy without fear of China's anger. Additionally, sharing defense intelligence is a good option for the Quad and Taiwan, as information is critical either for their assessment of the situation or a future military operation against an attack by China. A "Quad Plus Taiwan" cooperation framework on intelligence sharing and information exchange could be another Five Eyes to more precisely survey and interpret Beijing's development.

### **The Common Military Strategy of the Quad and Taiwan**

Good management of the strategic environment in the Indo-Pacific region is critical to see if the Quad and Taiwan can successfully construct and carry out a mutual defense strategy. From the perspective of the big picture, as there are several hot spots that could blow up into military crises in Asia, the United States and its allies and partners must properly respond to situations on the India-China border and in the SCS, the Taiwan Strait, the ECS, and the Korean Peninsula simultaneously if possible. As situations in the other four areas are under their control, it is easier for the Quad and Taiwan to prepare for a contingency in the Strait. Yet some might argue that the US military is unable to take on two major regional conflicts at the same time.<sup>8</sup> There is a similar question for China as well: Can Beijing simultaneously conduct two or more large military confrontations in Asia? The same question or challenge seems fair to the Quad and China, which implies both might not be able to handle two or more major military conflicts at the same time.

### ***Deterrence and Denial***

Regarding the Quad-Taiwan mutual military strategy, I contend the need to implement a strategy of both deterrence *and* denial in the Taiwan Strait. In his work "Indo-Pacific Deterrence and the Quad in 2030," Justin Diehl contends the Quad must employ a strategy of Deterrence by Denial to develop credible military capabilities and integration to deter China's hostility and assertiveness.<sup>9</sup> Diehl's theory is applicable to the Quad, and the framework is founded on an effective military architecture demonstrating its reliable deterrence capability against China. A powerful denial capability not only can derail the rival from achieving its ambition but also can increase the cost of launching a military confrontation. Once the rival hesitates to take military action to fulfill its goal, the denial strategy has a deterrence effect in avoiding war. However, if one side already conducts deterrence and denial strategies at the same time, and the deterrence

works, the side likely will not be convinced to either discard the deterrence or the denial to focus on one single strategy.

The Taiwan Strait situation is similar to the deterrence and denial picture above because Taiwan and the United States have separate deterrence and denial strategies. While Taipei's own defense capability demonstrates its resolve to implement this dual strategy against China's military threat, Washington's military operations in Taiwan's surrounding areas and its arms sales to the island show the United States is conducting a deterrence and denial strategy in the Strait as well. In response to China's military threat to the Strait and potential invasion of Taiwan, the key principle for Quad–Taiwan mutual security cooperation should be *maximizing* their energy in deterring and denying China's plan for taking over the island.

Based on argument above, I outline two new directions for how the Quad and Taiwan can work together to strengthen their collective deterring and denying capabilities against China. One is to create a Quad–Taiwan joint deterrence force today and then upgrade its deterrence capability over time. Doing so will seriously increase the cost of direct conflict, and Beijing will recalculate its island attack project. There might be no clear line between deterrence and denial in this case because they are strongly *interdependent*. As the Quad and Taiwan increase their mutual deterrence capability, that implies they also expand their joint military energy, and vice versa. Instead of focusing on the United States or on US–Japan cooperation, the key is to invite more friends to stand by Taiwan and to increase the level of Taiwan's participation in the Quad–Taiwan mutual defense mechanism. Therefore, the following military operations are recommended:

1. Establish new Freedom of Navigation Operations (FONOPs) in the Taiwan Strait. The Quad–Taiwan security mechanism can follow the example of the US 7th Fleet's patrols in the Taiwan Strait during the Cold War and ongoing FONOPs to form various multinational naval transits, including Taiwan's navy, in the Strait, rather than current trips by US warships alone. The greater the internationalization of the Taiwan Strait, the higher the difficulty for China to cross the Strait. This principle can be applied to the SCS and the ECS as well.
2. Create a “co-fly and co-navigate” model for aircraft and vessels. As the PLA Air Force (PLAAF) conducts a strategy of intruding into Taiwan's ADIZ and flying over the median line in the Taiwan Strait, the Quad–Taiwan air forces and navies can execute a new model of flying and navigating side by side nearby the island. Unlike Taiwan's dispatch of its fighters to track PLAAF military planes, the Quad–Taiwan air forces can “run into” each other in the international airspace “by chance” and then take the opportunity to drill their shared air operations and tactics. This sce-

nario can also be used for the navies. The model will send a very strong military signal as well as a political message to Beijing.

3. Set up a Quad command center and send standing military staff to the hub. The Quad and Taiwan can establish a full or semi-joint operation command center whether the mechanism chooses to set up its headquarters or not. Standing military staff of each member can be sent to the center to carry out staff assignments for operations. The organizational size of the command center is flexible depending on how critical the situation. The more dangerous the situation, the larger the unit structure. Additionally, the Quad and Taiwan also need to define the role of the command unit and clarify its relationship with the US Indo-Pacific Command.
4. Conduct a series of joint Quad–Taiwan war games and military exercises. The Quad and Taiwan can run a series of war games and military exercises based on the joint staff assignments. This operation can increase Quad–Taiwan mutual defense energy creating great deterrence against China as well as simulate and test the allies’ war plan in a real situation.

Another way to enhance Quad–Taiwan mutual deterring and denying capabilities is to examine the PLA’s possible invasion scenarios and Taiwan’s corresponding operation plans. During each stage of the PLA’s attack, Taiwan has strengths and weaknesses in reacting to the strike. The Quad and Taiwan should work together to reevaluate the island’s advantages and disadvantages in these operation scenarios and try to simultaneously improve the strengths and compensate for weaknesses. Some detailed military strategies are suggested as follows:

1. Enhance the Quad–Taiwan intelligence-sharing capability. Accurate intelligence and information are fundamental for examining and interpreting China’s intentions and actions. The Quad and Taiwan must maximize sharing of their intelligence on the PLA’s movement, especially on its missile deployment and mobilization of the landing platform and personnel, including amphibious vessels and airborne troops. Intelligence sharing should start *before* the war begins and continue throughout the whole defense operation.
2. Work together to control the Miyako and Bashi channels before or right at the beginning of war. It is difficult to predict if the PLA will attack Taiwan from the west only or from the west, east, and elsewhere simultaneously. If the battlefield can be limited to Taiwan’s west, defending will be relatively simple for Taiwan and its allies. Thus, discouraging the PLA Navy (PLAN) from deploying its force east of Taiwan, between the First and Second Island Chains, is very important, and the Quad and Taiwan need to block off the Miyako and Bashi Straits together. They can divide

the job—while the Quad can work with Japan in the Miyako Channel, it can collaborate with Taiwan in the Bashi Channel.<sup>10</sup> Currently, they have the advantage.

3. Assist Taiwan in increasing its antiblockade and antibombing capability. According to Ian Easton's three major stages of warfare with Taiwan, the first phrase is blockade and bombing by the PLA to prevent Taiwan from resupplying and communicating with the rest of the world.<sup>11</sup> The bombing also aims to weaken and destroy Taiwan's will and counterattack capability against the PLA. The Quad should work with Taiwan to break through the PLA's control of the air and sea and fearlessly clash with the PLA. The Quad can strongly insist on providing transportation and assistance to Taiwan and work together to break the PLA's air and sea control by increasing the Quad and Taiwan's common antimissile capability. This stage is very decisive, and the Quad and Taiwan need to show their resolve right at the beginning of the war. If not, the cost of the coming warfare will increase significantly.
4. Assist Taiwan to protect its counterattack capability. Taiwan's Overall Defense Concept (ODC) highlights that the island must transfer its fighters and battleships to military bases on the east coast to preserve forces.<sup>12</sup> Yet this strategy might not be strong enough to preserve Taiwan's counterattack capability. I contend that the Quad must assist Taiwan to maintain its air force and navy—while Taiwan's fighters can be either predeployed or transferred to airbases in Japan's southwest islands, Taiwan's battleships remain with the Quad naval fleets east of Taiwan. Undoubtedly, the deployment will be highly risky for the Quad (and Taiwan, too), but it is the same to China because Taiwan can maintain its counterattack capability and a joint Quad-Taiwan military force may participate in a war.

### **Another Alternative: Sourced-Attack on the PLAN's Amphibious Force**

In addition to the ODC and joint operations, *asymmetrical warfare* and *innovation* are two critical terms for reconsidering Taiwan's defense strategy during the years in the past and in the future. I propose another alternative mutual military strategy for the Quad and Taiwan; that is, they can conduct a medium- or large-scale sourced-attack targeting the PLA's amphibious vessels and personnel as China initiates the first strike on Taiwan.

If Taiwan suffered a first strike from the PLA (Taiwan would most likely face severe bombing with a huge number of missile attacks at the beginning of the

conflict), the island would have to reconsider its counterattack capability seriously in that moment, beyond focusing solely on force preservation. Protecting its fighters, vessels, ground force positions, and critical infrastructure would be important while under the attack, but this does not necessarily mean that Taiwan and the Quad would need to postpone their counterattack until they moved to the second stage. Instead, the Quad–Taiwan side should be active and start with a sourced-attack operation to break down the PLA’s impending assaults. A reasonable logic works as follows: First, China’s ultimate goal is to take over Taiwan. If China does not occupy the entire island, then the PLA’s dozens of military actions are meaningless to Beijing. Based on this theory, Taiwan and the Quad must reset their goal for the Taiwan Strait operation, which looks to *deny* the PLA’s attack and invasion of the island, instead of entirely defeating the Chinese armed forces. Second, for China to take over Taiwan, the PLA must deliver its amphibious forces across the Taiwan Strait and land on the island’s beaches. In the process of sending amphibious forces, the PLA must dominate the air and sea, covering the advance of the amphibious vessels and personnel. As Taiwan does not have an equivalent scale of weapons and armies that can compete with its Chinese counterpart, in the no international assistance scenario, the island must distinguish the priorities of its military targets and accurately and economically focus on those objectives. In the international assistance scenario, Taiwan and Quad can more economically distinguish the priorities of their military targets and concentrate on them.

Because the PLA’s amphibious assaults would be launched from military bases and positions on China’s coastline (most likely in Fujian, Zhejiang, and Guangdong), Taiwan and the Quad would need to target these potential military facilities and bases. As the PLA’s invasion of Taiwan and landing operations would rely heavily on naval vessels, especially amphibious forces and transport docks, it is strongly recommended that Taiwan and the Quad concentrate their fire on attacking the PLAN’s amphibious transport docks, such as the Type 071 landing platform dock and Type 075 landing helicopter dock, and later, the warships and facilities. Specifically, compared to its Chinese counterpart, the Quad–Taiwan joint force should preserve their advantage of control of the air and sea. Without amphibious transport docks, it is less likely that the PLA could conduct a successful amphibious assault and landing operation. To achieve this strategic goal, the Quad–Taiwan force’s surface-to-surface and antiship missile capability needs to be bolstered.<sup>13</sup> Additionally, the allies need to reinforce their surveillance capability and intelligence sharing, particularly those related to any movements of the PLA’s amphibious vessels and personnel. Similarly, the Chinese airborne troops

are the target as well, although they are not as significant as the PLAN's amphibious ones at this moment.

In terms of asymmetrical warfare and innovation, I propose that unmanned systems can be applied to the sourced-attack operation. Based on Eric Chan's analysis, the Quad and Taiwan can learn a lesson from the Armenia-Azerbaijan war to employ numerous unmanned aircraft systems (UAS) just right at the beginning of a Taiwan military conflict. In both theory and practice, UAS can play a defensive role in detecting the PLA's movements as well as an offensive power to attack the PLAN's amphibious assault ships and transport docks.<sup>14</sup> The Quad-Taiwan joint force should combine massed UAS with their surface-to-surface and antiship missiles to destroy the PLAN's amphibious assault operations either in harbor or at sea. On November 3, 2020, the United States just announced the sale of four MQ-9B unmanned aerial vehicles to Taiwan to assist enhancing its defense capabilities. This is a good start for the Quad and Taiwan to work on this strategy together.

### **Co-building the Quad-Taiwan Military Capability for Defense Against an Invasion**

As the Quad and Taiwan outline a common military strategy for deterring and denying the PLA's island-invasion plan, what military capability can they set up together for a real operation in the future? Based on the discussion of the Quad-Taiwan military strategy above, the following recommendations are suggested: (1) establish and improve their intelligence sharing, (2) start joint operations and improve their *interoperability* with combined military exercises, (3) comprehensively enhance their missile-attack capability, (4) increase sea mine use during an operation, and (5) promote their strategic-economic ties by codeveloping defense-technological industries.

First, as the Quad-Taiwan mutual defense mechanism prepares for an invasion in the Taiwan Strait, the group must establish and improve their intelligence-sharing capability regarding China's latest intentions and actions for invading Taiwan. Accurate assessments of the PLA's move toward confrontation are based on precise intelligence and information collection, shared among the Quad-Taiwan members. An aggregate "the Quad Plus Taiwan" has great intelligence, surveillance, and reconnaissance potential; analysis based on teamwork should be very helpful for the allies not only to prepare for the conflict but also to prioritize and target the PLA's troops and facilities. In 2020, the Trump administration announced plans to sell four weapons-ready MQ-9B remotely piloted aircraft and related equipment to Taiwan, and this equipment is very beneficial for collecting and investigating information about the PLA. Therefore, the Quad and



Taiwan should deploy a huge number of unmanned reconnaissance aircraft in coordination with traditional investigation approaches, such as reconnaissance planes and satellites.

Second, the Quad and Taiwan should initiate combined staff assignments and military exercises to develop joint operation capability against a potential attack by the PLA. Currently, Taiwan and the Quad do not have any symbolic or substantial military cooperation, and even military collaboration with the US armed forces is very limited. In responding to China's highly likely invasion of the island, it will be challenging for Taiwan to defend itself alone. The invasion will most likely be repelled if Taiwan and the Quad work together. The allies cannot go into the field without preparation; they must perform joint exercises first. Thus, the Quad and Taiwan should think about conducting a series of staff assignments, war games, and military drills, and it would be better to execute them in a joint operation to establish the alliance's interoperability.

Third, according to either the phrase "preservation of warfighting capability" defined by Taiwan's ODC or the idea of a sourced-attack on the PLAN's amphibious force, increasing the mutual missile-attack capability is perhaps the most critical objective for the Quad and Taiwan. To preserve Taiwan's forces in the face of China's strategic blockade and bombing, the island and its allies must enhance their common *air defense* capability to *intercept missile attacks from the PLA as well as destroy the PLAAF's fighters. In this stage, using land-based, surface-to-air, and air-to-air anti-ballistic missiles is critical for the allies.*<sup>15</sup> Additionally, *as the PLA's amphibious vessels and platforms must be destroyed when the invasion begins, the Quad and Taiwan also need to use their missile capabilities, all land, sea, and air based, to counterattack the enemy's amphibious force immediately, including the other Chinese naval vessels if possible.* Regarding weapons systems, Taiwan's Tien Kung-2, Patriot PAC-3, and Avenger Air Defense Systems are critical to its air defense, and the Hsiung Feng II and III missiles are vital to the island's coastal defense.<sup>16</sup> On October 21, 2020, the United States also announced it would sell the High Mobility Artillery Rocket System (HIMARS) to Taiwan. This is an important step to strengthen the island's missile-attack capability. Missile attacks should be the centerpiece of the counterattack operation. Furthermore, because large surface vessels and land-based launch platforms would be easy targets at the beginning, the Quad and Taiwan should also reemphasize developing many but small and fast attack ships, such as the Kuang Hwa missile boat, and many mobile, camouflaging, and hidden missile and rocket systems, which can avoid the PLA's attacks.<sup>17</sup>

Fourth, mines in the sea and on the beach are also very important to Taiwan's coastal defense. The mines should also be the core of a joint operation. In theory and in practice, sea mines are difficult to detect, and they can successfully delay an

enemy's amphibious assaults. Mines deployed in the sea are weapons that provide great deterrence and uncertainty to the enemy because they are difficult to discover. To overcome that obstacle, the enemy needs to send minesweepers to clear the sea lanes for a landing. In this circumstance, the minesweepers themselves are weak and are likely to be destroyed either by sea mines or by missiles and coastal artillery attacks. In terms of asymmetrical warfare, deploying sea mines and other mines is a good measure to counterbalance a potential PLAN crossing and amphibious assault.<sup>18</sup> Thus, the Quad and Taiwan need to develop quicker minelaying capability, just before China launches an amphibious assault, to deter and stop the PLA from crossing the Taiwan Strait. In general, sea mines can be classified into two types: defensive and offensive. Arranging sea mines just outside Taiwan's harbors is a defensive operation that could protect the ships and facilities inside the ports. Deployment in the Taiwan Strait or by the median line in the Taiwan Strait could be a defensive/offensive operation to deter and prevent the PLAN from crossing, and deployment just in front of China's naval bases could be viewed as an offensive operation placing a blockade that could stop any PLAN vessels from leaving port. The Quad and Taiwan can utilize different strategies to set up barriers in the Strait.

Fifth, in addition to military cooperation, the Quad and Taiwan also need to expand their collaboration in the realms of strategic-economy and defense-technological industry. For Taiwan, the island must reconsider enlarging but *relocating* its potential industries and investments, such as information technology and integrated circuitry, to its reliable allies as to prevent threat and risk placed by China. For the Quad, the four member states can codevelop advanced technologies with Taiwan to preserve an advantage of struggling with China not only in military but also in economic and technological competitions. Although Taiwan is developing self-reliant defense at this moment, including constructions of the nation's indigenous submarines, vessels, and new advanced jet trainers, it can look to deepen its defense-technological connection and cooperation with the Quad allies. On the other hand, the Quad members can take the chance to integrate with each other and with Taiwan to develop more substantial and material capabilities in military, technology, and economy, particularly in the areas of unmanned and autonomous weapons systems, to counterbalance China.

## Conclusion

Although the Quad is still far from a real military alliance, and true mutual defense cooperation between the Quad and Taiwan is in its infancy, an aggregate military power is more powerful than merely one or two powers. As the Indo-Pacific region faces an increasing Chinese military threat, the Quad members and

Taiwan can generate greater deterrence by building up a collective security mechanism. The current issue is whether they can realize the development seriously and whether they are determined to face the challenge together. Time is not on the side of the Quad and Taiwan. Discussions on legalization and institutionalization of the Quad or a Quad–Taiwan defense framework are important to the collective defense mechanism in the Indo-Pacific, but these conferences are not keeping pace with the strategic environment changes in the region. Action is needed now. The Quad and Taiwan must overcome their overconsideration of China's reaction and actively prepare for maintaining peace and stability in the Taiwan Strait. Once they are incorporated in a mutual defense framework, the strong deterrence and denial will keep China from crossing the Taiwan Strait and breaking through the First Island Chain.

It is a great challenge for Taiwan to defend itself alone. Most likely, China's island invasion plan can be thwarted if Taiwan and the Quad stand together. Increasing Taiwan's military cooperation with the regional mutual defense network is not only beneficial to the island but also a great advantage to Quad members and other states in the region. Without Taiwan's involvement, the Quad is less likely to respond effectively to a Taiwan Strait contingency. However, as people enthusiastically discuss, argue, or debate with one another how the Quad and Taiwan can establish a common defense strategy and increase the corresponding military capability, going back to the beginning to persuade each other to take the next step is more important. ★

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# Waging Information Warfare for Asymmetric Advantage

## Increasing Multi-Domain Speed, Survivability, and Lethality in the Indo-Pacific

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### Abstract

This article presents the Converged Effects Cells (CEC) theoretical model to organize and employ information warfare (IW) capabilities in the Indo-Pacific necessary for the success of Agile Combat Employment (ACE) and Joint All-Domain Command and Control (JADC2).<sup>1,2</sup> This construct operationalizes the ideas of Lt Gen Timothy Haugh and Brig Gen George Reynolds to achieve convergence against strategic power competitors and overcome current limitations in waging IW in modern, contested environments. The CEC construct is based off the global exploitation model deployed in early 2016 by elements of United States Special Operations Command (USSOCOM). It also incorporates the operational realities of the cryptologic enterprise and offensive cyber-operations (OCO) in US Indo-Pacific Command (USINDOPACOM). Inherent to this model is the (1) Central Security Service's revitalization (i.e., P2/P3 integration), (2) 16 Air Force's reorganizing organic capabilities, (3) joint force, interagency (IA), intelligence community (IC), and allied partner integration, (4) persistent operations across the entire competition continuum, and (5) over-the-horizon targeting and fires. This model creates a dynamic, scalable capability that blurs the line between kinetic and nonkinetic operations while simultaneously adding flexibility, resilience, and lethality to the current vulnerable and static IW architecture in the Indo-Pacific.

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While the United States government has no official definition of information warfare (IW), this article defines IW as kinetic and nonkinetic operations conducted domain agnostic that create lethal or nonlethal effects. While this broad statement can easily apply to most military operations, IW influences, disrupts, corrupts, paralyzes, and usurps the decision-making capabilities of adversaries, either cognitively or via physical manifesta-

tion, to gain a competitive advantage across the entire spectrum of the competition continuum. The synchronous and integrated employment of cyberspace, intelligence, surveillance, and reconnaissance (ISR), electromagnetic warfare (EW), information operations (IO), and other support elements such as weather, public affairs, and law enforcement (LE) define converged IW. In addition, the manifestation of converged IW outcomes presents a holistic warfighting capability that can be layered with additional military, diplomatic, and economic instruments of national power to create an asymmetric advantage against both state and nonstate actors.<sup>3</sup> Specific to the Indo-Pacific, the successful application of IW is paramount to overcome geographic, quantitative, and qualitative advantages of our adversaries and is a vital American offset for advantage against strategic competitors.

### **The Current Areas of Risk for Joint Force Commanders in Waging IW**

The current alignment of IW units in US Indo-Pacific Command (USIN-DOPACOM) is disparate and housed in no fewer than four wings. While this alone is not necessarily problematic, the lack of converged training, deployment, and mission execution is an area of concern that limits the effective execution of converged IW operations.<sup>4</sup> While the establishment of Task Force Skyraider signals 16 Air Force's (AF) intention to present converged IW capabilities to USIN-DOPACOM, 16 AF lacks a unified operational construct that provides synchronized kinetic and nonkinetic operations spanning the requirements intrinsic in the competition continuum.

Inherent in this non-unified execution model is the lack of combined mission authorities and signals intelligence (SIGINT) accesses (i.e., Title 10, Title 50, querying approvals, security read-ons) that fail to achieve the aggregate of the units' capabilities for combatant commands and service components. Comprising these units are Airmen from different program element codes (PEC) (i.e., P2 and P3) that are limited in their ability to effectively integrate warfighting capabilities. Thus, these Airmen are not utilized to their full operational potential, based on the current interpretation of The Economy Act (31 U.S.C.1535).

Additionally, these units are consolidated at major cryptologic and operational hubs. This in turn presents the adversary with a small target list that, if struck, would cripple the United States' ability to generate IW effects. These large, static hubs primarily require the integration of the warfighter at the stationary facilities to produce converged IW effects. The hubs have limited capability in presenting IW outcomes to the warfighter in the battlespace. In addition to not being surviv-

able, this construct does not take advantage of secured geography and time that can be exploited and leveraged for IW placement and access which is the cornerstone of the Air Force's ACE concept. Holistically, the United States lacks a model for executing converged IW operations in a dynamic environment that is survivable against enemy targeting, effective in a denied, disrupted, intermittent, limited (D-DIL) communications environment, and lethal in supporting both kinetic and nonkinetic fires.

### **Integrating Cryptologic Airmen Across the Enterprise**

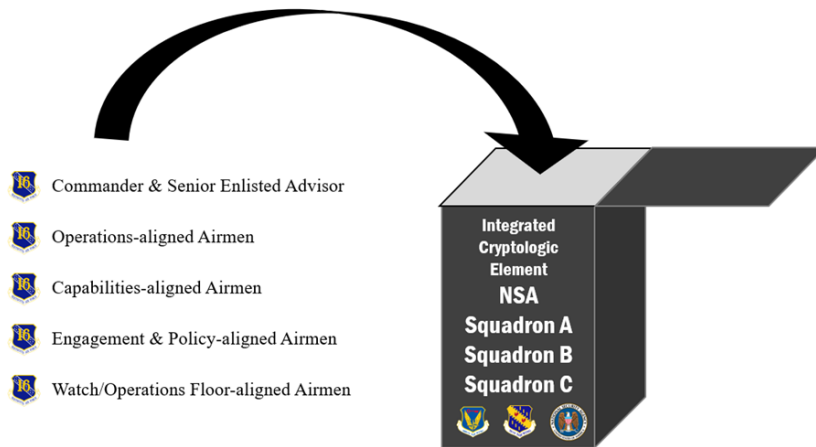
For any IW capability developed and deployed with a focus on convergence, the enduring challenge of integrating all cryptologic Airmen and overcoming the legal and bureaucratic restraints (i.e., achieving P2/P3 integration) must be addressed. The complexities inherent with 16 AF units is that they have personnel operating on common missions under different PECs. This leads to concerns about meeting the legal requirements per The Economy Act (31 U.S.C.1535) and currently limit 16 AF in achieving a truly integrated cryptologic force that taps the full potential in generating IW effects. To achieve integration of cryptologic Airmen, the problem must be tackled from a short-term and a long-term perspective.

In the immediate, short term, the National Security Agency's (NSA) Cryptologic Support Team (CST) construct used in the Global War on Terror (GWOT) provides a blueprint to streamline cryptologic Airmen integration. Evolving the old CST construct, the establishment of *Integrated Cryptologic Elements* at the cryptologic centers creates a model in which 16 AF mans the billets that comprise an NSA capability (i.e., Title 50) tasked to support military operations (i.e., Title 10).<sup>5</sup> With 16 AF comprising the NSA capability, and with that NSA capability being tasked to support military operations, the Integrated Cryptologic Element, while a Title 50 asset, would operate nearly identical to a Title 10 element in regards to capability presentation.

The Integrated Cryptologic Element does not require any additional manning from either 16 AF or NSA but would code existing 16 AF-presented billets within NSA to specific cryptologic offices operating under established authorities and operational approvals. Additionally, the Integrated Cryptologic Element does not place any additional mission "tax" on the NSA but solely codifies billets at the cryptologic centers that would directly support the combatant commander, via the National Cryptologic Representative (NCR) at the Combatant Command, while also providing a quick reaction force for holistic cryptologic support on behalf of NSA. This construct arms NSA to better serve as a *combat support agency* by presenting a cryptologic capability that can operate

away from the cryptologic center that is trained to immediately integrate with combat elements during a contingency.

These personnel in the Integrated Cryptologic Element have all their Title 50 authorities, querying approvals, and security read-ons required by NSA to conduct their cryptologic mission at the cryptologic center. The Integrated Cryptologic Element would be responsible for existing daily tasks in their respective cryptologic offices; however, they would also be responsible for integration and coordination with warfighting elements in collaboration with the NCR. This responsibility for direct warfighter support, as was the case in GWOT, opens the aperture for consistent training and operational employment with other 16 AF units and their capabilities.<sup>6</sup> The Integrated Cryptologic Element serves as the cryptologic enterprise's expeditionary force charged with supporting forward military forces and the conduct of their operations.



**Figure 1. Composition of 16 Air Force-manned Integrated Cryptologic Element from NSA organizational elements operating under Title 50 authorities.<sup>7</sup>** The Integrated Cryptologic Element concept uses the Airmen under the operational control (OPCON) of NSA with the explicit task of supporting military operations. Based off the CST used in GWOT, this construct has proven effective to bring NSA-capabilities to the warfighter at speeds and via mechanisms customized to meet the operational environment and military end-user.

While the above construct provides a short-term solution, a long-term solution requires a new model that reinvigorates the virtually static Central Security Service (CSS). 16 AF, along with the other service cryptologic elements, should work with NSA/CSS to develop a holistic service cryptologic strategy.<sup>8</sup> In this strategy, entire mission areas that are currently in NSA's portfolio would be presented to the individual services to lead by leveraging their SIGINT Operational Tasking Authority and responsibilities per the CSS. This model allows for the integration



of cryptologic Airmen, as well as NSA-civilians, to execute problem-centric ISR and would look to the specific service to lead a federated mission across the cryptologic enterprise. In the case of the Indo-Pacific, 16 AF would execute the service-led mission under a federated mission concept against a target country's specific capability (e.g., integrated air defense system (IADS)), which is congruent with the tasking of Task Force Skyraider. This model, in development by the Air Force Cryptologic Office, is the Converged Air Force Enterprise Mission (CAFEM) and is reliant on a service cryptologic strategy that outlines missions led by each service and corresponding querying authorities to allow access to the required data for exploitation, analysis, and dissemination.

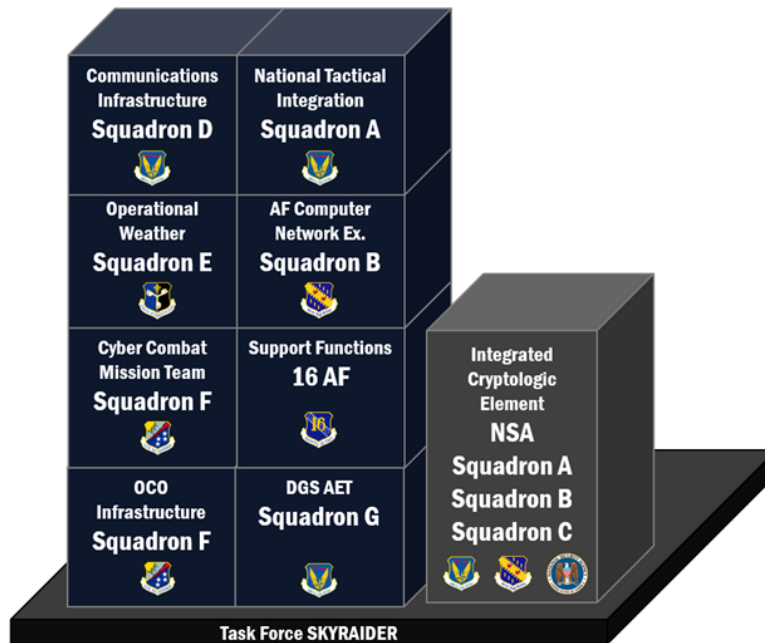
Overlaying the short-term solution of building the Integrated Cryptologic Element with the long-term solution of 16 AF executing a traditional NSA mission under an approved service cryptologic strategy overcomes the historical bureaucratic and legal problems associated with the Economy Act (31 U.S.C.1535) and integrates P2 and P3 Airmen. Additionally, 16 AF would be armed with a service-led expeditionary capability to inject tactical SIGINT collect, cyber-ISR data, and OCO-derived intelligence data into the larger cryptologic enterprise—a model proven successful by United States Cyber Command (USCYBERCOM) and the NSA with a similar initiative. In its totality, to achieve the integration of all cryptologic Airmen, 16 AF should leverage the NSA-approved CST-model to create the Integrated Cryptologic Element and inject the long-term authorities and mission management of the CAFEM to create a solution that arms the entirety of the cryptologic enterprise with never-before seen capabilities and resources.

### **Integrating 16 AF IW Units**

With 16 AF manning the Integrated Cryptologic Element and the capability to present holistic cryptologic capabilities to the warfighter, the first critical piece of a converged IW construct emerges. Leveraging the 2020-established Task Force Skyraider operational order, an opportunity presents itself to merge the Title 50 Integrated Cryptologic Element with the various Title 10 capabilities present across 16 AF. Injecting capabilities such as cyber-ISR, weather, National Tactical Integration (NTI), Distributed Common Ground Station (DCGS) Analysis & Exploitation Teams (AET), Air Forces Cyber (AFCYBER)-retained Cyber Combat Mission Teams (CMT), Air Force Computer Network Exploitation (CNE), communications infrastructure, targeting analysis, and flying unit intelligence creates a construct that exercises Title 10 and Title 50 authorities in unison while simultaneously providing converged IW effects to the strategic commander and tactical warfighter.

This construct ensures converged daily operations and training events integrating Intelligence Squadrons, Operational Weather Squadrons, Cyberspace Operations Squadrons, Intelligence Support Squadrons, and various levels of staff, with the end goal of arming 16 AF with a “fight tonight” IW competence that is target-focused and leverages the holistic 16 AF warfighting capability. The construct allows for simultaneous intelligence collection, exploitation, and fires to satisfy both intelligence and nonkinetic targeting requirements, while simultaneously supporting kinetic operations. In its totality, the integration of Title 10 and Title 50 capabilities from the various 16 AF organizations atop the TF Skyraider construct, and merged with the Integrated Cryptologic Element, forms the *Converged Effects Cell* (CEC).

The CEC serves as a self-sustained capability that operates independently or as part of a cellular network dependent on the permissibility of the communications environment. With the Operational Weather Squadron providing environmental updates to factors that can affect active and passive operations, the Intelligence Squadron develops and enacts collection management strategies to exploit the operational environment for the specified area. From forward-exploited intelligence by the DCGS AET, the Intelligence Squadrons also provide NTI to ensure tactical units are armed with strategic cryptologic capabilities and insight, while also executing derivative active intelligence collection operations via cyberspace. Simultaneously, the Cyberspace Operations Squadron’s CMTs leverage the intelligence provided by the Intelligence Squadrons and the Integrated Cryptologic Element and overlay it with the operational weather forecast to plan and deliver nonkinetic fires in coordination with the targeting analysts. While the Cyberspace Operations Squadron manages the infrastructure and weapons system used for nonkinetic fires, the Intelligence Support Squadron manages the infrastructure used for intelligence operations. Providing post-strike battle damage assessments (BDA), the Air Force CNE operators in collaboration with the CMTs assess the effectiveness of the fires and the impact on the target. The self-sustaining processes within the CEC allows for converged IW operations in a D-DIL communications environment with planning, execution, and deconfliction being conducted internally with limited external communication requirements.



**Figure 2. Composition of notional Converged Effects Cell.** Each block denotes a unique capability, as well as the associated 16 AF squadron(s).

## Cyber-Operations & Persistent Engagement in the Converged Effects Cell

As part of the CEC, the AFCYBER-owned CMT provides 16 AF with an OCO fires capability that operationalizes the exploitation derived from the collocated elements and the broader enterprise. While CMTs have primarily fallen under the OPCON of theater Joint Force Headquarters–Cyber commands, the precedence set by GEN Paul Nakasone, Commander, USCYBERCOM, breaks that mold. General Nakasone’s alignment of a non-Joint Force Headquarters–Cyber (JFHQ-C) (Navy) unit to the USINDOPACOM target-set in 2020 provides a template to apply to AFCYBER and USINDOPACOM.

Augmenting JFHQ-C (Navy) and their subordinate elements in the Indo-Pacific, the realignment of another service’s cyber capability without falling subordinate to JFHQ-C (Navy) proved to be a successful model. Based off this success, 16 AF/AFCYBER should use this vignette to retain OPCON of one CMT currently manned by the Indo-Pacific-aligned Cyberspace Operations Squadron. With 16 AF/AFCYBER retaining OPCON of a CMT in the Indo-Pacific, the CEC would support Theater Joint Forces Air Component Commander (TJ-

FACC), USCYBERCOM, USINDOPACOM, and 16 AF/Task Force Skyraider OCO priorities while executing persistent engagement operations.<sup>9</sup>

While postured to conduct Operational Plan (OPLAN) activities in the time of a contingency, the CMT in the CEC can leverage authorities to persistently engage the enemy in day-to-day operations. Operating below the threshold of armed conflict along the competition continuum and weaponizing the intelligence gathered from collocated capabilities in the CEC, the CMT can serve as a 21st Century “Voice of America.” For example, publicly highlighting the People’s Republic of China’s (PRC) predatory lending practices inherent with the Belt Road Initiative, the abuse by high-ranking PRC leaders such as the sexual assault of tennis star Peng Shuai, corruption in the upper echelons in the PRC leadership, and the ongoing human rights violations of Uighurs in Northwest China, the CEC can decrease the competitiveness of the PRC by “weaponizing the truth.” From these operations, the PRC is forced to reallocate finite resources to counter negative narratives that would otherwise be used to fund outward expansion. The CEC can inject disinformation into the targeted adversary’s society to spur the unwitting propagation of misinformation by its populous.

As the relationship between the United States and the PRC moves closer to that of “conflict” on the competition continuum, the rhetoric would increase in focus toward weakening the adversary—if that is the desired end state. Spreading messages that highlight freedom of speech, freedom to assemble, and a commitment to truth all degrade a nation’s ability to domestically control the information space while allowing the injection of pro-American ideals.<sup>10</sup> Further degrading the target nation’s ability to control mass media and information, the CMT can target the adversary’s technical capabilities required to control their internet media, thus opening periods of time for the population of the target nation to access nongovernment restricted web content. From these sporadic leaks of nonfiltered content, the United States can sow entropy into the regime’s ability to govern that can compound over time and create chaos in the target nation.

Similarly, the CEC serves as a “reconnaissance platform” for collecting against the enemy’s planning and execution of IW effects against the United States and allied nations. In this role, the CEC collects, exploits, and informs senior leaders of an enemy’s malicious IW intentions prior to their launch against US or allied interests. Operating as an indications & warning (I&W) sensor, the CEC supports Cyber Mission Force Defensive Cyberspace Operations and Department of Defense Information Network Operations, while also assisting Cyber National Mission Force and Cyber Protection Force operations.<sup>11</sup> The forward presence of the CEC enables placement and access, as well as opens partnership opportuni-

ties, to key terrain for use in illuminating enemy capabilities and intentions to allow for appropriate measures to be taken.

### **Learning from Special Operations and the Regional Exploitation Center Model**

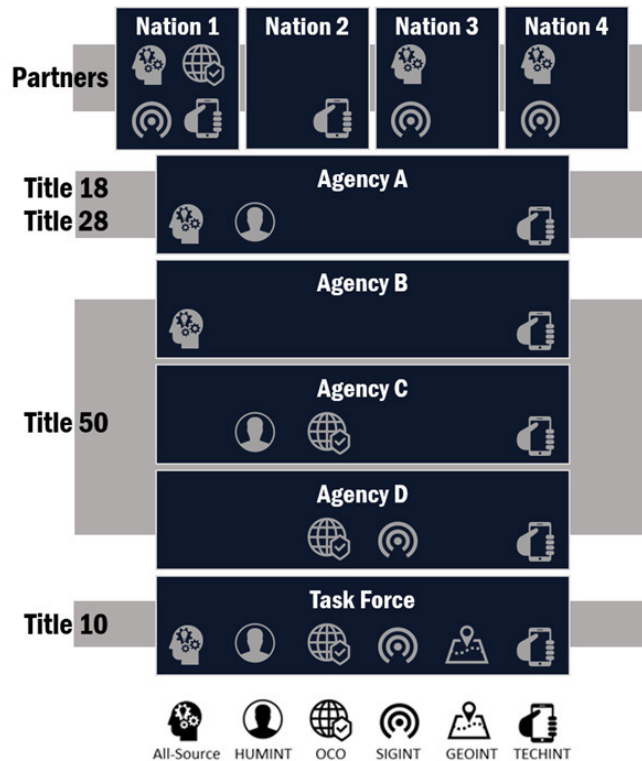
The CEC finds its origin from the Regional Exploitation Center (REC) model developed by joint special operations forces (SOF) during Operation Inherent Resolve in Iraq and Syria. Subordinate to the regional task force (RTF) commander, the REC provides the RTF commander with a scalable, modular collection and exploitation hub that is custom composed of capabilities to match the operational requirement and environment. The composition of each REC, in which a specific geographic region may have several RECs, differs based upon the unique requirements for the specific operating area, as well as the intended effects-generation requirement. This construct is now codified at United States Special Operations Command (USSOCOM) and forms the basis for global joint identity activities as published in Joint Doctrine Note 1-20.<sup>12</sup>

The REC provides maneuverability to IW and operates in contested and D-DIL communication environments. Through achieving localized superiority, a window in time and space opens that allows the REC to take advantage of fleeting access in support of nonkinetic and kinetic operations. With pre-approved cryptologic administrative actions ready for implementation, there are no extensive administrative routing times, making the deployment of the REC with all required cryptologic authorities expedient.

As geographic access is lost or the risks are deemed too high to operate, the REC collapses into a neighboring, operational REC. Repeating the process of expanding and collapsing with the ebb and flow of the operational environment, the REC is a dynamic entity that is constantly maneuvering. Additionally, the small, custom-built, cellular-construct of the REC provides survivability to the SOF-enterprise as well as line-of-sight (LOS) connectivity to mitigate a D-DIL communications environment with other tactical users. The decentralized execution of IW operations at the REC allows SOF an asymmetric advantage in speed of operationalizing collected data, conducting novel OCO, and enabling operations to seize key terrain. From this key terrain, new accesses are presented for IW effects generation as part of the larger RTF's offense—further continuing the cycle.

The power behind the REC is the ability to integrate the broader Intelligence Community (IC), interagency (IA), and allied partners. Since the REC houses most tactical intelligence access for a particular target, the IA/IC and allied

partners use the REC as the forward injection point for their respective capabilities (e.g., digital forensics, document exploitation (DOMEX), debriefings, LE investigations). With this integration, the REC's Title 10 authorities are enhanced with the various operating authorities inherent with the collocated agencies to create a whole-of-government IW capability that spans all instruments of national power. This approach proved highly effective in combating transregional targets, specifically the foreign terrorist fighter threat and specific technology proliferation.

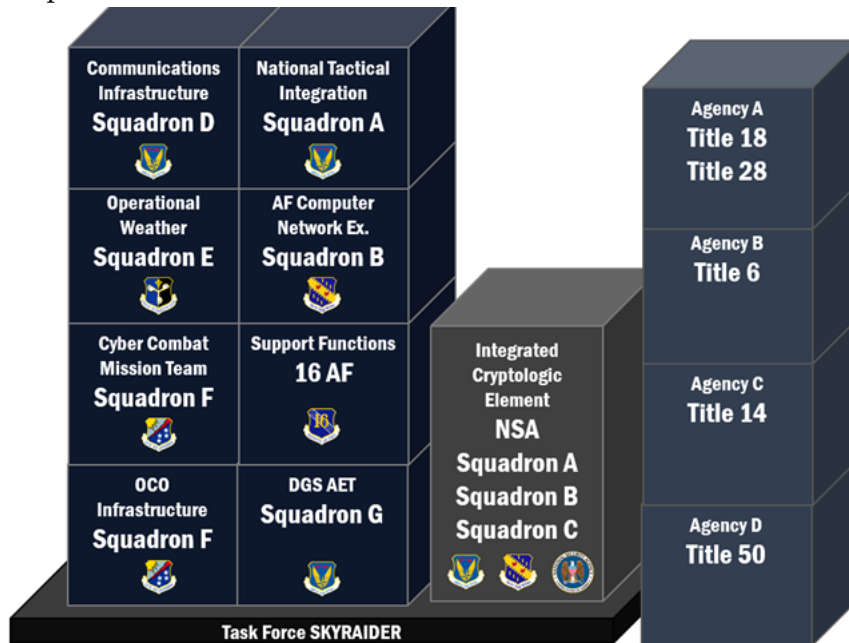


**Figure 3. Notional construct of Regional Exploitation Cell capabilities and authorities.** Overlapping capabilities of the various IA/IC partners with those of our allied nations provides a holistic force that is suited to meet the operational requirements directed by the joint force commander.

### Integrating the Interagency, Intelligence Community, and Allied Partners

For successful and synchronized IW operations across all domains, the joint commander must be armed with a whole-of-government complement of capabilities. The capabilities afforded by the broader IA/IC extends the reach and

impact of the joint commander using complimentary authorities (e.g., Title 28, Title 18, Title 6, and Title 14) to traditional Title 10 and Title 50 operations. Given the global nature of the IW battlespace, leveraging the authorities inherent within the IA/IC are critical to accessing and safeguarding domestic information technology systems vital to the United States, as well as creating novel effects against a target nation. The forward presence of the CEC, along with the Cell's convergence-centric approach to operations, entices the broader IA/IC to integrate. The symbiotic relationship between the joint commander and the IA/IC at the CEC provides the joint commander with additional capabilities to combat the enemy while the IA/IC has forward-edge access to operations and data. From this forward-edge access, the IA/IC can leverage available communication pathways to ingest and export agency-prioritized data to support their organic operations independent of the CEC.



**Figure 4. Composition of a notional Converged Effects Cell in the Indo-Pacific with IA/IC integration.** Each block denotes a unique capability, as well as the associated 16 AF squadron(s) and associated authorities for operations. Integrating IA/IC elements expands the operational capabilities of the IW construct, writ large.

Given the geographic disparate nature of the CECs and the role of allied forces, integrating foreign partners into the Cells provides multi-order advantages. First, integrating allied forces brings new capabilities, expertise, and novel thinking to the IW fight for the joint commander. As was proven at the REC, certain allied partners have niche skills absent in the US military and by integrating them into

the fight, the aggregate combat power only increases. Second, data derived from the CEC is a currency that the joint commander can use to achieve operational goals. For instance, the joint commander can provide specified data to an allied nation in exchange for permission to deploy a CEC within their borders or allow over-flight rights for aircraft. The CEC is not only a converged IW capability against a targeted nation, but the Cells also serve as a rallying point to strengthen allied bonds against a common threat.

### **Employing Converged Effects Cells in USINDOPACOM**

The CEC, modeled after the RECs used by SOF in semi-permissible environments, encompasses the various 16 AF capabilities, the Integrated Cryptologic Element, and serves as an anchoring point for IA/IC and allied nation integration. While the operational requirements and environment dictate each CEC's composition, the agility of the construct provides a new level of IW maneuverability and subsequent survivability.

Each CEC deployed in the Indo-Pacific comprises the capabilities required by the joint commander for the geographic space and time they operate in. While one CEC may have the full complement of IW warfighters, another CEC may not have OCO capability due to a lack of required infrastructure or target access. Just like the personnel manning and the specialty capabilities represented at each CEC, the compute capability and capacity at each CEC represents the unique operational requirements dictated by the joint commander. The CEC provides the joint force commander a tailorable, cellular IW construct that is versed in converged operations and operates either autonomously or as part of the broader network across the entire competition continuum.

The CECs are housed across various domains and within a variety of modalities. From clandestine, covert, and overt terrestrial, surface maritime, subsurface maritime, and airborne platforms, the CECs operating in unison across the various platforms provide the joint force commander a resilient and effective IW effects-generation element. The CEC acts as a truly multi-domain capability that is tailorable to both the blue-force and red-force operating environments.

The CECs operate based upon the geographic environment but also the electromagnetic (EM) environment. Given the nature of IW operations, the CECs must operate at locations with favorable EM environmental factors to enable passive and active operations. Locations include densely populated centers and areas near telecommunications access point. Additionally, the CECs require placement that affords access into the targeted enemy system or network at an acceptable level of risk. This balance requires the CECs to be functional in overt, covert, and



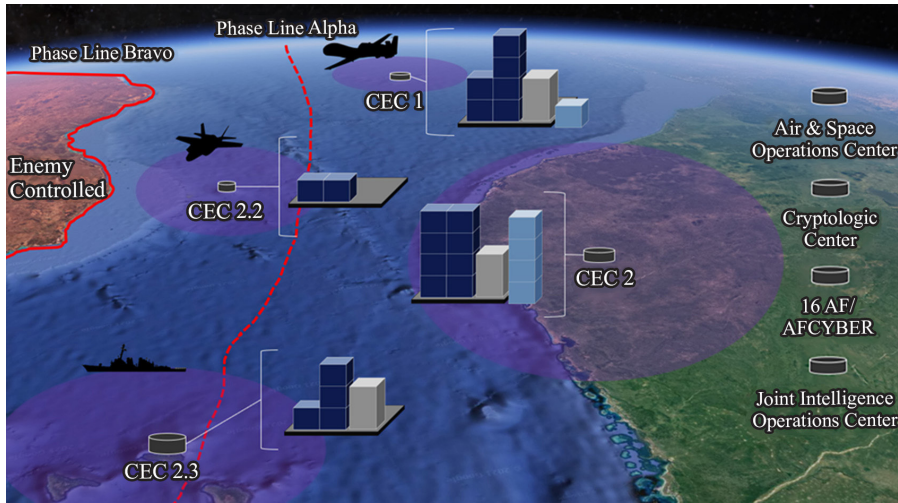
clandestine operating modes that are manned by multi-capable Airmen trained in signature reduction, cover management, and other traditionally absent tradecraft.

The ability for the CECs in the Indo-Pacific to expand and collapse requires an expeditionary-mindedness and employment of IW that has historically been absent from the Air Force. This absence is derived from the preponderance of IW operations historically being conducted from static, cryptologic centers that are minimally integrated into the joint fires scheme of maneuver. Transplanting capabilities from the cryptologic centers to the forward edge of the battlespace presents strategic capabilities to the warfighter at greater speeds, while also adding resilience and survivability to the vulnerable IW enterprise by dispersing IW projection points across a geographic area.

As the operational environment shifts, and localized superiority secures time and space for maneuver, new CECs deploy to exploit the opportunity to create converged IW outcomes. Simultaneously, the CEC's geographic placement presents a "landing pad" for US and allied assets to inject collected data for processing and exploitation. Given the expected contested communications environment in the Indo-Pacific during a contingency operation, long-haul transfer of collected data from intelligence platforms back to continental United States (CONUS) processing sites presents several challenges. However, leveraging the placement of the CEC, LOS communications equipment can be collocated to allow for downlink of collected intelligence from multi-domain assets. Given the composition of the CEC, the downlinked data will be ingested, exploited by the DCGS AET and Integrated Cryptologic Element using manual and machine-aided tradecraft, and then organically operationalized for nonkinetic effects by collocated IW warfighters.<sup>13</sup> Dependent on communication permissibility, stored data can be transported back to niche centers such as USINDOPACOM headquarters, USINDOPACOM Joint Intelligence Operations Center (JIOC), 613th Air and Space Operations Center, National Air and Space Intelligence Center, JFHQ-C, and other IA/IC elements.

Overlaid with the capability to inject downlinked data from multi-domain platforms, the CEC feeds data directly from the tactical collector into the Cell's construct for immediate exploitation and analysis. The attained speed of operationalizing intelligence at the edge provides IW capabilities for the joint force at the tactical level, thus allowing for quicker IW "sortie-generation" and better synchronization with battlefield units. Additionally, the CEC's ability to house edge-processors and automation suites as part of the future Joint All-Domain Command and Control (JADC2) construct creates IW effects at faster speeds. These speeds, attained from taking a process that historically took place at large cryptologic cen-

ters and moving them down to the tactical warfighter, opens new realms of possibilities for bringing IW effects to the contested USINDOPACOM battlespace.



**Figure 5. Employment of the Converged Effects Cell construct in a notional environment.** From CEC 2, additional CECs 2.2 and 2.3 are established and deployed to take advantage of the semi-permissible environment created by pushing enemy control from Phase Line Alpha to Phase Line Bravo. The CECs house LOS communication systems to integrate IW effects with other users operating across the domains. As the environment becomes more contested and the risk is deemed unacceptable, CECs 2.2 and 2.3 reintegrate back into CEC 1 and 2. The CECs, while designed to operate self-sufficiently in a D-DIL communications environment, are also able to both “push” and “pull” data across the broader warfighting and intelligence community enterprise.

### Critical Information Warfare Component for Agile Combat Employment

Founded on the idea of relying less on large traditional basing points for power projection and using dispersed forward expeditionary locations, ACE “shifts operations from centralized physical infrastructures to a network of smaller, dispersed locations that can complicate adversary planning and provide more options for joint force commanders.”<sup>14</sup> The CEC is built on the concept of “distributed operations,” where small groups operate independently rather than en masse.<sup>15</sup> The distribution of IW forces counters the enemy’s precision strike capabilities and presents the ability to contest the enemy through IW effects, thus attriting enemy strength and their ability to conduct command and control (C2) by creating the “virtues of mass without the vulnerabilities of concentration.”<sup>16</sup> In addition, the CEC nests precisely with the Air Force’s ACE concept by expanding from the air domain and incorporating the cyber and cognitive domains. As the Air Force further advances and deploys future C2 technologies, the CECs are the

entities that will integrate and harmonize kinetic and nonkinetic environments to achieve synchronized joint all-domain operations (JADO) for warfighting.

Leveraging the concepts underpinning ACE, the tailored IW force packages of the CECs holistically act as an organism to inject entropy via multiple domains and methods culminating in chaos and subsequent paralysis in enemy power projection. The CEC relies on leaders empowered with mission command and armed with mission type orders to execute IW operations through “centralized command, distributed control, and decentralized execution.”<sup>17</sup> Through this approach, IW effects are generated in D-DIL communications environments while leveraging the ingenuity and innovative qualities of the multi-capable Airmen. To achieve this, however, the current time-intensive bureaucratic processes associated with conducting OCO and other IW activities must be addressed.

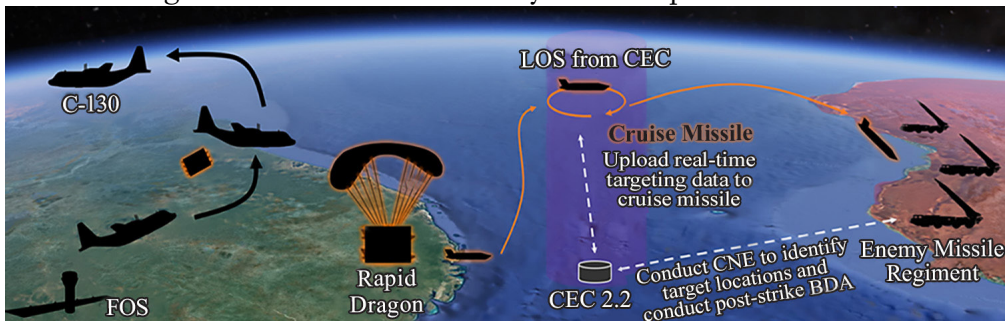
### **Future Opportunities Presented: Over-the-Horizon Targeting Solutions**

With the CECs serving as inject point for both passive and active intelligence collection operations, as well as housing future human-augmenting technologies, over-the-horizon targeting support options materialize. The colocation of data from multi-domain intelligence assets, layered with amplifying analysis from across the US government, allows for automated technical targeting capabilities against dynamic targets. A weapon system can be launched over-the-horizon by US or allied forces prior to being provided targeting coordinates and programmed to “call-back” or “await receipt” of targeting criteria from the CEC’s targeting analysts.<sup>18</sup> The CEC, housing an organic capability to fuse and create targeting intelligence, feeds real-time targeting data to the weapon system all the way to the weapon’s terminal targeting phase, impact, or loss-of-connection.

The CECs conduct CNE activities to gain access to an enemy’s command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) network and exfiltrates that data back to US and allied targeting centers. In a D-DIL environment however, the CECs can pass targeting data directly to kinetic weapon systems (e.g., Joint Air-to-Surface Standoff Missile (JASSM) Extreme Range (XR), hypersonic platforms, loitering munitions, pallet-dropped cruise missiles) within LOS.<sup>19, 20</sup> In this model, the CECs provide the joint force commander a mechanism to operationalize cyber-derived intelligence for real-time kinetic strikes to support dynamic targeting, analogous to multi-domain “buddy lasing.”

Below is a fictional vignette that temporally depicts potential over-the-horizon targeting support the CECs can provide:

1. Special Operations C-130 based from a forward operating site takes off and launches Rapid Dragon pallet-dropped cruise missile against potential enemy nuclear missile regiment over-the-horizon with pre-programmed flight path to fly within LOS of a CEC.<sup>21</sup>
2. CEC launches CNE operation to gain access to enemy's communication architecture to identify enemy assets and their geographic location.
3. CEC exfiltrates the location of enemy nuclear mobile missile regiment to organic analytic systems, as well as to the crew of the C-130, 613 AOC, and USINDOPACOM J2T if communications allow. However, due to communications jamming by enemy forces, the C-130 crew, 613 AOC, and USINDOPACOM J2T may be unable to receive targeting data for ongoing or future strikes.
4. CEC exploits and processes CNE-derived data with other active and passive intelligence to create a high-fidelity geolocation for the enemy nuclear missile regiment.
5. Cruise missile flies within LOS of CEC allowing for the upload of real-time targeting data, thus overcoming enemy's communication jamming and allowing for the prosecution of the dynamic target.
6. Cruise missile strikes target.
7. CEC conducts CNE operation to provide BDA to see if the nuclear missile regiment is still active in enemy's C4ISR picture.



**Figure 6. Notional model for a CEC supporting over-the-horizon targeting.** CEC 2.2 serves as a mechanism for extracting real-time targeting data via CNE and can upload targeting data derived from organic targeting analysts via LOS communications to a launched munition, thus overcoming aspects of a nonpermissive EM environment. Additionally, the CEC can provide CNE-derived BDA using organically contained capabilities.

## Conclusion

For the United States to overcome the geographic, quantitative, and qualitative advantages of our adversaries in the Indo-Pacific, IW must be embraced as a vital American offset for advantage against our strategic competitors. To tap into the

full potential that waging IW offers to the joint force commander, the Indo-Pacific requires a new operational construct to organize and employ IW capabilities across the range of the competition continuum. Through the direct application and synchronization of strategic cryptologic capabilities via the establishment of the Integrated Cryptologic Elements and subsequent integration of organic 16 AF and IA/IC capabilities, the Converged Effects Cell comes to light. The Converged Effects Cell serves as a multi-domain entity, built off the historical success of USSOCOM elements in contested environments, which provides the joint force commander persistent options across the entirety of the competition continuum for creating IW, as well as kinetic effects. From the Converged Effects Cell model, the Indo-Pacific does not take whole-of-government approach, but rather a whole-of-alliance approach to bring to bear the collective IW effects-generation capabilities of the broader alliance. These capabilities manifest and provide never-before-attainable options to the joint force commander that blur the line between kinetic and nonkinetic while reinforcing American speed, survivability, and lethality in the Indo-Pacific. 🌟

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## Should the Quad Become a Formal Alliance?

DR. JOHN HEMMINGS

*It is my purpose, as one who lived and acted in those days to show how easily the tragedy of the Second World War could have been prevented . . . how counsels of prudence and restraint . . . how the middle course adopted from desires for safety and a quiet life may be found to lead direct to the bull's eye of disaster.*

—Winston S. Churchill

There is a growing contradiction in the security situation in the Indo-Pacific. The more possible a conflict over Taiwan has become, and the more that China's hegemonic intentions are revealed<sup>1</sup>—at both the regional and global level—the more that the leaders of the US-Japan-Australia-India Quadrilateral, (herein called the “Quad”) hedge about the group's ultimate purpose. Indeed, they seem to go out their way to avoid defining the Quad as an alliance<sup>2</sup> or a form of security architecture, which is quite at odds with what both history and international relations theory suggest should occur. In an interview with media in September 2021, for example, a senior US official called the Quad “an unofficial gathering,” adding that “there is not a military dimension to it or a security dimension.”<sup>3</sup> Only six months previously, India's Army Chief General M.M. Naravane told the Indian media that while there would “definitely be military cooperation both bilaterally between the countries of the Quad and as a quadrilateral also, it would not be a military alliance in that sense.”<sup>4</sup> Australia's Prime Minister Scott Morrison—fresh from the diplomatic flurry caused by the Australia–United Kingdom–United States (AUKUS) submarine deal—was also ambiguous: “The Quad is a partner, whether it be for China or any other country in the region, we're there to make the region stronger, more prosperous, more stable.”<sup>5</sup> This approach seems counter to international relations theories that examine the rise of expansionist or hegemonic aspirants.

According to one of the most prominent theories, neorealism,<sup>6</sup> state behavior is driven primarily by the distribution of material capabilities in the international system and changes in that distribution are a source of anxiety: “Rising states pose a challenge to others and inspire them, almost automatically, to balance against the challenger either internally by arming or emulating one another's military practices and technologies, or externally by allying with other states.”<sup>7</sup> While it is true that the Quad members are internally fortifying themselves with military capabilities and that they have created the Quad, a quasi-alliance, it is still a form of underbal-

ancing since they are underplaying its military aspect and eschewing collective defense commitments. This article examines alignments and alliances before the First and Second World War and during the Cold War. Looking at the first two periods, we can see that underbalancing by democracies is not particularly unusual historically. It happens more often than not and often fails to deter aggression by other powers. If one looks at how different types of states create alliances, it is arguable that democracies find it more difficult—for reasons related to the domestic debates within their foreign policy elites<sup>8</sup>—to balance rising threats. This is partly because neither publics nor policy elites are willing to bear the entrapment costs associated with an alliance if there is not a sufficiently threatening rationale to justify it. Indeed, until relatively recently, the very nature of Chinese assertiveness was widely debated among Western international relations scholars.<sup>9</sup> However, those debates are of decreasing relevance as attitudes toward China evolve and it is viewed less positively,<sup>10</sup> and even as a “threat”<sup>11</sup> within all four Quad nations. Thus, this article will argue that not only are policy elites within the Quad underbalancing by avoiding mutual defense commitments, but also that they might be inviting the very aggression by China that they seek to avoid.<sup>12</sup>

### **Alignment Rather than Alliance**

Before addressing this assertion, it is worth exploring the conventional wisdom—generally accepted by this author and many others that the Quadrilateral is not an alliance—informal or otherwise—but rather a form of alignment, a distinction made clear by Thomas Wilkins in his 2012 essay “Alignment not Alliance.”<sup>13</sup> While some Chinese scholars and government representatives have accused the Quad of being an “Asian NATO,” this is incorrect for a number of reasons.<sup>14</sup> It is correct to argue that the Quad—and AUKUS and other trilaterals—should be defined as an alignment. While the terms are used interchangeably, there are key differences between an alignment and an alliance. Michael Ward defines alignment as “more extensive than alliance since it does not focus solely upon the military dimensions of international politics.”<sup>15</sup> One could argue that alliances are a form of alignment, but not the other way around because of the necessary characteristics of alliances—that of mutual or one-sided defense obligations. If we examine the Quad’s 2021 Joint Statement, for example, we can see there are a broad range of issues of cooperation—including COVID-19 vaccinations, emerging technologies, and support for “a rules-based order,” “a shared vision for the free and open Indo-Pacific,” a willingness to address “challenges to the rules-based maritime order in the East and South China Seas,” and support for the Association of Southeast Asian Nations “unity and centrality.”<sup>16</sup> Alliances, by contrast, are defined by Glenn Snyder as “formal associations of states for the



use (or nonuse) of military force, in specified circumstances, against states outside their own membership.”<sup>17</sup>

We might go further and say that alliances lay a more specific commitment—that of military cooperation or mutual defense—upon their members, while alignments do not. These commitments are traditionally spelled out in a treaty—open or secret<sup>18</sup>—and though sometimes couched in ambiguous language,<sup>19</sup> are reinforced politically, during senior bilateral visits, important anniversaries, or during tensions with a third country. So, to summarize, we can say clearly that the Quad is not an alliance because it does not rest on a principle of collective defense and its members do not anticipate or expect that. Some might argue that the Quad is a *de facto* alliance because it contains members of two alliances—the US-Japan Alliance and the US-Australia Alliance—indeed there is a certain fuzziness there—but those obligations do not make the Quad itself a collective arrangement. In the late 1990s, Ralph Cosa and others referred to the US-Japan-ROK trilateral as a “virtual alliance,”<sup>20</sup> but agreed that it was not a full alliance. In the case of the Quad, Australia does not expect either the Quad or the US-Japan Alliance to come to its defense in the case of hostilities with a third country.<sup>21</sup> It relies on its own pact with the United States. This does not mean that the Quad or the US-Japan Alliance do not play a role in Australia’s strategic calculations, but that those calculations do not fully anticipate reliance on those bodies.

## **Making the Case**

Some historical events have had a lasting impact on Western policy elites and how they view alliances. Nearly every schoolchild learns how alliances helped lead Europe into war in 1914.<sup>22</sup> However, there is a good argument that historians and policy elites have drawn the wrong lessons from that period. This because the Triple Entente—consisting of Great Britain, France, and Russia—was not in fact a binding alliance at all. Instead, it was an informal agreement which lacked defense obligations, similar to the contemporary US-Japan-Australia-India Quad. It was, as I will argue, a form of underbalancing, which lacked strong mutual defense obligations—and thus—a strong deterrent posture. Mirroring the softening language of the Quad’s “unofficial gathering,” Lord Grey called the Triple Entente a “diplomatic group” in August 1914, in remarks to the House of Commons. Rather than seeking to reassure his allies, he sought to allay the domestic fears of entrapment: “Nothing which passed between [our] military or naval experts should bind either government or restrict in any way, their freedom to make a decision as to whether or not they would give that support when the time arose.”<sup>23</sup> Indeed, Britain stood by when Germany declared war on Russia and France, only coming in on the side of its allies after Germany invaded neutral Belgium.<sup>24</sup> So,

while Britain's desire for autonomy and aversion to entrapment sounds like a natural foreign policy decision, it likely meant that it lacked the ability to deter Germany and the Central Powers from waging war or establishing hegemony.

The origins of the Second World War reveal how the lack of strong alliances invited aggression from a revisionist state. In the months before the Munich Crisis, the Soviet Union (USSR) attempted to form an alliance with France and Great Britain to deter German adventurism. While the formation of an alliance with Stalin's USSR would have been difficult politically, the subsequent threat of a two-front war would certainly have stayed Germany's hand and weakened German territorial ambitions in Central Europe.<sup>25</sup> The lack of a UK-France-Russia united front emboldened Adolf Hitler and ultimately led to Stalin's defection to the Axis side.<sup>26</sup> In fact, if one looks at the history of alliances in the twentieth century, one can see that underbalancing by democratic powers in the face of rising or expansionist powers is more common than one might expect. At a domestic level of analysis, this is because democratic political elites can find it difficult to justify the costs—both in terms of resources and sovereignty—in balancing.<sup>27</sup> Rising defense costs and the loss of sovereignty are unpopular and are often used against them in the political arena. Resistance to “entangling alliances” within US domestic discourse has already been noted, but it should be noted that Great Britain has also had a history of “Splendid Isolation” in an attempt to avoid conflict on the European continent.<sup>28</sup>

If one considers the decade after the Second World War, it is equally clear that the creation of a counterbalancing alliance—the North Atlantic Treaty Organization with a credible deterrent—helped contain rising Soviet power and deterred it from expansion into Western Europe. While it is true this did provoke the USSR to build its own alliance bloc—the Warsaw Pact in 1955—it nevertheless created a stable setting for military competition and stymied Soviet political warfare and coercion against individual Western states while creating a group around which smaller and medium sized states could rally. Over time, its memberships, capabilities, and territorial size grew. While there is a cottage industry in academic circles among the original NATO members that criticizes the post-Cold War expansion into Eastern Europe for having worsened relations with Russia,<sup>29</sup> these debates sideline or ignore the reason post-Soviet states were so eager to join NATO in the first place.<sup>30</sup> Indeed, even Russia itself sought NATO membership until 2004,<sup>31</sup> and by some accounts, it was Kosovo—not enlargement—that destroyed Moscow-Washington ties.<sup>32</sup> The fact that many young democracies—newly shorn from the Soviet Empire—would seek their security in a multilateral alliance is testimony to the appeal and success of traditional alliance systems. That is not to say that alliances are perfect, nor to argue that the Quad should recreate the sort of organiza-

tional structures and institutions of NATO—those are unlikely to be desirable or even possible—but it is to argue that the concept of the alliance—with mutual defense commitments—remains salient and useful. In an age of increasing Chinese military capabilities, Chinese nationalism, and its growing appetite for hegemony, only a full alliance can act as a lynchpin for regional security.

### **Is China a Sufficient Threat?**

One argument for not turning the Quad into a formal alliance is that its members are not sufficiently threatened by China to warrant the burdens and risks of such a grouping. While this has been true, it is clear that the trend lines do not bode well for this line of reasoning. The 2018 US *National Defense Strategy* states that “As China continues its economic and military ascendance, asserting power through an all-of-nation long-term strategy, it will continue to pursue a military modernization program that seeks Indo-Pacific regional hegemony in the near-term and displacement of the United States to achieve global preeminence in the future,”<sup>33</sup> while the Japanese *Defense White Paper 2021* states “China has sustained high-level growth of its defense budget without transparency, engaging in broad, rapid improvement of its military power in qualitative and quantitative terms with focus on nuclear, missile, naval and air forces.”<sup>34</sup> The Japanese paper also highlights China’s coercion in the East China Sea and raises concerns about a contingency concerning Taiwan. Australia’s 2020 *Defence Strategic Update* (to the 2016 *Defence White Paper*) says that “Since 2016, major powers have become more assertive in advancing their strategic preferences and seeking to exert influence, including China’s active pursuit of greater influence in the Indo-Pacific. Australia is concerned by the potential for actions, such as the establishment of military bases, which could undermine stability in the Indo-Pacific and our immediate region.”<sup>35</sup> Even India, with its long policy of nonalignment, has suffered a dramatic increase in its threat perception of China in the wake of Chinese encroachment on its northern border. Asked whether China was “enemy number 1” for India at a security conference, India’s Chief of Defence Staff General Bipin Rawat, responded, “No doubt. . . the threat on the northern borders is much bigger.”<sup>36</sup>

Furthermore, the speeches and policies of Xi Jinping indicate that Chinese leaders themselves believe that China should be more assertive and “stand up.”<sup>37</sup> In his 2017 speech to the National Security Work Forum, for example, Xi Jinping argued that Deng Xiaoping’s low-profile approach to Chinese foreign policy was outdated: “At this moment, our diplomatic strategy must keep pace with the times and step out of the stage of ‘hiding our capabilities and biding our time.’”<sup>38</sup> And these exhortations can be seen in the People’s Republic of China’s (PRC) rising defense spending<sup>39</sup> and military modernization. Crucially, it has broad maritime territorial

claims across the South China Sea and in the East China Sea, which it seeks to resolve through various gray zone, economic, and paramilitary means<sup>40</sup>—and then attempting to create rules after-the-fact,<sup>41</sup> eschewing both legal and diplomatic compromises. While the South China Sea could not be said to be of existential interest to the Quad members, it is a clear attempt by the PRC to control vast amounts of international waters, and by extension, the global trade that transits those seas. Finally, it has indicated that it has the military capability<sup>42</sup> and the political drive<sup>43</sup> to reinforce them. Most worrying, is the sheer number of exhortations by Xi Jinping for the PRC military to be ready for war at any time, examples of which occurred in July 2017,<sup>44</sup> January 2019,<sup>45</sup> May 2020,<sup>46</sup> October 2020,<sup>47</sup> January 2021,<sup>48</sup> and March 2021.<sup>49</sup>

### **Alliance Skepticism**

Security practitioners and policymakers reading this might surmise that international relations theory is simply insufficient to explain the complex dynamics occurring in the modern international system. Some have argued that alliance theory needs an overhaul<sup>50</sup> and that “virtual alliances” are merely a new development, fitting to the modern security environment. Those who are averse to alliance commitments have a sophisticated understanding of what groupings like the Quad can accomplish without collective security arrangements. However, this aversion to military obligations is not new. In fact, the father of neorealist theory, Kenneth Waltz, directly states that some states do not always obey systemic imperatives, and either misunderstand or misread the structural variables in the system. This is because states are comprised of foreign policy elites who debate and contest interpretations of a state’s national interests, its threats, and which policies will secure it.<sup>51</sup> Democracies are, as I have pointed out, more vulnerable to these internal debates because of their inherent plurality when it comes to the creation of national strategy. When thinking about the Quad, there is in current debates a skepticism toward alliances, which believes that turning the Quad into a formal alliance might antagonize China.<sup>52</sup> To some extent, this argument is related strongly to states in Southeast Asia and the desire to maintain the status quo. In remarks at the Shangri-La Dialogue, for example, Singapore prime minister Lee Hsien Loong argued against the creation of “rival blocs” that might “force countries to take sides,” remarks that are repeated in one form or another when considering the geopolitical situation in the region. While these arguments have salience and have shaped how Quad members de-emphasize the China-threat aspect of the Quad, underbalancing a more assertive China is not in their long-term interests as it may impair their ability to deter future aggression. Nor is it really in the interests of Southeast Asian states to delay or weaken efforts by military-able states to build a deterring bloc to Chinese adven-

turism since it is their territory that is at most risk. However, as noted before, this underbalancing behavior is not historically unusual. Consider Belgium in 1940. Prior to its invasion by Germany, it continued to eschew any joint security cooperation or staff talks with France or Britain,<sup>53</sup> and blocked efforts by the two to create a common military bloc against Germany. Its desire to maintain the status quo was higher than its fear of invasion and occupation even though it had previously suffered invasion in 1914 by Germany under the Schlieffen Plan. Consequently, we can see that its strategy of underbalancing—intended to avoid antagonizing a threat—actually enabled and facilitated that same threat. So, while it is clear that some states in Southeast Asia—like Belgium before them—seek to maintain the status quo, it is not clear that their strategies for achieving that are likely to succeed given trends in Beijing’s behavior. Thus, while the Quad states should not ignore the concerns of Southeast Asian states or the implications of Chinese strategic messaging, they must prioritize deterrence and security.

### **Alliances and the Security Dilemma**

Underbalancing on the part of the Quad members, therefore, is in part driven by a “security dilemma issue.” The argument is as follows: the forming an alliance prior to an increased threat environment could in fact lead to a security dilemma,<sup>54</sup> causing the threat to counterbalance to worsen the threat environment. In other words, if the Quad members were to prematurely create a “NATO-in-Asia,” China might respond by becoming more aggressive and relations will suffer a downward spiral similar to that which occurred between the United States and the Soviet Union during the Cold War. This argument, if examined closely, holds a key assumption that requires testing: that doing X will decrease security, while doing nothing will increase or allow security to remain the same. This is problematic for two reasons, one theoretical and one historical. Theoretically, this overemphasizes the Quad’s agency over that of China in terms of impacting the security environment. One might respond to this argument with the following counterfactual: “Did the absence of the Quad between 2008 and 2017 lead to a decrease in Chinese assertiveness?” If one considers Chinese policies during this period, it is clear to us that this is not true. China went on a major island-building spree across the South China Sea, increased its pressure on Japan in the East China Sea, increased pressure on Taiwan, and began what Rush Doshi calls China’s second displacement strategy (to remove the United States from the region).<sup>55</sup> Thus, we must argue that while the danger of a Chinese response is a real one, the risks in not deterring Chinese adventurism bring with them equivalent or greater risks of emboldening Beijing’s ambitions. There is a follow-on, closely related argument that states that if the United States and other Quad partners create a formal alli-

ance, Beijing will respond by creating its own alliance grouping, perhaps with Russia, or with willing members of the Shanghai Security Cooperation Organization and the region would swiftly fall into rival blocs of nations—a notion discussed within Chinese academic circles.<sup>56</sup> There is a three-part response to this. First, Russia and China are already beginning to align over their dissatisfaction with the liberal rules-based order and their willingness to change it unilaterally or coercively. Their actions across the South China Sea and Arctic Sea indicate a systemic challenge to the fundamental principles of the maritime order,<sup>57</sup> while their rhetoric and arms build-up over Ukraine and Taiwan indicate a willingness to expand territory by force. The strongest counterargument to this line of reasoning is that Sino-Russian military cooperation and coordination is already taking place in the absence of a Quad-alliance. One need only consider how Russia has raised the number of overflights and joint exercises with China in Northeast Asia as well as China's criticism of NATO during the Ukraine crisis. And finally, if rival blocs do arise, this in and of itself need not destabilize the region. It may even stabilize what has been—since 2014—a period of great instability. One need only consider how—after some initial testing of resolve—the two Cold War-era blocs fell into “strategic stability,”<sup>58</sup> which in turn opened room for détente and disarmament downstream.

### **Concluding Thoughts**

This article has sought to push back against the accepted wisdom that the Quad should never become an alliance and in fact argued that the four states are underbalancing China in the current security environment. Indeed, this underbalancing has been quite a common mistake for states throughout the history of great-power competition. I have sought to argue—through the lens of twentieth-century history—that alliances are not only useful to prevent conflict and hegemonism, but are also vital. I have noted that, over the past century, there were three separate instances of great-power conflict—the first two involving a hegemonic-minded Germany and the third involving a hegemonic-minded USSR. In the first two instances, liberal democracies were disorganized and unable to present a united front to a potential aggressor and failed to deter aggression. In the third example, liberal democracies were able to present a united front to an aggressor and deterred Soviet invasion. While it is true that they ultimately were compelled to wage a long drawn out “cold” war, aided no doubt by the threat of mutually assured nuclear destruction, this was ultimately preferable to the existential threats of invasion and occupation and both sides were able to de-escalate from a position of “strategic stability.” Again, this is not ideal, but it is far more appealing to great-power conflicts and expansion through war.

Finally, I have argued that the primary argument against turning the Quad into a formal alliance—that of creating a security dilemma with China—can be countered on several points. First, in the absence of the Quad—the years between 2008 and 2017—China did not restrain its own behavior and in fact hastened its aggressive behavior in the South China Sea and East China Sea. Second, while there may be risks in making the Quad a full alliance, there are greater risks in failing to deter China. China's increasing aggressiveness must be factored into this. Third, looking at the broad totality of Chinese behavior, it is clear that it seeks to reorder or shift the current rules-based system in favor of its own preferences and has not sought to promote this change diplomatically or peacefully, but rather employed military coercion. A full alliance would seem to be a proportionate response to that and might even push China to the negotiating table or to pause its ambitions. It's worth remembering Churchill's thesis that it was Hitler's diplomatic success at Munich in the face of Western weakness that actually empowered Hitler vis-à-vis the German military, and that war could have been prevented by a united front. In terms of strategic messaging, the Quad could attempt to allay Chinese concerns by making two points clear: that the alliance is defensive, and it only seeks to deter the use of force to change territorial boundaries. While such language clearly points to China, it points to what Elbridge Colby—a noted US strategist—calls a “strategy of denial,” not an offensive or invasive strategy.<sup>59</sup>

There are several issues beyond the scope of this article that are worthy of mention, some of them already discussed by the foreign policy community in all four countries. How would the Quad fit into the United States' traditional alliance system in Asia? Would it be merged or remain separate and distinct? Those questions are beyond the scope of this article, but those issues would have to be settled with New Delhi since it has traditionally been wary of the US alliance system. How might the Quad deal with today's threats outside of the broadly military? How might it, for example, be established to deal with influence operations, political warfare, and economic coercion? A number of papers indicate that today's military alliances should have more than just a mutual defense commitment—that they should set the stage for other types of competition and nonkinetic deterrence, perhaps cooperating in supply chains, on key technologies, and over diplomatic incidents. That the four Quad members might do this while still avoiding a NATO-like bureaucracy and structure is possible. The Trilateral Strategic Dialogue's loose and functional working-group structure might serve as a template for the Quad going forward, particularly since three of its members are already in the Quad. While this article has not fully established all the parameters for becoming a full military alliance, it has shown that democracies that underbalance hegemonic-minded rising states have suffered the consequences. For that reason alone, the

national security communities in all four nations should consider turning the Quad into a full alliance. ♦

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### **Notes**

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18. There are even *implicit* alliances—those that are unstated—though they are considerably rarer than those discussed. The United States and Israel are not in fact formal allies, but it is understood between the two countries that domestic pressures in the United States would not allow the state of Israel to suffer an existential threat.
19. One can see examples of this ambiguous language in US alliance language. Domestic pressures within the United States, particularly from a US Congress jealous of its prerogatives to declare war, added the phrase "meet the common danger in accordance with its constitutional processes" to US treaties with Australia and New Zealand, with Japan, and with South Korea.
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# Reorienting Indian Military

## Grand Strategy

### Defensive Territoriality to Offensive Oceanic in the Indo-Pacific

REAR ADMIRAL RAJA MENON, INDIAN NAVY, RETIRED

In 2017, China overtook the United States in gross domestic product (GDP), if measured in purchasing power parity.<sup>1</sup> Strategic circles worldwide have been in a quandary over the consequences, for, after all, despite the confusing nature of international relations, there is still a remnant of world governance, over which the world's hegemon presides. As a measure of the world's concern, a conference was convened in February 2019 by the Washington-based Office of Net Assessment to discuss the consequences of the possible forthcoming loss of hegemony by the United States. The organizers were taken aback when most participants implied that this feared loss of hegemony would not occur. The conference concluded inconclusively, suggesting that much further discussion was required on the nature of hegemony.

It would be wise of the Indian strategic community to do its own analysis, particularly if the concept of the Indo-Pacific is a forthcoming reality. To dissect the rise and fall of the national GDP of countries, we are largely dependent on the work of Angus Maddison, according to whom, for over 500 years, China has in fact had the largest GDP; except for perhaps the year 1700 when, at the height of the Moghul Empire, India assumed the first position.<sup>2</sup> Yet, in 1767, Robert Clive defeated Siraj-ud-Doula at Plassey, extracting from Mir Jafar<sup>3</sup> £160,000, equivalent to £21 million (2019) and £500,000, equivalent to £70 million (2019), which formed the corpus of founding the British Indian Army, London's sword arm in Eurasian battles for two centuries.

In 1890 Great Britain, in a remarkable demonstration of hegemonic power, mounted a punitive expedition against the Mahdi in Sudan for the murder of the British agent Charles George Gordon. Traversing 1,000 miles up the Nile, a combined force of British and Indian troops decisively defeated the Mahdi's forces at Omdurman,<sup>4</sup> giving rise to the famous ditty "we have the Maxim gun [machine gun], and they have not." A year later, the British undertook the infamous opium wars against the world's number one GDP power—China. Peking at the time had under arms the largest army in the world, but no significant Navy, demonstrating in the early twentieth century that a powerful continental country could be insig-

nificant as a hegemonic power. Britain's GDP at the time was only the fourth largest, indicating the link between GDP and hegemonic power *could* be tenuous. In the nineteenth century, and even later, Britain's GDP was only a fraction of China's, but there was little doubt in the mind of the world as to who the hegemon was, even though sometime in the late nineteenth century the United States overtook both China and the United Kingdom in GDP. In actual hegemonic power, the narrative is completely different from that of the competition over GDP—hence it is easy to understand the skepticism of the general audience at the Washington conference over discussing the impending loss of US hegemony.

The economic decline of the United Kingdom began during World War I. Britain was forced to borrow heavily, mostly from the United States, so much so that the national debt to the United States increased from £650 million in 1914 to £7.4 billion in 1919.<sup>5</sup> The total debt of the United Kingdom at the end of the world war was £1.78 trillion, or 86.5 percent of its GDP. The total war cost over £3 trillion, and in 1920–21 resulted in the deepest recession Britain had ever experienced. The economic woes of the country led to the United States in usurping the world's economic lead by the mid-1930s. Nevertheless, during WWI Britain demonstrated world hegemony by sitting with France and parceling out among themselves the collapsed Ottoman empire in the Middle East. Called the Sykes–Picot Agreement,<sup>6</sup> the Middle East was carved up into French and British spheres of influence, by drawing several straight lines marking the boundaries of Saudi Arabia, Jordan, Syria, Iraq, Israel, and Lebanon. In an exercise of supreme hegemonic power, the Middle East countries came into existence, without regard to ethnic or sectarian characteristics.

In the meanwhile, the United States was quickly rising, even though some said that it had already risen in 1890, when its GDP overtook that of Great Britain. Hegemony was unpopular in Washington as it was considered imperialistic. The first writer to suggest a world role for the United States was Alfred Mahan, the naval strategist who said that a great power must control the sea lanes, for which foreign bases were necessary.<sup>7</sup> These words were echoed almost verbatim by the 19th Communist Party Congress in Beijing, which spoke of China becoming a world power by 2050. Bankrupted by the expenditures of WWII and the money that Great Britain had borrowed from the United States and backed up by the huge fleet of aircraft carriers that the US Navy had built against Japan, Washington quite smoothly slipped into the vacant hegemonic slot left by Britain. Consider this—the United States took 55 years, from 1890 to 1945, to translate economic superiority into hegemony. Can China do it in 30 years? Perhaps it can. New Delhi needs to know, because to live under Beijing's hegemony is not going to be easy.

## India and the Hegemon

The Indian ruling congress party very early after independence opted for a policy of nonalignment and, looking back 70 years, it can be said that the policy benefited India on all fronts. Diplomatically, the closeness to the erstwhile USSR rescued India in the international forum on Kashmir for many years. Simultaneously the country was virtually fed by American PL 480 wheat for over a decade. These are not the only two examples, but many more can be produced to show New Delhi taking advantage of both sides for the country's benefit. After the Cold War ended, New Delhi quickly shed its anti-US stance in the Indian Ocean, recognizing the global maritime hegemony of the United States. Joint exercises quickly followed, while Russia continued strategic assistance in the nuclear and submarine programs. Over the years, New Delhi has found itself comfortable living under US hegemony and has even slowly begun to depend on it against a rising China. Today, the Quad exists as an idea, if not a formal alliance. Diplomatically also the nuclear deal with the United States and efforts to end India's technological isolation have pushed Washington and New Delhi closer. If we make any realistic deductions from Xi Jinping's declaration at the 19th party congress, it must be that Beijing intends to become a great power, a maritime hegemon, and participant in making the new world order. While the contours of this new world order are yet to emerge, the Belt and Road Initiative gives us a clear idea as to the global reach of China in 2050.<sup>8</sup> At that stage it will be too late for New Delhi to make up its mind on the core of its foreign policy. This is because Beijing, by accessing Pacific and Indian Ocean ports, would already be able to challenge US maritime hegemony in India's neighborhood. Pakistan would automatically be part of the greater Chinese alliance, while India will be outside it. Hence, India's choice would already have been made—to be hostile to Beijing's world.

It is too early to conclude whether Beijing's attempt to become the world's hegemon by 2050 will succeed, or, whether the world might find itself divided into two spheres of influence. Being a geographical neighbor of China's with an adversarial relationship on the border, India is going to find it difficult to pursue a policy of strategic autonomy, particularly with an underfunded armed force. This is especially so if military thinkers continue to tread an intellectual rut, concerned only with a strategy of territorial integrity. In the post-Cold War world, India has adjusted to living under US hegemony, although New Delhi has disagreements with some US overseas deployments. There is some level of comfort that the United States as a hegemon is still a liberal democracy. How will India adjust to a hegemon who is a dictatorial, one-party state with an adversarial relationship over a 2,500-km border, and has intentions to dominate the Indian Ocean with access

through Pakistan and Myanmar? In January 2020, while the world was combining to sanction Myanmar over the international court's judgment of genocide against the Rohingyas, Beijing first blocked the motion in the security council and second sent Xi Jinping to Naypaydew to sign a gasoline agreement from Yunnan to the Bay of Bengal.<sup>9</sup>

The theater of future conflict is undoubtedly the Indian Ocean with China attempting to dominate the geopolitics of Southeast Asia, the North Arabian Sea, and the south Indian Ocean. The People's Liberation Army Navy (PLAN) will have adequate carrier battle group numbers to operate in the Indian and Atlantic oceans. Off their own coast they will probably follow a strong sea denial strategy based on missiles, shore-based airpower, and submarines. Should our navy to follow a Mahanian strategy of protecting sea lanes only, it will be met by skeptical political thinkers, resulting in diminished funding. The Navy will have to find an aggressively positioned role in the changed hegemonic world, where it will have to influence Beijing's strategy in the Indian Ocean. The strategy will have to be relevant in a post-Mahanian world for three reasons.

- Mahan based his strategy on the narrative of maritime conflict between 1650 and 1815. Fukuyama's *The End of History and the Last Man* pertinently points out that there were only two real democracies in 1815. In 2010, there are almost 140 democracies, even if they are somewhat imperfect. Democracies do not make war on other democracies, and hence, the likelihood of war has greatly diminished. Wars on commerce, involving the severing of sea lanes are more in the past and globalization and the World Trade Organization have made safe sea lanes a universal objective. Navies structured only to protect sea lanes are out of date.
- Mahan's world did not know nuclear weapons. The advent of weapons of mass destruction has actually been a dampener to conventional wars, and the war at sea against the economies of the enemy.
- In a world where the hegemon is changing, the great worry is the stability of geopolitics. Large navies could become the primary influencer of changing geopolitics, along with financial inducements that alter the voting pattern in the General Assembly. We are now looking at the post-Mahanian world where navies are coercive instruments, backing diplomacy, rather than sea lane interdictors.

The failure of India's maritime strategy to create resonance in Delhi has resulted in severe underfunding, amounting to just 14 percent of the defense budget. On the other hand, the Army's disproportionate share of 61 percent of the budget

has resulted in the Indian Army aggregating 1,250,000 soldiers, who outnumber the PLA by 265,000. Yet a combination of factors, such as adverse geography, Beijing's vast financial resources, and the huge Chinese expenditure in border infrastructure, ensures that India can only take a defensive posture in the Himalayas. No punitive offensive strategy is possible despite spending 61 percent of the \$72 billion defense budget. To live as the neighbor of a rogue hegemon, some conventional deterrent must be evolved. The land option has been attempted and despite spending the lion's share of national funds, it has proved to be a failure. This article investigates a new oceanic option, using the lessons of the Revolution in Military Affairs (RMA), leveraging the Quad, to create information dominance and to create a punitive strategy. Options such as cyber warfare and the use of artificial intelligence were examined, but New Delhi has left it too late to start catching up with China, which has had a head start.

### **Leveraging the Quad: Regaining the Advantage in an Asymmetrical Conflict with China**

There are few to no chances of democracies achieving strategic surprise in great power conflicts, which is why the exclamation of the standard lookout on a Pakistani destroyer patrolling off Karachi on the night of 4 December 1971 was explicit. He shouted in Urdu that he saw a red fireball approaching. From the top to the lowest ordinary seaman, this remark was the only warning of the Indian Navy's surprise missile attack on Karachi.<sup>10</sup> Such instances are rare, testified by Secretary Robert Work when he answered in an interview that the US Navy would probably have to receive the first blow in a conflict with China. That said, it should not have led to the humiliation of a US Navy destroyer, which was brought to a standstill by a bunch of fishing boats crowding the path of the destroyer, who then hijacked its towed sonar. In India, a democracy, we may also have to accept that the events of Nathu La and Galwan are only going to recur on a geopolitical scale as Beijing strives for world hegemony. How can the Indian Navy craft a strategy to regain the competitive advantage, lost by others in what will eventually turn into a battle of the first salvo? This article contends that the limitation of being a democracy need not mean compulsory humiliation, and that regaining the competitive advantage is a compulsory strategy for democracies. The Indian Navy is chosen to lead such a tri-service strategy. This must be done with care, so that the limited action does not lead to open war, while simultaneously ensuring that escalation remains within our control.



### ***Oil Imports—China's Achilles' Heel***

Much literature already exists on the relatively invincible front presented by China, particularly in the continental domain. In the maritime arena the “carrier killer” ballistic missile threatens to erode the general US naval supremacy in the west pacific. For such a country, the oil imports passing through the Indian Ocean seem to present an acutely unguarded front. Particularly so if the normal PLAN presence in the Indian Ocean is limited to the incoming and outgoing ships of the Somalia patrol. That said, let it be clear that there are no plans to attack or sink unguarded Chinese or third party flagged oil tankers. China's Achilles' heel is being identified with the purpose of creating a threat chain that will lead to the limiting of the intended battlespace over which information domination is sought, and therefore an area where PLAN numerical superiority will be inconsequential. The oil will indeed be threatened but the eventual targets are unquestionably PLAN combatant vessels, who will be deployed in response to an oil sea line of communication (SLOC) crisis.

### ***The Area of Oil Vulnerability and Beijing's Strategic Choices***

China was at one stage self-sufficient in oil, but its impressive economic growth makes it the most oil import-dependent country in the world.<sup>11</sup> To arrive at a limited geographical area through which its oil import passes it is necessary to identify the sources of its import. According to the CIA factbook, 44 percent of China's oil comes through the strait of Hormuz and the Red Sea, rounding Sri Lanka, and the traffic flowing through the strait of Malacca. Another 21 percent originates in countries such as Angola, Congo, Venezuela, the United Kingdom, which rounds the Cape of Good Hope and transits through either the Malacca strait or the Indonesian straits. The second-largest single source of Chinese oil, Russia, sends 15 percent of the total imports mostly via continental pipelines and a small amount by rail. The remainder of Chinese oil consumption is locally produced. What Chinese sources loosely refer to as the “Malacca dilemma” is actually a geographical area as shown in the figure (Fig 2). Naturally, it follows that if India decides to intercept Chinese oil, the effort will have to be concentrated in that part of the Indian Ocean before the oil tankers transit the choke points. Intercepted tankers can be held in a holding area off the Nicobar Islands belonging to India.

Holding Chinese oil is not an end in itself but is meant to provoke an expected reaction. Therefore, China's calculations on its oil import vulnerability cannot be different from the calculations made in Washington or New Delhi. In the year 2019, before the onset of the covid pandemic, China's oil consumption was roughly 650 million tons, which converts to between 1.5 and 1.8 million metric

tons per day. This amount of oil could on average be carried by between seven and nine 200,000-ton oil tankers per day. Although we have no specific evidence, China should need to unload seven to nine super tankers a day to keep its economy running. This much is clear to all concerned. Beijing's national security strategy must be taking cognizance of this vulnerability. Once these tankers transit the straits and enter the South China Sea, they enter an area of Chinese maritime superiority, but before they do so, what is Beijing's calculation? Do they believe that their SLOCs in the Indian Ocean are safe because the United States assures them that the Quad strategy is a "free and open" Indo-Pacific? If that is so, are they assured that they can be expansionist and aggressive on the Himalayan border, and be guaranteed that no punishment will be imposed in the Indian Ocean? This must be the case because there is no explanation for their aggression in the Galwan valley against India in 2020.

This chain of events clearly must be broken. For the United States to take an opposing stand against China in the South China Sea and guarantee the safety of China's oil in the Indian Ocean is a contradictory stand and minimal to national interests. So far New Delhi has not raised this issue with Washington, despite the first discussion paper "Striking Back" being sent to the government of India, recommending the abandoning of the "free and open" assurance.<sup>12</sup>

### **Influencing Beijing's Strategic Choices**

The grand strategy is not to force a conflict over intercepted oil tankers, but to stress to Beijing's strategists that rogue behavior, whether against India in the Himalayas generally or against world order will have bad consequences. As China tends to challenge the US hegemony, there will be increasing compulsion by the democracies to compel China to abide by the rules. A threat to Chinese oil in the Indian Ocean is of world benefit and particularly so for India. But those who make strategic choices in Beijing are shrewd, headed by Xi Jinping. When they think through possible consequences, the results must go way beyond the diversion of oil imports and point toward a maritime disaster.

The PLAN is a growing force, with China's shipyards already outbuilding the US Navy. Beijing would therefore want to contest the interception and diversion of their oil. So, when they make their assessment, they will rapidly arrive at the area in the Indian Ocean that they will have to contest and dominate. This area would be no different from the one that India also must dominate. Hence, we arrive at a common perception of the battlespace.



**Figure 1. Pictorial Representation of the Eastern Battlespace (Source : Author)**

### **Dominating the Battlespace off Malacca and the Indonesian Straits**

It has already been argued that a Sino-Indian conflict, in general, would be an asymmetric one.<sup>13</sup> However, this does not create any anxiety, because India with the nonlethal assistance of the Quad intends to dominate the battlespace through the superior information-gathering maritime patrol aircraft (MPA) assets of the US, Japanese, and Australian navies. The history of conflict is replete with examples of the RMA being utilized to gain victory against asymmetric odds. Indian security analysts should be more than familiar with any number of occasions when Indian armies, superior in manpower, were swept aside by more technologically advanced foreign invaders, eventually leading to India losing its freedom. So, numbers are clearly irrelevant. It is assessed that in nominal times the average number of PLAN combatants in the Indian Ocean are few. If and when Chinese oil begins to get intercepted, reinforcements would be sent, but this is where superior geography kicks in. The PLAN reinforcing fleet would have to transit either singly or en masse through one of the straits westward.

If the entire relevant geographical area, even beyond the battlespace, could be subdivided into areas of surveillance responsibility, it should be possible to locate

and track all PLAN combatants well before they transit the straits. (See map in Fig 2) It is envisaged that PLAN combatants would be reported to the waiting Indian Fleet, days before they even get to the straits, thereby giving the missile-armed Indian Fleet information dominance of the battlespace. Tactically, Chinese and Indian surface-to-surface missiles are of comparable ranges, but with information dominance the Indian side will have the advantage of the first salvo. The presumption is that the world is still working on the lessons of the RMA demonstrated in Desert Storm, that the side that delivers more and accurate ordinance based on the information dominance of the battlespace will win. It is admitted that allowing events to escalate to a full-fledged naval war is neither sensible nor advisable. However, the democracies, including India, are forced to accept that Beijing tends to use its superior force against smaller powers only to terminate the escalation at a moment of Beijing's choosing. This must be prevented by making it evident to Chinese strategists that the costs of an adventure on land, air, or sea will be speedily and devastatingly countered.



**Figure 2. Quad Members Areas of Maritime Search Responsibility (Source : Author)**

Force must clearly be altered with diplomacy, so that the intended initial punitive action can be terminated before a full-fledged war. Termination, for Beijing, is going to be a painful decision, taken only because the alternative is worse. This perception can be given to Beijing only by transmitting the understanding that

due to the Quad, information dominance will always remain with the democracies. There is a presumption here, and that is that PLAN headquarters might also provide the Chinese task force with maritime patrol aircraft cover after they transit the straits. Currently, Beijing has no airfields from which air cover can be provided in the Indian Ocean west of the Indonesian straits. However, to be doubly sure, this issue is dealt with in the succeeding paragraph.

### **Ensuring Air Dominance in the Battlespace and Denying MDA to the Adversary**

As amplified in the first part of the paper entitled “Striking Back<sup>14</sup>,” rarely has India mounted a tri-service response to Chinese aggression. Beijing has taken it for granted that as the generally weaker power, India would never do anything to widen a war of territorial aggression. That this article recommends a punitive response may come as a strategic surprise, but for the fact that the loss of Indian lives would ordinarily be countered by a declaration of a counterattack at a place and time of our choosing. This warning is inevitable, even if it means some loss of surprise. The big assumption is that along with battlespace dominance, we will simultaneously deny the Chinese any ability to fly their MPAs in the same area. To achieve this, we will need the cooperation of the Indian Air Force (IAF), possibly operating out of Car Nicobar. This punitive air force base will need upgrading of its infrastructure to enable the basing of possibly four airborne early warning (AEW) aircraft, such as the US Navy’s E2C as well as a squadron of fighter aircraft, whose primary purpose will be to suppress Chinese MPA and AEW flights in the battlespace.

Clearly the Quad will have to be a party to the overall strategy and to ensure air coordination. It must be reiterated that the United States, Japan, and Australia are not being considered as alliance partners, but collaboration partners with whom an intelligence-sharing agreement already exists. So, in terms of capital assets, we are only short of an upgraded air force base at Car Nicobar, as well as the required air assets. Maritime strategy is therefore no longer a single service function and necessarily needs Air Force cooperation.

### **Diplomacy and Maritime Strategy**

The Indian Foreign Service and the Indian Navy are the only two government services whose jurisdiction of work lies totally outside the borders of the country. It would stand to reason that the two services should work in close coordination. The nature of this coordination has been well articulated by the military strategic thinker Carl von Clausewitz, who famously stated that “war is politics by other

means.”There is theoretically a Clausewitzian line which marks the division where the possibly eventual failure of diplomacy leads to war.<sup>15</sup> So, though war and diplomacy are closely interlinked, the rules and principles for their conduct are vastly different. Indian maritime strategy has been revised several times over the years, but there has never been an institutional method to coordinate its writing between the Ministry of External Affairs and the Indian Navy. This lacuna has now come to the fore because we are transiting from a continental to an oceanic strategy. The maritime strategy being proposed now requires a nod from the Quad and a prior international understanding arrived at in defining the mechanics of instant MPA intelligence sharing.

In the first half century of the life of independent India, the national security problem was rightly considered to be territorial. In a territory-dominated national strategy the Indian Army, as the prime actor, was allocated most of the defense budget. The dominance of the Army in national security was demonstrated when, at the end of the 1971 war the Shimla Agreement, akin to a peace treaty, covered only territorial subjects and the only service officer who went to Shimla was from the army.<sup>16</sup> As Indian economic and military power grew the need was expressed, mostly by Services Headquarters, for a coordinating National Security Council, which came about initially with the Vajpayee government. But with the absence of a Chief of Defence Staff, military, air, and naval strategies continued to be written in silos. Some amount of navy–air coordination occurred with the Navy taking over maritime air patrol duties, the acquisition by the Air Force of maritime strike Jaguar aircraft, the foundation of Southern Air Command, and the operation of Su-30 aircraft from Thanjavur.

Nevertheless, Indian diplomacy has concentrated mainly on Pakistan, China, and the United States. With the Navy reaching out both east and west, and the acceptance of the concept of the Indo-Pacific backed by a powerful Quad, the need for the Navy and the foreign office to work together has vastly increased. Dominating the battlespace over the straits will have a diplomatic fallout, which fortunately is fielded partially by the vast worldwide reach of the US foreign office. Diplomacy will be urgently required for what is being proposed in the succeeding paragraphs. The southernmost tip of the Nicobar Islands is only 65 miles from Indonesia. An Indian strategy to dominate the approaches to the Malacca strait will require the assuaging of the concerns of Indonesia, which is a primary diplomatic task better performed by a Quad initiative. In fact, much of the diplomatic fallout from instituting this strategy could best be achieved by an Indo-US initiative. Particularly so when the United States understands that we wish to challenge the Chinese concentration of power in the strait of Hormuz and the Bab-el-Mandap. There are all manner of world powers with their toes in these

waters, each trying to solve different geopolitical problems. The spaces that are being designated as concerned battlespaces include neutral powers with powerful armed forces of their own. In the eastern battlespace Singapore, with its significant air force, is no push over. Similarly so with the powers in the Arabian Peninsula being concerned with the western battlespace. The ideal and long-term solution might lie in expanding the Quad with powers such as Singapore and Oman.

So clearly, the proposed new maritime strategy has a strong diplomatic component, in which an anti-China United States potentially plays the biggest role. While India may still be opposed to a formal alliance, moving closer to the United States appears inevitable. In the central reaches of the Indian Ocean, far away from the proposed airbases in Car Nicobar and Masirah, and far from Agaléga, the only large airbase is at Diego Garcia.<sup>17</sup> Despite India's previously unfortunate stand on this island during the Cold War, sustained carrier operations in the central and south Indian Ocean will need the use of Diego Garcia as a diversionary airfield. Undoubtedly a successful implementation of this maritime strategy depends on the large diplomatic fallout being fielded with the help of the United States. In fact, ending the old acrimony over Diego Garcia and obtaining permission for landing rights there would be the clearest peacetime signal to Beijing not to intimidate India in the Himalayas.



**Figure 3. Pictorial Representation of the Western Battlespace (Source: Author)**

## **Replicating Battlespace Dominance over the North Arabian Sea, Hormuz, and the Bab-El-Mandap**

Creating battlespace domination over the eastern straits is a grand way of inducing the PLAN to attempt to interfere with the quarantining of Chinese super tankers, and thereby walk into a trap. It answers immediately the likely adverse reaction to the title of this paper from strategists who have been comfortable with the status quo of territoriality as a national strategy. Gaining dominance over the straits does not however constitute an entire national or national maritime strategy. Traditionally the Indian Navy has overtly focused on the North Arabian Sea because of the recurring wars with Pakistan. No one will however deny the Gulf is an area of great overseas importance to India. It is the primary source of the country's oil imports. If taken as a whole, it is India's foremost trading partner. It is home to around seven million Indian expatriates whose remittances to their home country amounts to \$30 billion a year.

Militarily, the Indian Navy had insufficient resources to protect these overseas interests, and as a result, Indian-flagged tankers suffered the greatest damage during the Iran-Iraq war, which saw no Indian contribution to the multilateral tanker escort force. So, an overall Indian maritime strategy has obviously to factor in the country's interests in the Gulf. The area is also, as stated earlier, the source of 44 percent of China's oil imports and a vulnerability that could prevent Beijing's aggressive foray against India. Strategically this area is likely to see the major interest of Beijing, as it has already established its overseas base, unchallenged, at Djibouti. From satellite photos of the work going on at Djibouti, there is no doubt it is meant to serve as a tri-service base in the Indian Ocean in general, and the Gulf area in particular. Development has also taken place at Gwadar, whose future is as yet uncertain. It may not, as summarized earlier, be a gas terminal for an overland pipeline into Xinjiang.

At present the PLAN does not have a major force deployment in the Indian Ocean. This is probably not for a lack of desire, but a result of the compulsion to concentrate on defending China's aggressive policies against Taiwan and the South China Sea islands. So, it makes sense for India to create battlespace dominance west of the Malacca and Indonesian straits as stated earlier. But the day is not far off when the PLAN presence in the Indian Ocean is upgraded to a permanent task force to support its oil SLOCs, its gas investments off Tanzania, and to reinforce its geopolitics in the littoral. A defensive dominance of the north Arabian Sea by India would be necessary as a counterweight to Djibouti, and also to the Sino-Pakistan strategic cooperation if it is enhanced to more than mere supply of hardware. The Indian Navy operates two fleets and there would be ad-



equate forces to deploy off Malacca and Djibouti. The lacuna will be the necessity for airpower, both for air dominance and to ward off a People's Liberation Army Air Force (PLAAF) deployment to Djibouti. A few options present themselves. The first is to imitate Japan and get US cooperation to use the airstrip in camp Lemonier in Djibouti.<sup>18</sup> Considering the Chinese presence in Djibouti this might mean a bold or a foolhardy step. The United States and Japan could probably be pressured under the Quad agreement to lease land at the US camp. An alternative could be an old Royal Air Force airbase on Masirah Island off Oman. Considering the friendly relations with Oman and the frequent routine visits of the Indian Navy to Salalah, Oman might be willing to permit basing rights at Masirah. The Indian base being built at Agaléga does not become relevant to creating battlespace dominance in the Gulf of Aden and the strait of Hormuz. An unlikely option would be to task the Japan Maritime Self-Defense Force's P-3C Orions already based at Djibouti, but this airpower is clearly inadequate to create dominance without fighter aircraft also being operated to create a dominant battlespace.

Historically, the Indian Navy has focused only westwards because of the old animosities with Pakistan. But the bilateral climate is thawing even as this article is being written. The long-term apprehension is however about the chances of survival of an increasingly radicalized Pakistani populace, combined with the possible state failure of Afghanistan a few years after the US withdrawal. All possible scenarios look bleak, as war games played in India have indicated, about Pakistan-Afghan relationships after the possible victory of the Taliban against the Afghan National Army. Could the Afghanistan irredentist claim for Pashtunistan resurface? Could al-Qaeda and the Islamic State take refuge in a Talibanized Afghanistan, as they are doing even now with the US forces present? Could radicalization overwhelm both Afghanistan and Pakistan? India's own geopolitical objectives are limited to helping Afghanistan become a modern state and to utilize Chabahar port as access to central Asia. All these strategic interests, and the necessity to block Beijing in the Gulf of Aden and the Hormuz straits, need a strong Indian presence in the seas off this area. Admittedly the geopolitics in the region are fraught with the Shia-Sunni overlay between Iran and the Arab states. The arbiter is the United States, and Washington might be uncomfortable with an Indian presence in the Gulf, unless it is assumed that it is a friendly one, deployed against China and the Islamic radicals. In any case, US support would be an absolute necessity to obtain the use of Masirah or the airfield at Camp Lemonier.

### **Reducing the Sino-Pak Threat of a Two-Front Land War**

To land up with two bitterly hostile neighbors, out of five, must indicate some catastrophic errors in New Delhi's foreign policy. Both enmities are as old as the

country's independence. Beijing's hostility goes back even earlier to its attack on India in 1962. Mao Zedong misunderstood Jawaharlal Nehru's vision of a new Asia as patronizing bourgeois fantasy.<sup>19</sup> Pakistan's enmity came out of the bitterness over Kashmir's loss, but pure military adventurism motivated its 1965 attack on India, a country seven times its size. 75 years have passed, and this enmity has only grown into threats of a two-front war, which in the minds of the sensible, is a bizarre idea. The government has given no directives to the armed forces on preparing for a two-front war, as it cannot, having stunted the defense budget of 1.8 percent of the GDP.

Attempts have been made over the years to make peace. Notable instances are Rajiv Gandhi's visit to Beijing in 1988 and the remarkable but tragic visit of Prime Minister Vajpayee to Lahore in 1999. However, these two visits alone do not reflect enough determination on the part of the government to make a breakthrough in creating peace. The resultant tragedy is that 75 years after independence, India's grand strategy has been reduced to a trifling territoriality. This preoccupation with territoriality has stunted India's eventual growth and rise to become a regional power by shutting off all windows to the outside world. New Delhi is rife with talk and some desultory writing of how the Chinese, from the time of Zhou Enlai, offered a territorial settlement with a swap between Aksai Chin (for China) and Arunachal Pradesh (for India).<sup>20</sup> There is no authoritative source of why and when it was turned down. But there is fair unanimity in Delhi that, for India, to accept a swap, and the "loss" of some territory, would require a bold prime Minister with an overwhelming majority in parliament. It would seem logical that a territorial settlement would require "give-and-take." The Indian parliament is prepared to take but would viciously oppose any give—even of barren, inhospitable, strategically useless territory.

The relationship with Pakistan has been truly volatile. There was a time when there was a comprehensive dialogue and talk of reopening trade and the border. The shattering of these dreams could be ascribed to General Musharaff, personally, and catastrophically to the fallout from the collapse of the Taliban in Afghanistan, and the spewing out of terrorists. This led to the attack on the Indian parliament and the near-war threat in 2002. Remaking peace with Pakistan then became hostage to Indian domestic politics and the internal political dangers of a soft stance toward Islamabad. However, all is not lost. The nascent perception in Pakistan that they will never rule in the valley of Kashmir has grown and we now have a situation where Islamabad has, at least, laid down conditions for the resumption of Indo-Pak talks. The big takeaway is that the two states have no basic war-threatening quarrel. This has been borne out the number of Indo-Pak war

games played under Indian auspices, all of which had a catastrophic Pakistan terror attack on Indian soil as the *causis belli*.<sup>21</sup>

Does all this lead an Indian analyst to conclude that a two-front war threat exists? The hawks in India believe that it does, and that it could even be a simultaneous attack with prospects of collusion in the nuclear sphere. These assessments exist in Delhi but are held by only a fringe. Even a Sino-Indian border skirmish is unlikely to lead to an open war because the strategic geopolitical objectives for a Sino-Indian or a Sino-Pak-Indian war simply do not exist. This article is based on the presumption that a punitive Indian capability against a Pakistan misadventure already exists and that with an oceanic battlespace dominance strategy in the Indian Ocean, a punitive capability against Beijing also can be built up.

But what of the political desire for peace? Niall Ferguson, in his new book *DOOM*,<sup>22</sup> avers that eventually most, if not all catastrophes in the world can eventually be ascribed to politics. If one follows this line of thinking, one can speculate as to whether, even if the parliament attack occurred in 2002, should it have taken 19 years to restart peace talks with Pakistan? Is it then fair to throw up one's hands in New Delhi and lament that we face a two-front war for no fault of our own? It is true, foreign policy in India is made in the Prime Minister's Office, which proves Ferguson's theory that India faces an unwinnable two-front war owing eventually to political incompetence. Where, for instance, in India are the great negotiators of other treaties worldwide? Indian diplomats, when told that it took eight years to negotiate the SALT I nuclear arms control treaty and that it took four years to negotiate the SALT II treaty, merely look like deer caught in headlights. Compared to these marathon negotiations, the Lahore treaty was negotiated in under four days, and the warning of ballistic missile launches agreed to in a day. Eventually the buck is passed down to the Army, which has 1.2 million service members and laments that it is inadequate for a two-front war. This is monumental incompetence by both the Prime Minister's Office and Ministry of External Affairs, with more blame on the former. It might even be fair to accuse the government of deliberately not conducting serious negotiations with China and Pakistan for reasons of domestic competitive nationalism.

### **Coaxing the Indian Air Force to Go Expeditionary**

Indian strategic culture prides itself on never having projected power—wrongly, as it happens. Until some South Indian historians such as Neelkanth Shastri entered the field of writing their version, the near-millennium of Indian expansion to Southeast Asia was largely ignored. Post-independence, when India took the leadership of the nonaligned movement and the anti-colonial initiative, it was embarrassing to admit that the Pallava Empire had expanded into Kampuchea

and was probably ended by the Cholas, another Tamil dynasty. Indians, when they go to Southeast Asia, exhibit split personalities in holding onto the theory of never expanding out of India, while simultaneously being hugely proud when the Thai and Indonesians put on the Ramayana in ballet. Upon gaining independence, the navy was led by Royal Navy officers, who transmitted to their Indian juniors that the entire Indian Ocean, including the oceanic islands, were the operational area of the Indian Navy. The Indian Navy inherited many of the outward-looking oceanic ideas from their British tutors, although earlier, Whitehall mandarins had conspired to downgrade the old Royal Indian Navy into a kind of coastguard, with the responsibility for India's maritime defense resting with the Commander in Chief Far East Fleet in Singapore. With a pitiful share of the defense budget the Indian Navy was hard-pressed to even show the flag in Singapore, the Gulf, and East Africa.

India has changed, and with it the strategic thinking of the Indian Navy. Not so much in the case of the Indian Army and Air Force, both of which are deeply tied to territoriality, with the Army almost demanding that the air force devote its major force to supporting ground operations. The Indian Air Force has perhaps not been so fortunate in inheriting the legacy of the Royal Air Force, whose moment of glory came with defending its homeland successfully in the Battle of Britain. The Indian Navy's outward look probably has two seminal dates. The first is the year 1986 when it acquired a second aircraft carrier and leased a nuclear-powered submarine. The second date was perhaps 2020 when the Chinese provoked an assault on Galwan, and many strategists began to ask whether the navy could not do anything. 2020 made it clear that the rise of China could have disastrous consequences for its neighbor—India. Merely defending the Line of Actual Control is not a viably deterrent national strategy—and that is all the Army can do. Only the Navy, supported by the Air Force, can craft a punitive strategy, choosing carefully from any of Beijing's weaknesses. This article opts for an oceanic strategy and the domination of three chosen battlespaces—the approaches to the Indonesian straits, the north Arabian Sea, and the oceanic expanse immediately south of Sri Lanka.

In the first two battlespaces, there is the need for air dominance, and this requires the IAF to think of going expeditionary, based at Car Nicobar and Masirah. Such a prospect would normally excite air strategists, but doubts exist about the Indian Air Headquarters. This doubt comes from ditching a comfortable and long-held view on airpower and becoming a little more like the US Air Force, representing national power backing a regional strategy.<sup>23</sup> Strategic writing on Indian airpower is sparse, so it is problematic predicting what the reaction of Air Headquarters would be to being based outside the territorial boundaries of India.

This is despite the rumors of an Indian airbase at Aini and Farkhor, Tajikistan.<sup>24</sup> There is little open-source information on either air base except that the lead was taken by India's Research and Analysis Wing intelligence agency. If there had been any keenness in Air HQ for an overseas base, Tajikistan could have been the first. There is some strategic writing that the IAF is happy to not be a tactical air force, as earlier, and is now a strategic air force. The evidence for this is slight, except for the long ranges of operation of the SU-30 fighters and the acquisition of some air-to-air refueling capacity. But this is precisely why the claim to be a strategic air force is worrying. Does merely flying over a long-distance target create air dominance? Many would hold such a view, and the bold decision to fly Indian paratroopers from Agra to Male to restore the elected government might serve as some proof. But air dominance requires 24/7 airpower and if the Air Force can be relied upon to work permanently from Car Nicobar and Masirah, India can create both Eastern and Western battlespace dominance.



**Figure 4. Central Indian Ocean Battlespace & China's Oil Routes**

### **Domination of the Central Indian Ocean Battlespace**

The eastern battlespace by itself is more of a quick-reaction counterstrategy to another Chinese attack in the Himalayas inflicting casualties on the Indian Army.

Geography, which is favorable to India and disadvantageous for a Chinese Indian Ocean presence, enables us to choose the battlespace, at least temporarily. This tactic has its origins in Army doctrine, where there exists the concept of a “kill zone” or “killing ground.” Easy to set up and simple to execute, all it requires is prior coordination with the Quad. The domination of the eastern battlespace does not constitute an entire strategy, for it presumes a weak initial PLAN presence in the Indian Ocean, and consequently, a rush of reinforcements that enter through the geographically constricted kill zone. If the PLAN presence in the Indian Ocean is already considerable, we need a more extensive strategy, of which the domination of the Arabian sea battlespace is a part, focusing on a threat to Djibouti and Gwadar. The threat to Djibouti should be made overt, even in peacetime, creating a reluctance on the PLAN to base their assets there.

We need however to link these two battlespaces with an oceanic strategy, possibly based around three of the Indian Navy’s aircraft carriers, forming three carrier battle groups creating oceanic battlespace dominance over the SLOCs of the Indian Ocean, Hambantota, and the Chinese developments at Colombo and the general thrust of the Belt and Road into the Indian Ocean. Fortunately, the western part of this oceanic space has Indian access to bases in Agaléga and Seychelles, with a friendly Mauritius to the south. The eastern portion is bereft of friendly bases, except for the Australian presence in the Cocos Islands. The ideal center spot in this area is taken by Diego Garcia, with its extensive facilities, but is presumably available only for an alliance partner or in the eventuality of general Chinese aggression—and American participation.

The dominance of the Indian Ocean is, however, classic maritime strategy going back to the writing of Mahan. “Whoever dominates the Indian Ocean will dominate Asia” is a quote that many seek to own. For India, as Panikkar said, the Indian Ocean is an area that it must dominate. But how is that domination to occur? The Mahanian recommendation was of course achieving sea control by winning a decisive battle. It must be remembered that Mahan based his strategic conclusion on the maritime history of the seventeenth and eighteenth centuries. Even so he was prescient to imply that the dominance of the Indian Ocean would have worldwide geopolitical significance. Panikkar, the first Indian maritime strategist, while bemoaning India’s continental strategy, visualized an “iron ring” around the subcontinent, which again amounted to a defensive oceanic strategy. In the twenty-first century the rise of China overshadows all other geopolitical developments. Panikkar also continued the possible emergence of Chinese sea power, so he recommended an ocean strategy based on “Singapore, Ceylon, Mauritius and Socotra.”<sup>25</sup>

What we must contribute to the wise men who succeed us is the method of gaining maritime dominance although Panikkar, even in 1949, foresaw the importance of airpower. Ever since operation Desert Storm and the revelation of the current RMA, we must incorporate into any idea of oceanic dominance the importance of information dominance and the velocity of ordinance delivery. So, this article has considered the doctrine of modern warfare, and concluded that, starved of funds for 70 years, the Indian Navy must use some patchwork to create oceanic dominance. The eastern and western battlespaces reduce by half the overall area where we must achieve oceanic dominance. However, even the application of the RMA does not alleviate the budgeting crisis and hence, the idea in this article of coaxing the Indian Air Force into an expeditionary role to provide airpower in the western and mid-eastern battlespaces. Every Chief of Naval Staff has repeatedly stressed that India should not forego the advantage that geography has bestowed upon it with a peninsula thrusting 1,500 miles into the Indian Ocean, while the Chinese are hobbled by their geography, restricted to just two points of entry into the Indian Ocean.

The strategy contained in Mahan's seminal work was most probably a recommendation for the United States to follow the example of Great Britain in pursuing greatness through an oceanic maritime strategy. Mahan's writing preceded the advent of the submarine, and he never considered an oceanic sea-denial strategy. In the twenty-first century we have a different geopolitical scenario. China, an essentially continental power, aspires to world domination but realizes that without at least partially challenging US maritime dominance a world power status is unachievable. It has however entered an intense competition in the western Pacific with its aggressive South China Sea expansion and left the Indian Ocean relatively undefended. This is India's opportunity to fashion a modified Mahanian idea of sea domination that includes escalatory sea denial, thereby balancing the situation in the Himalayas with expanding sea denial in the Indian Ocean. This is a nuanced strategy where the use of the classic sea denial weapon, the submarine, would be a blunt instrument. A major submarine deployment is purely offensive and cannot be controlled from headquarters and hence the idea of offensively escalated sea denial through total sea control. This is a peacetime strategy too, where, as stated earlier, we influence the choices Beijing thinks it has regarding its unprotected Indian Ocean SLOCs.

Ideally, this strategy would be executed by an aircraft-heavy navy. Historical underfunding has left the navy with only two aircraft carriers, but two operational carriers are the minimum requirement provided we use geography wisely and that the Air Force can be coaxed into an expeditionary role. By varying the areas where we choose to exercise Malabar and other Quad joint forums, we convey to the

Chinese in peacetime that their SLOCs are safe as long as Beijing follows a rule-based order. And that, in the eventuality of China acting aggressively and in an expansionist manner, we will hold its oil as hostage.

### **Financial Restructuring to Shift to an Oceanic Strategy**

When looking at what India spends on defense, it would be possible to come to two entirely opposite conclusions. The first is that it is quite modest, when one says that it is 2.15 percent of the GDP. That perception would encourage those who opine that it is too small to be tinkered with in any way. The other way of looking at what India spends is to declare that India has the third-largest defense budget in the world. This is next to the United States, a world power, and China, an aspiring world power. Even more surprisingly, India's expenditure is larger than Russia's when it is plain to any onlooker that Russia "does" far more with its military than India. Russia, with its budget of \$61.7 billion, is handily outspent by India's \$72.9 billion—which would come as an unpleasant surprise to most Indian analysts. With its \$61.7 billion, Russia almost balances the United States in Europe, has the world's second-largest air force, and the world's third-largest navy. All this is quite apart from maintaining a balance of the strategic deterrence with the United States, with an impressive triad. When adjusted in purchasing power parity (PPP) terms China's defense budget, which is nominally at \$252 billion, balloons to \$510 billion while India's expenditure rises from \$72.9 billion to \$310 billion.

The question that rises uppermost in one's mind is—What does India do with all the money? The answer to that comes from looking at the individual share of the each of the armed services as a percentage of the total. The share of the Indian Army is 61 percent, while that of the Navy and Air force is 14 percent and 20 percent respectively. The Army, let it be clearly understood, performs only the territorial defense of the country, so that means that India spends \$40.68 billion of its defense budget on territorial defense. This is almost as much as the entire defense spending of Japan (\$49.1 billion) and South Korea (\$45.7 billion) and not much less than France (\$52.7 billion) and Germany (\$52.8 billion). Much more worrying is the proportion of the Indian Army budget of \$40.68 billion that is consumed by the costs of modernization and personnel costs. The Army spends four times its modernization budget on personnel, who number 1,250,000. A table of the starting salary of soldiers in the US, Chinese, and Indian armies is revealing.

Starting salary, US Army ... .. \$1,733 per month

Starting salary, People's Liberation Army... .. \$106 per month

Starting salary, Indian Army ... .. \$370 per month

This is where the diversion on the subject of the defense budget enters emotional territory. Let us be clear that no argument is being made to even imply that the



Indian soldier should not be compensated for his valorous service. All over India, public opinion is unambiguous that the Indian Army is the most respected government institution. What we are looking at is the ratio of expenditure between equipment modernization percentage costs of the three services: Army 18 percent, Navy 54 percent, and Air Force 59 percent. Clearly, these figures are worrying. Because of the unfavorable external environment and the national grand strategy of territoriality, the Army is called upon to repeatedly fight brush fire wars, as in Kargil and Ladakh. The deep and unanswered question that arises is whether the Army's total personnel strength of 1,250,000 makes strategic sense when it spends only 18 percent of its overall budget on equipment and modernization.

The issue becomes particularly acute when we learn that the "overwhelming" force being brought to bear on the Himalayan border is by a PLA whose active-duty strength is 975,000—a figure that is 265,000 less than the active-duty strength of the Indian Army. The first conclusion that can be drawn is that whatever other explanation might exist, our grand strategy needs to shift from territoriality to an oceanic strategy. What this article hopes to convey is that defensive territoriality in an acceptable strategy but remaining on the defensive does NOT require a 1,250,000-soldier army. An offensive, deterrent strategy against China is much better achieved by an oceanic strategy bolstered by an expeditionary air force. Some explanations made by a few analysts need to be addressed. The reason given for an overwhelming Army personnel strength is that India may face a two-front war. This argument has risen lately after Doklam, although there are no facts on the ground to support such a thesis. In any case, it is not for the armed forces alone to assume that they face a two-front war. The Raksha Mantri's directive to the Chiefs of Staff Committee must clearly stipulate such a threat, which can only come if our foreign policy has totally failed. In any case, if there is talk in strategic circles of a two-front war, the government needs to bring out a white paper clarifying the issue one way or another.

### **Downsizing Army Numbers**

This paper recommends that the personnel strength of the Army be reduced by 200,000 over a five-year period, while simultaneously shifting slowly to an oceanic strategy by further strengthening the equipment for the Army and the navy and Air Force. It is estimated an approximate sum of Rs. 3,000 crores can be saved annually by reducing the army's personnel strength by 200,000. This amount should be subdivided equally between the three services, to bolster the capital expenditure of all. In any case, we are visualizing a more equipment-oriented army, a third aircraft carrier for the navy, and two new bases/squadrons for the Air Force at Can Nicobar and Masirah. It would take about five years to downsize

Army numbers, so the transformation could be conducted over a decade. The service that stands to benefit the most is the Army itself. Much of its hardware is almost half a century old, and an additional infusion of Rs. 10,000 crores annually would rejuvenate its offensive strength by reequipping its three armored divisions and all its infantry combat vehicles, commencing in four- or five-years' time and stretched out over a decade. It is also worthwhile to note the much-demanded third aircraft carrier could easily be afforded, as the latest queen Elizabeth, the British carrier, was built for \$2.2 billion—which comes out to Rs. 32,000 crores. The Air Force would also be strengthened by two additional overseas bases and squadrons thereby making India a genuine regional military power and supreme in the Indian Ocean.

In the disastrous 1962 war with China, the PLA had adopted the communist system of compulsory military service and had millions of soldiers under arms. Sometime later, probably in the late 1980s or early 1990s, the PLA was downsized to its present strength of 975,000. Beijing had obviously made a calculated decision and did not pluck this number out of thin air, knowing that it had an active border with India. Unconfirmed reports suggest that the Central Military Commission was hugely impressed by the performance of US forces in operation Desert Storm and decided to adopt a Chinese version of the RMA. Today, although the Indian Army outnumbers the PLA Ground Forces, the PLA hugely outnumbers the Indian Army in main battle tanks and infantry fighting vehicles, and has 3,600 self-propelled artillery guns and four times the number of helicopters. The PLA is a lean, swift, and mechanized army, hugely outnumbering the Indian Army in mobility and artillery. The only responsibility that the PLA has that the Indian Army does not is the amphibious warfare theater against Taiwan. The conclusion that can be drawn is that the Indian Army is seriously in need of reorganizing. Structured as it is, it can defend Indian territory adequately, but it can never deter the PLA from choosing the time and place to try and readjust the Line of Control by aggression.

To explain to a limited audience in India the process of modernizing the Indian Army, the serving Chief of Army Staff expounded on the steps taken to use indigenous sources to modernize army equipment. However, he left a big hole in that he was unable to explain how the Indian Army intended to exploit the RMA regarding mountain warfare, when the current RMA is firstly offensive and secondly depends on air superiority. India could perhaps achieve air superiority in Ladakh, but no authority in Delhi would agree to widening the air to include the use of airpower on the Line of Actual Control. As the foremost authority on mountain warfare in the world, can the Indian Army evolve a new RMA for the mountains? Or are we, at the end of it all, abandoning all the lessons of the Desert

Storm RMA, like situational awareness and a fast deployment tempo, and relapsing into slugging it out soldier to soldier? The more we look at our strategic situation on the Himalayan border, the greater the conviction that we, in India, have cornered ourselves into a trap of our own making. By claiming 61 percent of the defense budget and denying a bigger air force, by denying any attempt to take the offensive, by refusing to widen the war, and by pouring all our money into infantry formation, we have with our unfavorable geography maneuvered ourselves into a losing cul-de-sac.

For our ambitions to be a regional power and for our diplomats to speak with authority in world forums, we need the backing of either economic or military power. The tragedy is that after spending \$72 billion, we appear as a country with only an immense army but no regional clout. Our foreign policy could do with the stiffening of a regional navy to back the words of our diplomats in the long years of peace, and for an offensive capacity in case of war.

## **Conclusion**

If the contents of this article are accepted in the Ministry of Defence in Delhi, there will result much intellectual and financial reorientation. A \$3 trillion economy, which India's is, with hopes of growing to five and even 10 trillion in the foreseeable future, will be a regional Asian power. It cannot be solely a continental power with a large army and no power projection capability. The Army has given great service to the nation, first in holding it together, and second in defending its vast multiethnic, multi-religious fabric. In the twenty-first century, a sole preoccupation with defending territorial boundaries is out of phase with world affairs. Only the power projection capability of a domestic India can prevent the aggression of a hegemonic China in the reaches of the Indian Ocean. The million-man Army was created when manpower was relatively cheap, which now it is not. The pay and allowances and the recurring expenditure of the Army absorbs 82 percent of the Army's own budget, which is 61 percent of the total defense budget.

Blocking China's oceanic expansion will allow downsizing the manpower of the Army and a saving of thousands of crores, which can bolster the capital expenditure of all the three armed services. Not least of all will the Army itself benefit, since much of its firepower is of vintage origin. Certainly, an air force wedded to defending territorial airspace is an anachronism in the twenty-first century. The scenario in which defense strategies are to be made in this century will center around a risen China. Rarely has such a situation occurred, where the preoccupation of the democracies will mainly consist of deterring a rising, rogue, autocratic hegemon. Much of our earlier strategic literature needs a revisit and traditional legacies of thought need to be recast to meet the strategic scenario of this century. ☸

### **Rear Admiral Raja Menon, Indian Navy, Retired**

Rear Admiral Menon retired in 1994 as Assistant Chief of Naval Staff (Operations). A submarine specialist, he pioneered the development of the new submarine arm of the Indian Navy and was therefore exposed at an early stage to policy, finance, and strategy. He was a member of the Arun Singh Committee to restructure the national defense setup in India and a member of the Defence University Committee. Admiral Menon is a visiting lecturer at all institutes of higher study of the Indian armed forces and was instrumental in organizing the first nuclear management course for Indian service officers. He is a consultant to the Indian Net Assessment Directorate. With two master's degrees in defense studies, Admiral Menon writes regularly for journals and newspapers in India and abroad. His publications include *Maritime Strategy and Continental Wars* (1988), *A Nuclear Strategy for India* (2000), and *The Indian Navy: A Photo Essay* (2000). *The Long View from Delhi: The Grand Strategy of Indian Foreign Policy* published in India and the US, 2010

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# Artificial Intelligence Technology and China's Defense System

JIERUO LI

Artificial intelligence (AI) technologies have been developed for many years and applied in various areas. Applications of AI exist not only in domestic surveillance but also in military uses. AI-related topics have become even more controversial and attracted more attention where China, a nation with rapid growth in its military development, is involved. This article introduces China's rapid AI progress, demonstrates possible application areas of AI technologies in China, and analyzes the likelihood for China to wage a war with its AI technologies.

## Background and General Applications of Artificial Intelligence

AI is regarded as part of the Fourth Industrial Revolution, which also includes the Internet of Things, genetic engineering, quantum computing, and so forth. Russian president Vladimir Putin once said that “artificial intelligence is the future, not only for Russia, but for all mankind. Whoever becomes the leader in this sphere will be the ruler of the world.”<sup>1</sup> The Trump administration launched the United States' first national AI strategy. After Pres. Joe Biden took office, he invested around \$6 billion into AI-related research projects.<sup>2</sup> Attitudes toward AI from Russian and US leaders, as well as remarks of commercial tycoons such as Eric Schmidt and Elon Musk, reflect the importance of AI, and its potential dangers, too.<sup>3</sup> Development of AI is crucial in areas such as human resources, the public sector, medical care, and even in the military field.

AI is an enabling technology, rather than a type of weapon. Enabling technologies are designed for general purpose, such as the internet and electricity, and do not work for any single purpose—making them different from transportation and other similar technologies. AI can be applied in many field: i.e., natural language generation, speech recognition, virtual agents, robotic processes automation, and so forth. Michael Horowitz points out that AI can be operated in several dimensions.<sup>4</sup> First it can be used as a system to supervise objects, such as planes and tanks, to reduce the need for human oversight. Second, AI can be adopted to process and interpret information; image recognition is a practical example of this. Third, an overlapping AI system could be used both for command and actions. AI is dual-use for civil and military, and later sections in this article will focus on mainly its military aspect.

## **China's Development of AI Technologies and Military Applications**

The *Final Report* released by the US National Security Commission on Artificial Intelligence in 2021 describes China as a “competitor,” if not a leader, to the United States in terms of AI development. A basic understanding of the US-China AI competition is established in the report: “. . . we must win the AI competition that is intensifying strategic competition with China. China's plans, resources, and progress should concern all Americans. It is an AI peer in many areas and an AI leader in some applications. We take seriously China's ambition to surpass the United States as the world's AI leader within a decade.”<sup>5</sup> The report also foresees China's determination to surpass the United States in AI leadership with its talent and technological development. This section demonstrates the area of China's AI development and applications.

Before digging into the military aspects, the reason China has been devoted into AI should be explained. In 2015, China issued the document *Made in China 2025* and two years later in 2017, China released the *New Generation Artificial Intelligence Development Plan*. These two documents proved that China's central government officially confirmed the importance of developing AI technologies. The primary purpose of China's AI development is for domestic use. First, advanced technologies are the major driving force for the economic and commercial development in China. To maintain its rapid growth, China encourages high technologies research and development, including AI, thus many private firms and research institutions have entered this field. Second, AI has been adopted domestically to improve the overall well-being, for example, payment using facial recognition, online AI-driven medical diagnosis, and security cameras that are designed to enhance safety.

China's determination of developing AI technologies is not supported only by documents but also practice. The Ministry of National Defense has established research institutions—the Artificial Intelligence Research Centre and the Unmanned Systems Research Centre—to focus on AI and unmanned systems research and development. The key military think tank, the Academy of Military Science (AMS), has also updated its doctrine to cope with the AI technological development: “The revamped AMS is tasked with driving defense innovation and ensuring that the People's Liberation Army's (PLA) warfighting theory and doctrine fully capitalize on disruptive technologies like AI and autonomous systems.”<sup>6</sup> In addition to the government-backed official organizations, a number of private institutions have also invested considerable sums of money to conduct related research. The central government of China uses the term “intelligentized” warfare to refer to the innovations in military technologies.<sup>7</sup> Ryan Fedasiuk, Jennifer

Melot, and Ben Murphy analyzed more than 300 AI-related equipment contracts of the PLA regarding the adoption of AI technologies, and the result of their research shows that around 2 percent of PLA contracts are related to AI in the half year from April to November 2020. The research also predicted that China would continue to invest in AI technologies and may create vulnerabilities for the United States. Moreover, to quickly transfer technologies from the private sector to the public, China also launched a national strategy, the military-civil fusion, to create a favorable research and development environment.<sup>8</sup>

Among all the AI technologies, China places the top priority on unmanned combat systems and equipment along with other advanced military innovations.<sup>9</sup> Unmanned technology has been profoundly changing the face of warfare, and unmanned equipment is one of the first options for future combat equipment. Since President Xi Jinping took office, he has emphasized the importance of unmanned systems on various occasions. For example, in 2017, when Xi Jinping visited the training of unmanned operations, he said to the sergeant that “UAVs are important combat forces for the modern battlefield. You must carry out your duties well and cultivate good personnel.”<sup>10</sup> Another example was in 2020, when Xi met students at the Chinese People’s Liberation Army (PLA) Air Force Aviation University, he declared, “Drones are profoundly changing war scenarios. It is necessary to strengthen drone combat research, education and training, and accelerate the training of drone pilots and commanders.”<sup>11</sup> The capacities of unmanned combat systems include effectively reducing casualties, achieving accurate reconnaissance, striking, resupplying, configuring flexible activities, and significantly improving combat effectiveness—to list only a few of many such advantages. With the development of unmanned technology, human warfare places more and more value upon information, which AI and unmanned systems excel at procuring.

China’s development of unmanned aerial vehicles (UAV) began in the late 1950s.<sup>12</sup> In 1959, it had basically figured out the law of self-pilot takeoff and landing of two types of aircraft, namely the An-2 and IL-28. In the mid to late 1960s, China had been investing in the development of UAVs and formed a series of target aircraft such as the Changkong-1 radio-controlled target UAV, the DR-5 high-altitude photo reconnaissance aircraft, and the D4 small remote-controlled aircraft. Moreover, in August 1958, the first unmanned aircraft developed by Northwestern Polytechnic University flew successfully, and in 1984, the university established the UAV Research Institute with the approval of the former Ministry of Aviation Industry. In the 1970s, China developed ChangHong high-altitude high-speed unmanned reconnaissance aircraft, T-6 general-purpose unmanned aircraft, Z-5 series unmanned reconnaissance aircraft, ASN series unmanned aircraft, and so forth. Dozens of these target and reconnaissance UAVs have been



mass-produced and deployed alongside troops. The emergence of a large number of Chinese military UAVs began in 2006, when a number of military UAV designs appeared publicly in the limelight, such as the “Xianglong” high-altitude high-speed unmanned reconnaissance aircraft, whose body design is very similar to the US “Global Hawk” high-altitude long-endurance reconnaissance UAV; the “Skyhawk-3” unmanned helicopter that can hover, take off, and land vertically; and the “Dark Sword” UAV shaped like a US-made stealth bomber, which can burst into the enemy’s airspace with its stealth and high-speed performance and conduct suppressive attacks on the enemy’s air defense forces.<sup>13</sup>

The PLA is equipped with at least four types of medium and large UAVs, namely the EA-03 Xianglong, the Attack 1 (Wing Dragon 1), the JWP02 (ASN-206), and the BZK-005 UAV.

- EA-03 Xianglong is China’s most advanced high-altitude long-endurance unmanned reconnaissance aircraft in service. With a status similar to that of the US RQ4 global-use UAV, it is mainly adopted for high-altitude strategic surveillance reconnaissance. The aircraft has an overall length of 14.33 meters, a wingspan of 24.86 meters, a normal takeoff weight of 6,800 kilograms, a mission load of 600 kilograms and an effective flight range of 7,000 kilometers. It can conduct continuous aerial surveillance for 10 hours at an altitude of 18,000 meters from 2,000 kilometers away. The front and rear wings are connected in a diamond shape, which greatly strengthens the stiffness of the wings with a certain stealth capability.<sup>14</sup> During the standoff in Dong-Lang in the in last year between China and India, three Xianglong aircraft had appeared at Shigatse airport, and this confirmed that troops have been equipped with the aircraft.
- The Attack-1, improved from Chengfei Institute’s Yilong-1 (sometimes call the Wing Loong), was unveiled at the 2014 Zhuhai Airshow and was the first active PLA inspection and fighter UAV that was made public at the airshow. Its shape is similar to that of the US UAV MQ-9, while its size is similar to that of the MQ-1 Predator. It has a maximum takeoff weight of 1.2 tons, a length of 9 meters, a wingspan of 14 meters, a payload of 200 kilograms, a maximum lift of 5,300 meters and a range of 4,000 kilometers. The latest Yilong-2 has a major improvement in both size and performance, with a length of 11 meters, a wingspan of 20.5 meters, a maximum flight altitude of 9,000 meters, a maximum speed of 370 kilometers per hour, a maximum takeoff weight of 4.2 tons, and an external hang-up capacity of 480 kilograms. It is equipped with synthetic aperture radar (SAR) as well as laser-guided missiles and GPS-guided bombs and is able to perform con-

tinuous missions for 20 hours. To date, there has been no news that the Yilong-2 has been put into service.<sup>15</sup>

- The JWP02 UAV (ASN-206) was developed by the Xi'an Aisheng Group of Northwestern Polytechnic University and won the first prize of the National Science and Technology Progress Award in 1996. It is rumored that it had received technical support from Israel. The aircraft applies solid rockets in assisting flight, zero-length launch, parachute landing and recovery, and can be used multiple times. It has a maximum takeoff weight of 222 kilograms, mission equipment weight of 50 kilograms, practical lift of 6,000 meters, range of 150 kilometers, and endurance of four to eight hours. The aircraft, which was developed earlier than Attack-1 UAV, currently serves as the mainstay of China's tactical unmanned reconnaissance aircraft along with the Attack-1 UAV.<sup>16</sup>
- BZK-005 UAV has certain stealth capability and is a medium and high-altitude long-range unmanned reconnaissance aircraft. It has a maximum lift of 8,000 meters, an endurance of 40 hours, a maximum takeoff weight of 1.25 tons and a maximum carrying weight of 150 kilograms. Early models are equipped with photoelectric pods, while the latest models are equipped with SAR and other electronic reconnaissance equipment. The media reported that the aircraft has been on a patrol flight mission in the East China Sea. The TYW1 Skyhawk UAV, which was developed on the basis of the BZK-005, rolled off the production line on November 14, 2017. It is reported that the maximum takeoff weight of the TYW-1 has increased to 1.5 tons, with a maximum bomb load of 300 kilograms.<sup>17</sup>

UAVs play three important roles in military applications, the first of which is reconnaissance and surveillance.<sup>18</sup> UAVs can penetrate hundreds of kilometers or more behind enemy lines and are configured at high, medium, and low altitudes. They can provide important reference for strategic decision-making and battle command in large-scale military operations through scanning reconnaissance and close-in reconnaissance to obtain highly accurate intelligence information. The latter is very suitable for PLA military, divisional, and brigade-level forces of the PLA Marine Corps to conduct battlefield reconnaissance surveillance, target search and location, as well as battle results assessment. UAVs can also work with satellites and skywave over-the-horizon radar to search and track enemy maritime targets and transmit back target information in real time. In this way, military UAVs can become an important part of the "kill chain" in antiaircraft-carrier warfare. The second is electronic jamming.<sup>19</sup> Electronic-jamming UAVs can fly over the enemy, emitting electromagnetic waves through their airborne equipment and

the application of interference foil, and so forth to implement interference on the enemy's air defense radar, fire control radar, early warning systems, and other electronic equipment to cover China's aircraft defense and ground attack. The third role is firepower destruction. In addition to antiradiation UAVs that can destruct the enemy's radar and other electromagnetic equipment, attack UAVs, inspection and fighter UAVs, and so forth can also carry out effective firepower destruction against the enemy.

Acquisition of UAV technologies has enhanced China's confidence to conduct reconnaissance and surveillance tasks to protect claimed territory. In the early 2010s, China for the first time sent a UAV to the Diaoyu Dao/ Senkaku Island disputed area.<sup>20</sup> It was able to easily avoid the detection of Japanese ground radar, which surprised the Japanese coast guard. It was only a short and tactical victory that the Chinese UAVs exploited the loopholes in Japan's air defense system and reached the Diaoyu Islands for cruising with an ultra-low-altitude blind spot; it did not change the strategic pattern of the Japanese side's effective control over the Diaoyu Islands.

The most common unmanned aircraft to cruise the Diaoyu Islands is the BZK-005 unmanned reconnaissance aircraft—equipped with a rear-propelled engine, a dual-tail brace structure and an under-nose photoelectric/infrared detection device—first unveiled at the Zhuhai Airshow in 2006 and capable of flying continuously for 40 hours at an altitude of 26,000 feet.<sup>21</sup> The BZK-005's primary detection system is an electro-optical pod under the nose, which is equipped with a forward-looking infrared detection system, CCD cameras, and a laser range/target designation system. Wave-transparent materials are applied in the BZK-005 UAV; thus, it can be determined that it has a satellite communication system that can transmit information to the rear over radio range, which also indicates that the BZK-005 should have an activity radius of more than 1,000 kilometers. The application of the BZK-005 UAV has effectively enhanced the capability of China's naval maritime integrated surveillance system. At present, the quantity and quality of China's naval maritime surveillance aircraft are insufficient, and the application of the BZK-005 can improve the capability and coverage of China's naval target detection and indication system, especially for accurate detection and identification of targets in the middle and near sea, which helps China to comprehensively grasp the real-time situation in the relevant sea areas and provides support for relevant decision making.

For nearly a decade since China sent the BZK-005 to the Diaoyu Island area without alerting Japan, Japan has been cooperating with the United States to equip itself by importing UAVs. Early this year, Japanese media reported that the United States and Japan are currently discussing a military deployment against

China. According to the report, the United States and Japan plan to deploy MQ-9 UAVs near Kagoshima, a move designed to “respond to China’s” regular military operations.<sup>22</sup> UAVs are characterized by high speed and high altitude. The MQ-9 made its first flight in 2014 after improvements were made, and then it was used by the US military. It is understood that the UAV deployed in Kagoshima is a reconnaissance type and it is also the first time the United States deployed this high-altitude type of UAV in Japan.

With the US pivots in Asia, tensions between the two giants, namely China and the United States, have been inevitable. Located in the southwestern tip of Japan, Kagoshima has a very special geographical location in that, if the United States deploys the MQ-9 UAV on the island, it will obtain the information about the activities of the Chinese naval fleet. In other words, the MQ-9 UAV is the US “eye” planted in the vicinity of China for receiving information. In addition, the specific location of the US deployment of the MQ-9 UAV is also thought-provoking, for the reason that to the further south of Kagoshima, there are the Okinawa Islands, followed by the Miyako Strait waters. This area is the “treasure land” that is of great military importance. When the United States and Japan intervenes in the Taiwan Strait conflict, should it occur, the Miyako Strait waters are the shortest cut they must go through. Obviously, China is also aware of this problem. Therefore, China should pay close attention to the Miyako Strait when the cross-strait unification attack commences, if this is the only way. In this context, the US UAVs deployed in Kagoshima are the main means of reconnaissance for the United States and Japan. The UAVs must not only watch out for the moves of the Chinese side, but also conduct reconnaissance of Chinese defense networks.

UAVs are not only used in the East China Sea area, but also the South China Sea area. Even in the border conflicts between China and India, UAVs were also applied. Despite that there has not been any offensive action taken by UAVs in the mentioned areas, one cannot deny the potential there. Considering the unstable situation in the Indo-Pacific, states either focus on AI technologies research, including UAVs, or import arms and technologies from others. It is still unknown that whether the applications of AI technology will eventually arouse an arm race.

## Concerns

The advanced AI technologies that are applied in the military field can exert great impact on deterrence and warfare in the future. Meanwhile, China’s rapid development of AI technologies and applications in its military are cause for increasing concern by the United States. Despite the success of China’s AI in commercial areas, no clear evidence has indicated that China’s military has plans to apply AI in any lethal systems. In the short term, weaknesses still exist despite

China's preexisting foundation on AI commercial applications. Allen points out that China has disadvantages in top talents and technical standards, as well as in software frameworks and platforms.<sup>23</sup> For example, the case of restrictions on ZTE and Huawei clearly reveals that China heavily depends on imports of critical products, which means that China still has a long way to go until it becomes fully independent in vital sectors, such as semiconductors.

AI technology itself is not offensive, but it is likely to play an irreplaceable directorial role in warfare if it is applied to automating weapons, especially nuclear weapons. To avoid unwanted jeopardy to any nations, the top priority is to ensure human intervention is involved in AI that are applied in security-related areas. AI actually lowers the threshold of offensive military actions because of the limited casualty risk. States, including China and the United States, should cooperate on preventing the abuse of AI. According to the China Global Television Network, China is the first nation that has submitted the position paper to the United Nations Convention on Certain Conventional Weapons for regulating the application of AI technologies in military field in December 2021.<sup>24</sup> In other words, as with the control of nuclear weapons, norms and regulations are needed to limit the use of AI armaments.

The United States is concerned about the global proliferation of unmanned systems and other AI weapons since China lacks export restrictions. China's purposes of exporting unmanned arms, such as UAVs, include but are not limited to protecting overseas Chinese and investment security, establishing and consolidating diplomatic relations, and creating commercial profits.<sup>25</sup> The United States is concerned about the unrestricted export for not only security reasons, but also economic ones. To prevent China from occupying the international market of unmanned systems, previous president Donald Trump reinterpreted the Missile Technology Control Regime to boost the export of UAVs. The Biden administration is willing to continue Trump's policy, which made the export more flexible.<sup>26</sup> Therefore, if both superpowers obtain unmanned technologies and export the arms mainly for commercial purpose, it is unnecessary for the United States to raise high concern.

## **Future**

As for the future development of China's AI technology applications in the military area: First, high-altitude long-endurance will be a primary focus of UAV development. Previous UAVs have a small carrying capacity, inadequate power supply, and little endurance, which may result in a small area of reconnaissance, failure to continuously obtain information for a long time, and even "blind spots" in intelligence, thus it is difficult for them to adapt to the needs of future warfare.

Therefore, China's military UAVs must have extensive functions including search and monitoring, air war early warning, and so forth. To this end, new power units such as turbofan engines, rotor engines, solar engines, pulse burst engines, and so forth will be likely to be applied to the future military UAVs.

Second, intelligent control will be developed. At present, China's military UAVs are mainly controlled by programs and the flight routes are relatively fixed, thus it is difficult to cope with various unexpected events on the spot. When the ground control station operates the UAVs, their response usually lags slightly, making it difficult for them to effectively avoid obstacles and dangers. As a result, the intelligence level of military UAVs must be further improved to enhance the UAVs' ability to respond to the situation and their autonomous combat capability.

Third, stealth will be another important direction of UAV development. A large number of composite materials, radar-absorbing materials, and low-noise engines, and so forth will be applied to future military UAVs to further enhance their stealth performance, thus future UAV combat operations can be stealthier, and surprise attacks more viable. Meanwhile, the fuselage surface gap and the radar reflective surface can be reduced.

Fourth, UAVs will be designed to fulfill diversified military tasks. The scope of tasks undertaken by future UAVs will be further expanded, and the task levels will be extended from tactical to battle and strategic levels. The nature of the tasks will also be extended from information support to offensive operations, further achieving the organic combination of reconnaissance and combat. In line with this development trend, diversified aircraft with specific combat functions will appear in China, including unmanned early warning aircraft, unmanned fighter aircraft, unmanned bombers, air combat UAVs, micro-UAVs, and so forth. Hence military UAVs will be widely applied on the future battlefield with a huge battlefield impact and combat power.

Last, UAVs will be operated in concert with manned aircraft. With the continuous development of the world's air-defense weapons, manned aircraft are under increasing threat. If UAVs carry sensors and radar front deployment, serving as the "pathfinder" for manned aircraft, pilot casualties caused by attacks from anticraft weapons can be greatly reduced. Therefore, the integrated application of the two in future will play a mutually reinforcing and complementary role: UAV AI technology will greatly reduce pilots' operational burden while the automatic control, data chain, and navigation technology on manned aircraft mean that the UAVs will no longer be simple remote-control models. UAVs and manned aircraft will each play to their respective advantages, complement each other, and develop together. ✪

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# Positioning the Bay of Bengal in the Great Game of the Indo-Pacific Fulcrum

ANU ANWAR

## Abstract

As it has across the entire Indo-Pacific, geopolitical competition has intensified in the Bay of Bengal. There is, indeed, a competition between and among major powers; India competes with China, US-led allies challenge China's assertiveness, and the Bay of Bengal—situated at the intersection between South and Southeast Asia—is a divider, a connector, and a battleground. To set out the trajectory, this article starts by identifying the strategic geography of the Bay of Bengal in the Indo-Pacific fulcrum, one prism through which to view the evolving international relations of the region. In doing so, the article discusses the factors that drive the evolving significance of the Bay for its littoral states and great powers. Then the focus shifts toward another prism—the non-traditional security issues including economy, ecology, and connectivity, which are of deep interest to all the littoral states. These factors can drive cooperation. This review of the hard and soft elements of the strategic environment of the Bay of Bengal suggests strong cohesion of the regional states is the key to mutual prosperity. But can this be achieved when the forces of division have become so much greater?

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Roughly three-quarters of the Indo-Pacific region's entire surface is water.<sup>1</sup> Yet apart from the South China Sea, the great majority of geopolitical studies concern not those maritime spaces—including vast oceans such as the Pacific and the Indian—or mention critical bays such as the Bay of Bengal (hereafter, BoB), but rather land areas that cover a much smaller share of the whole. For most of the past century, if not longer, the worlds of politics and diplomacy have been conceptualized in terms of land borders and self-contained regions. Yet history has demonstrated repeatedly that the location, political-economic role, and security structure of water bodies, as well as the relationships of rimland nations along their shores, and of islands within them, can be highly consequential for international affairs.<sup>2</sup>

Yet remarkably little work on such questions, save a small number of exploratory studies, has ever been done.<sup>3</sup> The BoB lies astride the sea lanes that connect China, Japan, and Korea with suppliers in the Persian Gulf, as well as Africa, through which the bulk of their oil imports and many other raw materials must pass. One of the major actors of Indo-Pacific—India—is also highly reliant on the BoB in a wide variety of areas ranging from energy to traditional security. The future of the BoB, thus, has important security implications for all of them, as well as for global powers such as the United States.

The securing of these energy and trade routes drives geopolitical calculations in the BoB, and this links the BoB to the Free and Open Indo-Pacific (hereinafter, FOIP) strategy espoused by the United States and its allies. In recent years, China's increasing presence in this region under the Belt and Road Initiative (BRI) is an attempt to avoid the 'Malacca Dilemma'<sup>4</sup> and to create alternative overland routes to strategic ports securing China's supplies through the Indian Ocean. From a Chinese strategic point of view, the BoB and its adjacent states form a critical region to which China must have a significant degree of access. But this creates concerns for the United States and its allies and partners, especially for India, in securing the BoB from being dominated by a single actor, thus warranting action for ensuring plurality. As China's BRI and US FOIP Strategy continue to evolve, geostrategic presence of great powers and their geopolitical maneuvering are likely to intensify in the BoB region.

The BoB is not only a theater for a great power game; the livelihood and economic vitality of the countries surrounding it are highly dependent on this body of water. Domestic dynamics in each of these states, interstate conflict, nontraditional security threats, climate change, and ecology are also critical factors shaping the Bay with significant consequences for the broader Indo-Pacific. The article first depicts the origin of Indo-Pacific concept and the geostrategic significance of the BoB in relation to the concept. In the subsequent section, it identifies the key drivers that are likely to foster the BoB's significance and its relevance for Indo-Pacific.

The strategic importance of the BoB will considerably increase in the coming years. The nations involved are major and rising powers, the power plays in the theater will inevitably reshape the dynamics of the Indo-Pacific beyond the Bay. However, the article argues that cooperation and competition is in all the nations' best interests, as any conflict in the Bay region could augment political, economic, and energy insecurity affecting all the concerned countries.

### **A Vision for Free and Open Indo-Pacific:**

The origin of the term 'Indo-Pacific' is traced to German geopolitical scholar Karl Haushofer who used it in the 1920s in his work, *Deutsche Kulturpolitik im Indopazifischen Raum*.<sup>5</sup> Indian historian Kalidas Nag referenced the term in the

1940s.<sup>6</sup> In recent years, the term gained momentum after former Japanese prime minister Shinzo Abe's speech in the Indian parliament in August 2007. Abe, then, remarked, "We are now at a point at which the Confluence of the Two Seas is coming into being. The Pacific and the Indian Oceans are now bringing about a dynamic coupling as seas of freedom and prosperity."<sup>7</sup>

It was a clear indication that not only the Pacific Ocean but also the Indian Ocean are important bodies of water and the "confluence" of the two oceans has become more critical than ever. The speech became relevant at the time, when preceding frameworks such as the "Asia-Pacific" were proving to be limited in their scope, failing to meet emerging geopolitical realities. The Indo-Pacific is, in effect, a proposed new conceptual map that would transcend the traditional mental divisions between the Asia-Pacific and the Indian Ocean region.<sup>8</sup>



**Figure 1. Asia-Pacific and Indo-Pacific.** (Source: Bharath Gopalaswamy and Aditya Ramachandran, "The Shifting Balance of Power in the Indo-Pacific," *China-US Focus*, 19 Dec 2017, <https://www.chinausfocus.com/>.)

With the rise of China and Asian tigers,<sup>9</sup> the global strategic and economic center of gravity began shifting toward the Asia-Pacific region in the late twentieth century. The Obama administration's "Rebalance Asia"/"Pivot to Asia" policy was a remarkable recognition of this geopolitical shift and became a blueprint of America's Indo-Pacific vision. Then-Secretary of State Hilary Clinton later authored a seminal article in *Foreign Policy* to articulate America's stake in the Indo-Pacific.<sup>10</sup> Japan was among the first countries to use the phrase "Free and Open Indo-Pacific" in its official discourse. In the following year of 2013, when the Australian government became the first to officially redefine its region according to this two-ocean framework, the term was still a novelty.

In late 2017, the United States adopted the concept and translated it into the three pillars of security, economics, and governance. The 2017 *National Security Strategy*,<sup>11</sup> 2018 *National Defense Strategy*,<sup>12</sup> and 2019 *Indo-Pacific Strategy Re-*

*port*<sup>13</sup> marked an inflection point in the evolution of the concept. In the US definition, the Indo-Pacific region comprises 36 nations—from the west coast of the United States to the west coast of India—that are home to more than 50 percent of the world's population, three largest economies, five of the ten most populous countries, and four of the top five largest Muslim-majority nations.

The region is a vital driver of the global economy and includes the world's busiest international sea lanes and nine of the ten largest container ports. The Indo-Pacific is also a heavily militarized region, with seven of the world's ten largest standing militaries and five of the world's declared nuclear nations.<sup>14</sup> It is relatively rich in natural resources, especially hydrocarbons, which fuel the industrial engines of the world's economies and encourage competition not only among the established powers but also push the emerging powers to scramble for scarce resources as well. Given these conditions, the strategic complexity facing the region is unique.

However, the concept of the Indo-Pacific is not a new idea, nor is it narrowly American; rather, it has triggered a renewal of the region's enduring maritime and multipolar character. The vision to establish a "rule-based order" denotes an international environment in which every country—regardless of its size or power—will be able to exercise sovereignty and will be free from coercion and that international behavior conforms to established law and norms. At the national level, this means good governance and the assurance that citizens can enjoy their fundamental rights and liberties.<sup>15</sup> The FOIP concept also does not exclude or contain China, though it does dilute China's influence. Moreover, the region's scale, ambiguity or "duality," and apparent diversity of national approaches to FOIP are more advantages rather than liabilities.<sup>16</sup> Like any geopolitical construct, the Indo-Pacific region has its ambiguities and limitations. The Indo-Pacific labeling, however, does resonate with the aspiration of a multipolar region in which middle and smaller powers can survive and exercise their full sovereign rights, free of coercion or intimidation.

### **The Bay of Bengal in the Indo-Pacific Fulcrum:**

After decades of being regarded as an international backwater, the BoB is fast becoming a key area of economic and strategic competition in the Indo-Pacific. It is the largest bay in the world, bookended by India on its western side and Thailand to its east, with Bangladesh, Myanmar, and Sri Lanka as its prominent littoral states. Together they host fully one-quarter of the world's population with sustained gross domestic product growth currently of \$3 trillion.<sup>17</sup> The BoB depends on the ability of states to enhance subregional cooperation.<sup>18</sup> A quarter of the world's traded goods cross the Bay, including huge volumes of Persian Gulf oil and liquefied natural gas, providing energy-scarce countries with a corridor to securing resources.<sup>19</sup> Some of the world's most important trading routes also run through the BoB. The BoB itself

contains vast, mostly untapped natural resources of oil, gas, mineral ores, and fishing stocks, encouraging investments and economic as well as strategic interest from China, Japan, and the United States. As a result, it has the potential to positively contribute to the economies of littoral states.<sup>20</sup>

Unlike the contested South China Sea, this subregion is free from maritime boundary disputes making it an integral building block for the FOIP vision. It lies at the border line of two major geopolitical blocs: the Association of Southeast Asian Nations and the South Asian Association for Regional Cooperation (SAARC). These regional efforts to provide a framework for international economic cooperation for the BoB that predates the BRI by at least a decade. In addition, key nations of South and Southeast Asia joined in establishing BIMSTEC (Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) in 1997, inspired by India's "Look East" and Thailand's "Look West" policies.<sup>21</sup>

However, the BoB was long ignored by great powers, characterized by an image of poverty, natural disasters, and political instability. Even now, few perceive the BoB as constituting a region for significant geopolitical calculations. In contrast to previous centuries, since the end of World War II, geographers, academics, and diplomats preferred to divide the Bay into two distinct halves, drawing a sharp line between what came to be called "Southeast Asia" and "South Asia."<sup>22</sup> As the concept of the Indo-Pacific continues to surge and become operationalized, the area is likely to gain much greater prominence in coming years and may even be poised to become a new epicenter of economic development in Asia.

Countries around the BoB, including Bangladesh, Sri Lanka, and Myanmar (at least before the 2021 coup), are experiencing high growth rates. Much of that economic growth is currently being driven by internal reforms and remains fragile. But the region's long-term economic prospects will likely be driven by the ability of countries such as Bangladesh, Myanmar, and Sri Lanka to take advantage of the opportunities presented by their huge neighbors, China and India, and most critically by the growing interest of extraregional powers such as the United States.

The Bay is also assuming a new strategic importance. It is located close to the geographic center of the Indo-Pacific region (at the intersection of the expanding zones of strategic interest of China and India). The BoB (like its Pacific "twin," the South China Sea) is also a key transit zone between the Indian and Pacific Oceans and the main route for trade in energy to East Asia. The region's strategic centrality, just as much as its promising economic prospects, drives the unprecedented jostle for influence by the major powers, including China, India, Japan, the United States, and even Russia.<sup>23</sup>

Despite its seemingly bright economic prospects, the region still suffers from an array of politico-security issues, many of which are transnational in nature. These

include political instability, separatist insurgencies, communal and religious conflicts with cross-border implications, and maritime security challenges such as piracy, gun-running and human trafficking. The region also suffers from considerable environmental security problems—a possible inundation of large parts of the littoral states due to rising sea levels that could lead to the displacement of millions.

That all means that the BoB will likely assume increasing geostrategic importance in the Indo-Pacific vision in the coming decades. In some ways, it is also the epicenter of the Indo-Pacific concept—the place where the strategic interests of the major powers of East and South Asia intersect.<sup>24</sup> The importance of the BoB as a new frontier for development and confrontation and its relevance to key regional and extraregional players will continue to grow as geopolitical competition intensifies. The BoB not only physically connects the Pacific and Indian Oceans but has the potential to act as an economic hub for the East Asian and Indian Ocean economic systems' interaction. As political scientist Akihiko Tanaka, the former head of Japan's International Cooperation Agency, commented:

. . . the Bay of Bengal is centrally located within this tectonic change as it can function as a key junction between the two oceans. Unfortunately, we are often bound by outdated geographic divisions. We still draw a dividing line at the Arakan Mountains to separate South Asia from Southeast Asia . . . perhaps it is high time for the Bay of Bengal to be considered as a coherent strategic region within the broader framework of the Indo-Pacific.<sup>25</sup>

## **Drivers of the Bay of Bengal's Growing Importance**

### ***Economy at the Heart and Center***

The heyday of the British Empire—from roughly 1850 to 1940—was a broad period of integration, both within the Bay and with other regions. All the littoral countries, save for marginal Thailand, were part of the British Empire from the late nineteenth century up until the outbreak of World War II. The ensuing decades of war, independence, and reconstruction (1940–1980) were an era of autarky and isolation, with the countries pursuing import substitution strategies of economic development. Since the early 1980s, driven in large part by the success of the outward-oriented East Asia development model, the BoB has grown more intertwined with Asia as a whole.<sup>26</sup> The primary drivers for integration such as growth, energy, and trade have accelerated markedly over the past decade and likely to intensify rapidly in coming years.

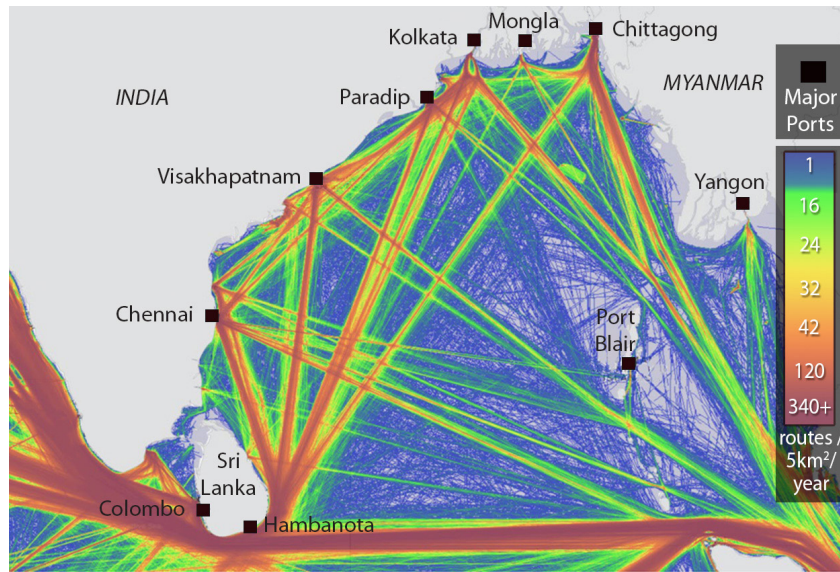
With the exception of Thailand, the BoB countries largely missed the economic miracle that took place in Asia in the latter part of the twentieth century. This,

however, is now changing: prior to the COVID-19 pandemic, South Asia had experienced the world's fastest growth of 7.3 percent on average per annum throughout the last decade.<sup>27</sup> Many of these states, such as Bangladesh, Myanmar, and Sri Lanka, are located around the Bay, while India is the largest economy among the BoB states. Low-cost, labor-intensive, export manufacturing industries such as garments, coupled with rapid urbanization, has been the driver of this fast growth.

Just as industrial economies such as China, Korea, and Japan moved toward high-tech, capital-intensive growth models, the BoB countries have the potential to benefit from offshoring labor-intensive industries from developed countries. With relatively young workforces, for example—in Bangladesh, 20 percent of its population falls between age 15 and 24,<sup>28</sup> labor-intensive industries will likely continue to flourish in the coming decades. An important factor in the growing strategic importance of the area is the relatively bright economic prospects of many BoB states. Bangladesh, once regarded as a “basket case,”<sup>29</sup> is an outstanding example of economic transformation in this region.

The BoB is also believed to have significant gas reserves. Some unofficial estimates have put Bangladesh's reserves alone at 200 trillion cubic feet, which would make it the largest source of supply in the Asia-Pacific.<sup>30</sup> Another BoB state, Myanmar is also a significant natural-gas producer and consumer.<sup>31</sup> Myanmar has the fourth-largest proven natural-gas reserves in the Asia-Pacific, and currently the highest reserves-to-production ratio in the region, at 63 years.<sup>32</sup> It exports petroleum gas to both Thailand and China, customers accounting for 75 percent of its production.<sup>33</sup>

The two Asian giants, China and India, have become major consumers, among the top five oil importers in the world in 2018. China's and India's dependency on oil imports are expected to rise to 75% and 95% respectively of their total oil consumption by 2030. Japan and Korea are also highly dependent on energy imports, particularly oil and gas—importing primarily across sea lanes passing through the BoB. In addition to energy, the BoB region is also critical for commercial shipping routes. About half the world's container traffic passes through this region, and its ports handle approximately 33 percent of world trade, thus becoming the “economic highway of the world.”<sup>34</sup>



**Figure 2. Major ports and shipping destiny in the Bay of Bengal Region.** (Source: Shipping density imagery, Maritime Traffic, <http://www.maritimetraffic.com/>.)

Its global significance is further reinforced as one of the world's largest fishing grounds, providing approximately 15 percent of the world's total fish catch (approximately nine million tons per annum). Exploring these ocean-related potentials could further enhance littoral states' "Blue Economy" aspirations as a major economic driver for the region.<sup>35</sup> However, the full economic potential of the region is currently constrained by the low level of regional economic integration and a dearth of infrastructure, especially transport connections within those countries, to neighboring states and the rest of the world. For example, intraregional trade in Southeast Asia is 25 percent, while it is only five percent in South Asia.<sup>36</sup> Also, obviously, its fishing supplies must be strictly managed to prevent degradation, which currently is not the case.

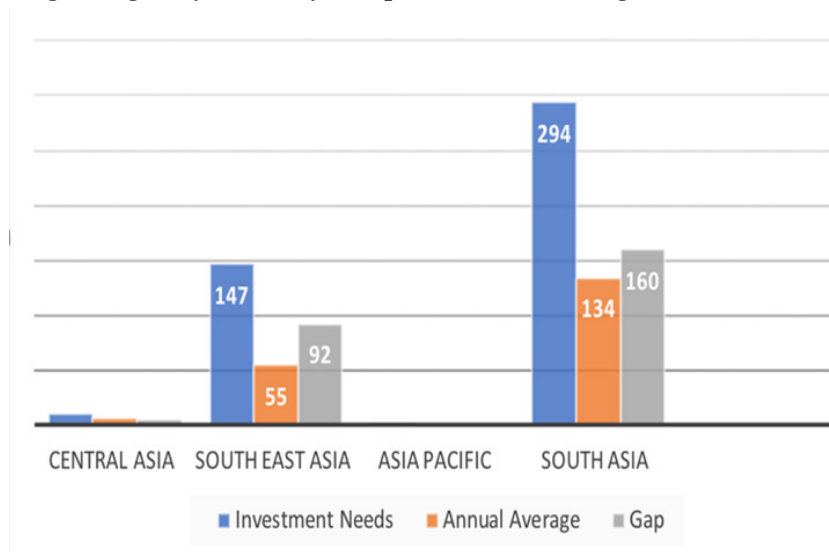
### *Infrastructure and Connectivity*

The ever-growing economic activities around the BoB have prompted efforts to build new ports, roads, pipelines, and railways throughout the region, largely sponsored by China and Japan. Some of these are intended to connect the landlocked part of the region with coasts and others to better connect one subregion to another. These projects have been accompanied by considerable competition for political and strategic influence over the BoB states as these powers seek to structure infrastructure connections and production chains to benefit their own economies. In broad terms, this competition might be seen as reflecting the intersection of growing areas of strategic influence of major powers in Asia: China, Japan, and



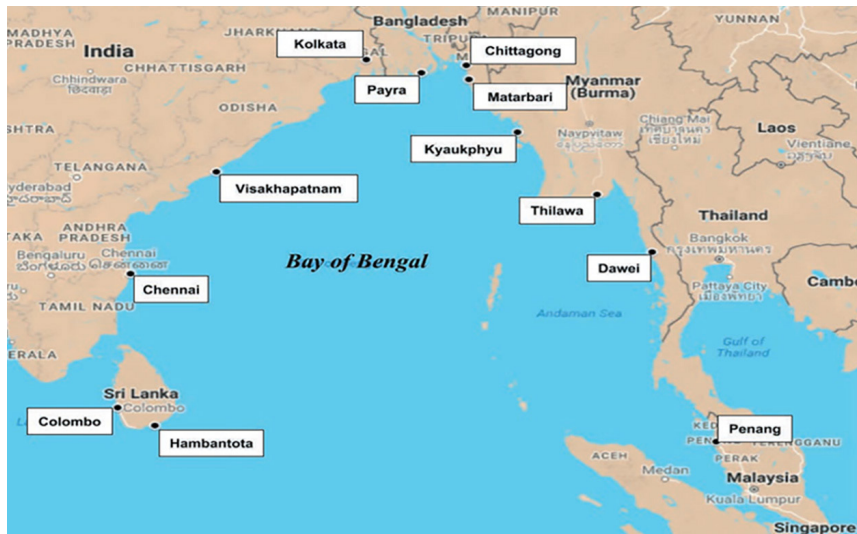
India, and extraregional powers such as the United States. This competition concerns but also benefits the infrastructure-hungry countries around the Bay.<sup>37</sup>

South Asia clearly illustrates the pressing infrastructural needs that economic growth is generating within the Bay, and the potential dangers that procuring needed capital investment can entail. According to the Asian Development Bank report, in South Asia, the gap between existing infrastructure investments and the need is \$160 billion per year.<sup>38</sup> These needs include physical infrastructure such as ports, bridges, highways, railways, airports, as well as digital infrastructure.



**Figure 3. Regional Infrastructure Deficit Forecast from 2016 to 2030<sup>39</sup>**

For example, even though Bangladesh has become the second-largest clothing and apparel exporter in the world in recent years, with potential to be the largest producer,<sup>40</sup> it has yet failed to complete a single deep-water port in its 50 years of independence. As much as the lack of foresighted nation-building policy is to blame, regional geopolitics have also been in play. The construction of Sonadia deep seaport has long been in national agenda but the absence of consensus among development partners regarding funding sources scrapped the project altogether.<sup>41</sup> Recognizing geopolitical realities, Bangladesh is currently building a deep seaport in Matarbari funded by Japan.<sup>42</sup> The government has made it a fast-track project aiming at completion by 2025. This has tremendous potential to change the sub-regional economic trajectory. Bangladesh, much like other BoB states such as India and Thailand, is also developing several special economic zones (SEZs) to complement port developments.



**Figure 4. Major port and special economic zones on the Bay of Bengal<sup>43</sup>**

Myanmar, stagnant and isolated throughout over half a century of military rule, has begun to develop new industrial parks, incentivized as SEZs, that have the potential to support transnational supply chains. Explosive growth in China's Yunnan Province to the northeast is generating demand in Myanmar for transit infrastructure in the pipeline, road, and rail sectors, with the Kyaukphyu-Kunming gas and oil pipelines already completed. Meeting those transit needs would substantially deepen Myanmar's interdependence with China's southwest, especially Yunnan. The China-Myanmar Economic Corridor—one of the six BRI economic corridors—is a testimony to this and reflects a potential for BoB connectivity on an even greater scale. However, Myanmar's economic attractiveness is currently clouded by last year's military coup and continuing public resistance.

Exports westward across the BoB to the booming Indian economy are clearly a magnet. Traditional colonial-era ports at Penang and Chennai are being refurbished. There continue to be plans to build a canal across the Kra Isthmus in Thailand, which would link the BoB to the Gulf of Thailand, and to Southeast Asian ports further east. The most dynamic areas of infrastructural development in the BoB over the past five years have had a strong geopolitical flavor inspired by China's BRI, unveiled in the fall of 2013.<sup>44</sup> The BRI's specific applications in the BoB, especially two important projects in Sri Lanka and Myanmar, and aspiration for a Bangladesh-China-India-Myanmar Economic Corridor is critical. All nations bordering the Bay except India have joined the BRI, and it holds great potential to significantly transform the political economy of the region—not least by deepening economic interdependence with China.

### ***Domestic Politics as Underlying Factors***

The domestic political constraints on BoB states such as political stability, ethno-religious tensions, urbanization, and the COVID-19 pandemic will have a knock-on effect on this subregion. The changing circumstances within Myanmar, Sri Lanka, Bangladesh, Thailand, Malaysia, and northwestern Indonesia along these dimensions threaten regional comity in the Bay. The responses of China and India, together with the efforts of extraregional powers such as Japan and the United States, will change the trajectory of the BoB.

The Rohingya issue is a major political problem for Bangladesh and Myanmar with spillover effects on Thailand, Malaysia, and Indonesia, and thus has significant geopolitical consequences.<sup>45</sup> It is also a humanitarian priority for the international community, due both to the human suffering involved, the tensions it provokes between Myanmar and Bangladesh, and the long-term security implications for the region. This crisis primarily erupted from Burma's domestic ethno-religious tensions. Despite Bangladesh's limited capacity, it hosts millions of refugees but as the solution beyond its control, there should be strong support from UN security council members, especially from regional countries that may have some leverage over the Burmese military junta.

China and India are on the top of that list, but considering their own national interests in Myanmar, the role they play in resolving this issue has rather been limited. Bangladesh also had high expectations of Japan, its long-time development partner, but it, too, is prioritizing its own national interest. The United States, Europe, and international organizations, however, play a critical role in this crisis, from providing assistance to pressuring Myanmar, which resonates with the spirit of the Indo-Pacific vision for establishing a rule-based order for all.

Leadership succession in domestic politics in both Myanmar and Bangladesh further complicates the prospect of a sound resolution of this crisis. Sri Lanka is another BoB country with considerable political risk, also closely related to its ethnic-religious division. The island nation of 20 million people is three-quarters Sinhalese, with 90 percent of the Sinhalese also being Buddhists. Sri Lanka also has roughly three million predominantly Hindu Tamils, and nearly two million Muslims.<sup>46</sup> Although a distinct minority within Sri Lanka itself, the Tamils are part of a broader community of more than 60 million, most just across the Palk Strait in southeastern India. Thus, Sri Lanka's internal politics also play into that of multi-ethnic, multi-religious India.

As Robert Kaplan points out, "Like the Serbs in the former Yugoslavia and the Shiites in Iran, the Sinhalese are [thus] a demographic majority with a dangerous minority complex of persecution."<sup>47</sup> They feel surrounded by Hindus, and defen-

sive about the influence of neighboring India. As a vulnerable majority in an island nation, with a distinctive language and culture, the Sinhalese feel distinctly isolated, and thus are in quest for distant allies. The regional phenomenon of “quest for distant allies”—although a foreign policy choice—is primarily driven by domestic forces of each of the Bay States and propels the vision of the Indo-Pacific into further complication, as well as complicating prospects to establish an order based on basic human rights.

While the Rohingya and Sri Lanka Tamil situations may be the internationally prominent cases of ethnic issues in the BoB region, it should be remembered that the land borders are often inhabited by minority groups that are often looking for support for their aspirations of autonomy or even independence. This includes India’s northeastern borders in Myanmar, China, and Bangladesh as well as the Thai–Myanmar border where various ethnic groups including Shans, Kachins, and Karenni have long been regarded as troublesome by the Burman ethnic majority and where substantial ties exist between the minorities and various groups within Thailand. Complex relationships exist in the “golden triangle” area where China, Myanmar, Laos, and Thailand have borders, and Islamic Malays also are a majority population of four southern Thai provinces and have been regarded by the Buddhist Thai majority as “restive.” This last has been a source of some mostly contained Thai–Malaysian tensions.

### ***Geopolitics—The Great Game***

The geopolitical calculations of regional and extraregional powers will remain one of the key drivers of the BoB’s significance for the foreseeable future. The competition will take place in two tiers—both conflicting and converging in nature. The first tier among regional powers—primarily between China and India and among mid-size powers of the Bay states such as Bangladesh and Myanmar, which largely remain competitive and conflictual in nature. The second tier of this competition will be between and among extraregional powers such as Australia, European countries, Japan, and the United States. In this tier competition is more complementary with each other, but more in conflict with China. They are building new types of security architecture such as Quadrilateral Security Dialogue, AUKUS, and some strengthening of bilateral ties throughout the Indo-Pacific region. Under such frameworks, the division between the United States and its friends and China will sharpen further, potentially taking on a “cold war” tone.<sup>48</sup>

While the United States may seem the leader, in fact, the traditional rivalry between India and China may become far more prominent. India is the traditionally dominant regional power, and its role was enhanced by its prominence in supporting—and militarily assuring the success of—Bangladesh’s independence in 1971.

The influence of China, however, is rising rapidly, driven primarily by the massive financial support it offers and its proactive initiatives under the BRI framework. Historical mistrust between China and India has encouraged mutual suspicion regarding each other's intentions. India and China both view the BoB as a crucial frontier in their competition over energy resources, shipping lanes, and cultural influence. The competition stemming from the two countries expanding their regional spheres of influence in each other's backyards may result in skirmishes over energy and sea lanes of communications, not to mention confrontation over political influence in the more fragile states such as Myanmar and non-BoB littoral state Nepal.

So far, the strongest manifestation of Sino-Indian rivalry in the BoB has been sighted in Myanmar where both countries connect through Myanmar to their economically weaker regions, namely India's northeast and China's Yunnan province. However, between 2011 and 2021, Myanmar opened its economy to the Western world after the United States and Europe lifted sanctions, creating more partnership options as the reforms attracted a wave of foreign investors. This in turn reduced Sino-Indian competition by making space available to new actors, creating more balance in the previously polarized scenario—which has now taken a backslide after last year's military coup in Myanmar.

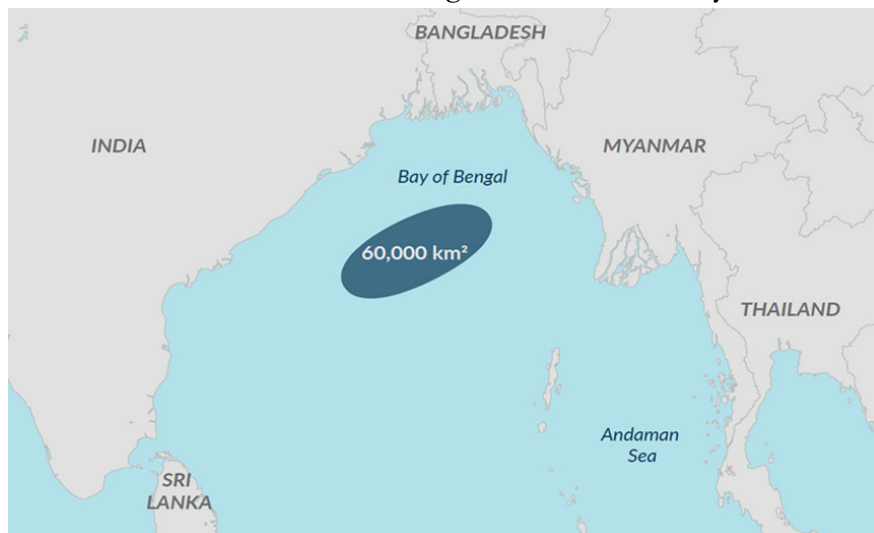
Competition in the security realm is greater than ever. In recent years, the only multilateral military exercise of this region, the naval Malabar exercise held among India, Japan, the United States, and recently Australia also taken place in the BoB several times in recent years.<sup>49</sup> China, both Bangladesh and Myanmar's largest military hardware supplier, provided two Ming class submarines to Bangladesh's Navy,<sup>50</sup> which boasts for Forces Goal-2030 to modernize its armed forces as a three-dimensional warfighting force. In response, India provided a submarine to Myanmar.<sup>51</sup> While China has built ports in Sri Lanka and Myanmar, Bangladesh is building its deep seaport with Japanese assistance. As a result, geopolitical competition among regional powers and the balancing game among Bay states continue to intensify.

### ***Nontraditional Security—No Less Significant***

While traditional security concerns are mostly along or around national boundaries, nontraditional security issues pertaining to the BoB such as human security and natural disaster relief issues including climate change, natural disaster, terrorism, refugees, drugs, piracy, and illegal, unreported, and unregulated fishing transect boundaries and affect the region as a whole. The BoB is a lucrative passageway for notorious drug smuggling routes such as the "Golden Crescent" and "Golden Triangle." Human trafficking—a typical nontraditional security threat—also has started to emerge in the BoB in the last decades.<sup>52</sup>

The negative impacts of climate change, especially rising sea levels and an alarming level of salinity pose existential threats to several Bay states including Bangladesh and Sri Lanka.<sup>53</sup> Two-thirds of Bangladesh is less than five meters above the sea level rise. The latest projection says that if there is a 50-centimeter rise by 2050, 11 percent of Bangladesh might be underwater, making millions homeless. Even barring this extreme, the costs of seawalls, dikes, and other forms of adaptation will be enormously expensive for a new middle-income country. Adjacent parts of India's heavily populated Bengal state around Kolkata are equally threatened. Thus, the issue of potential climate refugees is more salient in the BoB region than anywhere else in the world. This demands cooperation, as well as assistance from Indo-Pacific promoters such as the United States.

In 2016, a multinational team of scientists reported an alarming finding that a "dead zone" of significant size has appeared in the bay. Apart from sulfur-oxidizing bacteria and marine worms, few creatures can live in these oxygen-depleted waters.<sup>54</sup> This zone already spans some 60,000 square kilometers and appears to be growing.<sup>55</sup> The dead zone of the BoB is now at a point where a further reduction in its oxygen content could have the effect of stripping the water of nitrogen, a key nutrient. The scientists who identified the Bay's dead zone warn that this stretch of ocean is approaching a tipping point that will have serious consequences for the planet's oceans and the global nitrogen cycle. This poses serious risks to the region's fishery and human security—millions of people could lose their livelihoods, which will create vast streams of new migration across the Bay.



**Figure 5. Approximate location of the dead zone.** (Source: Jay Benson, "Stable Seas: Bay of Bengal," *Stable Seas* (website), January 2020, <http://dx.doi.org/10.18289/OEF.2020.044>.)

The BoB is also a region prone to natural disasters such as heavy monsoon rain, cyclones, floods, and many others that take thousands of lives every year. Ocean pollution and depleting marine resources, as well as overfishing, are also threatening the natural ecology of the Bay. While strategic interests often dictate conflicting positions, a consensus over the principle of *mare liberum* (free seas for everyone) as one of the four global commons is required for the protection of marine resources.<sup>56</sup> Since the Indo-Pacific vision aspires to establish international rules and norms, these nontraditional security concerns in the BoB could give impetus to further regional organizations such as SAARC and BIMSTEC to bring countries to work together on this common challenge. The key issue, however, will remain on the question of how states could set aside their myopic national interest and cooperate toward achieving global common goals.

## Conclusion

For decades, the significance of the BoB remained underappreciated due to the absence of great powers' interest and lack of economic vitality, but this has changed as strategic competition in the area intensifies according to its own dynamic. The BoB now has considerable—and growing—strategic importance for Asia, and for the world as a whole. In many ways, the BoB lies at the core of the Indo-Pacific region; a centerpiece of the broader Indo-Pacific concept—the place where the strategic interests of the major powers of East and South Asia intersect. As the Bay will become a test case for a nascent multipolar world order, it is of the utmost importance to establish governance frameworks that can facilitate the integration of rising powers in regulating this order and upholding the principles of a Free and Open Indo-Pacific. 🌟

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# The Growing Importance of Vietnam to India's South China Sea Policy

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## Abstract

India has proactively engaged in the South China Sea (SCS), notably via boosting its naval presence and forging ties with Vietnam despite China's aggression. This article analyzes relevant incentives for India's engagement in the SCS, then examines the maturation of India-Vietnam bilateral cooperation in three aspects: diplomacy, economics, and defense. The joint efforts prove to be strategic as they help strengthen India-Vietnam ties given their shared concerns about China's growing maritime coercion.

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India, while seeking to embed its geopolitical interests in the South China Sea (SCS), has found Vietnam at the forefront of its strategic calculation. First, the long-standing and problem-free relationship, with India's support for Vietnam's anticolonial struggle during its persistent fighting for independence and unification, has been essential for their trusted relationship. Second, Vietnam's position on regional security and its approach toward solving the SCS issue has proved beneficial to New Delhi's vision for a peaceful Southeast Asia.

While regional middle powers, such as South Korea, Australia, and New Zealand, have been reluctant to speak out about the SCS and avoid seeking close maritime cooperation with Vietnam for fear of invoking Chinese retaliation, New Delhi has strengthened security ties with Hanoi despite warnings from Beijing. Under the framework of the Act-East Policy, India has grown increasingly determined to foster closer linkages with Vietnam as New Delhi sees Hanoi as a strategic anchor for its Southeast Asia policy. For Vietnam, forging ties with traditional and benign powers has become the cornerstone of its efforts to pursue multilateral engagement. As such, Vietnam has encouraged India's closer integration with Southeast Asia, where Vietnam has served the bridge-builder for India and the Association of Southeast Asian Nations (ASEAN). In the words of Pham Sanh Chau, Vietnam's ambassador to India, both countries share the view that ASEAN "[occupies] the central role in any evolving security structure in the region" and Vietnam would help India "extend its reach beyond the Indian Ocean."<sup>1</sup>

The main argument of this article is: India's diplomatic, economic, and military actions all show that it sees Vietnam as the gateway to project its influence in the SCS. Thus, fostering India-Vietnam cooperation in regard to maritime security could then enhance the burgeoning middle-power relationship between the two like-minded countries, attributing a determined approach to China's aggressive posturing in the SCS.

### **Incentives for India's Engagement in the South China Sea**

Primary factors boosting India's presence in the SCS are the rise of China in the disputed sea, India's utilitarian interests in those waters, and the burgeoning strategic weight of the Indo-Pacific region. China's rising power has led to India's wary posture, prompting involvement by India to safeguard its interests and deter Beijing's hegemonic ambition in littoral Southeast Asia. India's interests in the SCS, such as commercial linkages, freedom of navigation, and a rules-based regional order have consolidated Indian leaders' will to engage in the region. Simultaneously, India recognizes the vital importance of enhancing its status as an authentic middle power in the Indo-Pacific region.

### ***The Rise of China in the Contested Sea***

China's creeping expansion in the SCS since the aftermath of World War II could be summarized as follows: (1) 1946–1947, setting foot on the Paracel and Spratly Islands; (2) 1956–1974, gradually occupying the Paracel Islands; (3) 1988–1995, occupying features (e.g., islands and rocks) in the Spratly Islands; (4) 1996–2008, pursuing the strategy of “detaining land disputes, exasperating maritime tensions”; and (5) since 2009, conducting multifaceted expansion with high intensity of military presence.<sup>2</sup> The logic of China's rise in the SCS is that whenever a power vacuum became visible, China would take advantage of that brief moment to fill the vacuum and exert its domination.

China's unilateral submission of the Nine-Dash Line map to the United Nations in 2009 kicked off “a new phase in the legal battle over territorial and maritime claims in the SCS.”<sup>3</sup> From the year 2009 onward, China has stepped up coercive actions to bully claimant states, aggravating the risk of conflict in the disputed waters. Tensions in the SCS have further intensified during the onset of the COVID-19 pandemic,<sup>4</sup> with China violating the exclusive economic zones (EEZs) and maritime waters of neighboring states.<sup>5</sup> In short, China's irredentist claims of disputed islands and its aggressive tactics have accounted for rising tensions in the SCS.

To some extent, India views China's SCS assertiveness as a threat to the regional balance of power. India has remained cautious about China's SCS encroachment since China has, for years, attempted to curb India's military footprint and cooperation with regional littoral countries.<sup>6</sup> If China were to dominate the SCS, India would find it onerous to access maritime trade routes and conduct oil and gas exploitation in the sea. Additionally, India's long-term economic presence in Southeast Asia would likely be put to the test in the wake of Beijing's maritime prowess.

Sino-India border disputes have further fueled the Indian people's negative attitude toward China. According to a 2019 Pew survey, 73 percent of Indian respondents saw China's growing military might in the SCS as "a bad thing."<sup>7</sup> Tensions between India and China—whether tacit or implicit—are essentially shaped by both historical and contemporary factors, notably "the unique histories governing their formation as modern states, the stark contrasts in their respective political regimes, and their ongoing territorial disputes and geopolitical rivalries."<sup>8</sup>

### ***India's Pragmatic Interests in the South China Sea***

Freedom of navigation, maritime resources, and strategic interests play a triple anchor in India's SCS interests. India has paid heed to the peace and security in the SCS, as "the SCS is our business. We have historical rights established by practice and tradition to traverse the SCS without impediment. We have mutually contributed to each other's prosperity for two thousand years," India's former Ambassador to China and Foreign Secretary Vijay Gokhale said.<sup>9</sup> When freedom of navigation in the SCS comes under severe threat, India's access to Southeast Asia, where it traditionally maintains maritime contacts and strong cultural bonds with regional countries, could be harshly undermined.<sup>10</sup>

The SCS, one of the most important global shipping lanes, also facilitates India's economic and diplomatic linkages with Southeast Asian countries. According to India's Ministry of Commerce and Industry, India's bilateral trade with ASEAN economies in 2020–21 accounted for \$78.9 billion and could reach \$300 billion by 2025.<sup>11</sup> There remains enormous potential for furthering India-ASEAN ties in trade and investment, especially in sectors such as infrastructure, tourism, e-commerce, education and skill development, and healthcare and pharmaceuticals.<sup>12</sup> As such, the security of the Indian Ocean's maritime route to the Pacific comes in parallel with the stability and security of Southeast Asian economies, with the SCS staying as the centerpiece.

In terms of resources, India has been carrying out offshore energy projects with Vietnam in the energy-rich SCS since the late 1980s when ONGC Videsh Limited (ONGC-VL) cooperated with PetroVietnam (PVN). Both sides discovered two large gas fields in the SCS, Lan Do and Lan Tay, of which estimated natural

gas reserves were up to 58 billion cubic meters<sup>13</sup> with annual output averaging about two billion cubic meters of gas.<sup>14</sup> Due to India's briskly growing consumption and stagnant domestic output, India's oil import dependence had risen from 83.8 percent in 2018–19 to 85 percent in 2019–20,<sup>15</sup> with a significant amount of oil imported from the United States and Russia.<sup>16</sup> Abundant oil and gas in the SCS could accommodate India's energy need, thus reducing its import dependence on American and Russian markets.

Regarding strategic interests, the SCS lies at India's edge, the junction between the Pacific and Indian Oceans, and is a strategic center linking East Asia, the Pacific, the Indian Ocean, South Asia, and the Middle East. The SCS is also a buffer zone, helping prevent great powers from launching a blistering attack on India. Having a firm foothold in the SCS could help India reduce its dependency on major powers for avowed maritime needs.<sup>17</sup> In the face of China's growing coercion, India could harbor its strategic security in the SCS—a “pedal” to expand its strategic influence toward the western Pacific. In other words, the SCS plays the “Eastern shield” role, leveraging India's balancing influence against China.

It is also vital to note that the SCS serves as a strategic gateway to India's Act-East Policy,<sup>18</sup> which indicates New Delhi's willingness to seek closer economic cooperation and political and security arrangements with Southeast Asia.<sup>19</sup> Strategically, the SCS helps India expand its influence and tests its ability to play a meaningful role in Southeast Asia. In April 2000, Indian defense minister George Fernandes emphasized India's maritime interests extend “from the North of the Arabian Sea to the SCS,”<sup>20</sup> because India construes China's expansionist policies in the SCS as jeopardizing its national and regional interests.<sup>21</sup>

### ***The “Indo-Pacific” Construct in India's Vision***

India's prime minister Narendra Modi, in his keynote address at the 2018 Shangri-La Dialogue in Singapore, for the first time articulated India's vision of the “Indo-Pacific region.” In his foreign-policy speech, Modi mentioned the term “Indo-Pacific” 11 times and espoused a “free, open, prosperous and inclusive Indo-Pacific Region.” Modi, in addition, underlined that ASEAN would remain the abiding characteristic of the Indo-Pacific and said India's engagement with this region would be built upon a five-base S' in Hindi: Sammaan (respect), Samvad (dialogue), Sahyog (cooperation), Shanti (peace), and Samridhi (prosperity).<sup>22</sup>

India's vow to play a bigger role in the Indo-Pacific architecture received welcoming gestures from Vietnam. In his 2018 defining speech on India-Vietnam relations, former Vietnamese president Tran Dai Quang lauded the pivotal role of India and exhorted India's greater presence in the Indo-Asia-Pacific region: “In recent years India's rise has been closely linked with the prosperity and affluence

of Asia as a whole. India's peaceful development has always worked as an important and constructive factor to regional peace and stability. With its vast potential and great contributions, India surely deserves a greater role in the Indo-Asia-Pacific region and the world."<sup>23</sup>

India has pragmatic interests in accessing Southeast Asian waterways and building capacity in member states of ASEAN. These strategic considerations stand at the locus of New Delhi's Indo-Pacific vision.<sup>24</sup> Southeast Asia, when viewed from the Indian Ocean, is the "backyard" of India, but the "foyer" of the Indian Ocean when observed from India.<sup>25</sup> India is at the center of the integrated Indo-Pacific maritime theater, where it has long worked as a security provider through its growing maritime role.<sup>26</sup> India's Act-East Policy, upgraded from its previous Look East Policy in 2014, has gradually been transformed into an Act Indo-Pacific Policy under the Modi administration, and India has located the Indo-Pacific region as the focal point of its engagement with countries in South, Southeast, and East Asia.<sup>27</sup>

India's sphere of influence is increasingly likely to be restricted due to China's encirclement from naval bases in the "string of pearls" stretching from the Chinese mainland in the Asia-Pacific to the Indian Ocean and even the Middle East.<sup>28</sup> While China has embroiled itself in SCS territorial disputes, the spillover effects of geopolitical tensions could soon come to the doorstep of India. The Indian Ocean Region, where India has maintained friendly relations with regional countries, could foreshadow a new space for competition between New Delhi and Beijing.<sup>29</sup> China wielding greater influence overseas would pose a severe threat to India's geopolitical and strategic interests in the broader Indo-Pacific, where India has long been caught in an uncertain position given the rise of China's maritime ambition.

### **Middle-Power Cooperation: India-Vietnam Maritime Security Ties**

India's dynamic engagement in the SCS has received Vietnam's unwavering support. Vietnam has been consistent in viewing India as a reliable strategic partner, and, for a long time, has considered the bilateral relationship "trusted and warm."<sup>30</sup> While India's geographical position in South Asia has traditionally supported itself as a vital performer "in the strategic calculus surrounding the Indian Ocean," Vietnam stands out as a focal point in India's perception as Hanoi lies at the geopolitical heart of the Indo-Pacific.<sup>31</sup>

### ***Diplomatic Ties***

A shared history of strained relationships with China, namely long-standing sovereignty border disputes, has long imposed a shadow over India and Vietnam's

political agendas. A certain degree of shared concern has inherently laid out a shared vision in response to China's maritime expansionism. While striving to play a more visible security role in Southeast Asia, India has been seeking to recalibrate its relations with Vietnam to address China's SCS ambition.<sup>32</sup> India and Vietnam have continued to foster bilateral relations with frequent meetings between senior officials from both sides.<sup>33</sup>

Staying consistent with its foreign-policy principle of pursuing "multilateralization and diversification of international relations,"<sup>34</sup> Vietnam has sought to foster relations with great powers to diversify its strategic options. Among major powers, India appears to have won recognition by Vietnamese leaders through generations as a "benign power,"<sup>35</sup> whose long-term presence in the SCS would help Hanoi accommodate its interests.

India and Vietnam have attached SCS security to their political agendas, where India has actively supported Vietnam's stand on the importance of upholding maritime security in the SCS, resolving disputes in accordance with international law, especially the 1982 United Nations Convention on the Law of the Sea (UNCLOS). For India, "maritime multilateralism" serves to address transnational challenges and promote economic activities in the SCS.<sup>36</sup> The 2013 *Joint Statement on the Occasion of the State Visit of the General Secretary of the Communist Party of Vietnam to India* stressed the "strategic engagement" in bilateral relations and "called the parties concerned to exercise restraint, avoid threat or use of force and resolve disputes through peaceful means in accordance with universally recognized principles of international law, including the UNCLOS."<sup>37</sup>

The 2014 *Joint Communiqué* continued the words of the 2013 *Joint Statement*, reaffirmed India's view of Vietnam "as an important pillar in its Look East Policy," and expressed Vietnam's firm support for India's increasingly important role.<sup>38</sup> The India-Vietnam relationship, which was upgraded to "comprehensive strategic partnership" during Prime Minister Modi's visit to Vietnam in September 2016, continued to witness pragmatic ties as both sides reiterated their desire to jointly work "to maintain peace, stability, growth and prosperity in Asia and beyond."<sup>39</sup>

India's outreach to Vietnam receives warm support thanks to India's public diplomacy, which is crucial to the promotion of intercultural understanding.<sup>40</sup> Additionally, the proactive role of the Indian community, the Indian diaspora of nearly 2,500, and community organization in Vietnam, notably the Indian Business Chamber in Vietnam, have helped strengthen links between persons of both nations.<sup>41</sup>

Intertwined interests serve as the leverage for enhancing bilateral ties. Vietnam's support for India's more visible role in the SCS has provided New Delhi with a measure of balance against China's maritime rise. Lingering maritime tensions that Vietnam has with China have made Hanoi a natural partner that New



Delhi has embraced to counterbalance against Beijing's potential adventurism in India's own neighborhood.<sup>42</sup> At the 2018 Shangri La Dialogue, Modi articulated India's firm principles regarding "equal access as a right under international law to the use of common spaces on sea and in the air that would require freedom of navigation, unimpeded commerce and peaceful settlement of disputes in accordance with international law."<sup>43</sup> The *India-Vietnam Joint Statement* in the same year expressed similar principles as Modi's Shangri La Dialogue speech, and added: "The two sides reiterated that the parties concerned should continue exercising self-restraint and refrain from the use of force or threat to use force."<sup>44</sup> The SCS is at the locus of India's geopolitical concern, with Modi's "unmistakable references to China's rising assertiveness in the disputed SCS."<sup>45</sup>

In May 2020, Anurag Srivastava, the spokesperson of India's Ministry of External Affairs, voiced criticism against China's aggression in the SCS by saying: "[The] SCS is a part of [the] global commons and India has an abiding interest in peace and stability in the region," and added: "We firmly stand with the freedom of navigation and overflight and unimpeded lawful commerce in these international waterways, in accordance with international law."<sup>46</sup> He was, of course, referring to aggressive activities triggered by China against other littoral claimant states, including Vietnam, in the SCS.

India's attitude vis-à-vis Beijing's maritime encroachment has shifted toward a firmer approach, which has been in stark contrast to India's aloofness and cautious approach "dictated by the fear of alienating China" under the Manmohan Singh administration.<sup>47</sup> In referring to the SCS, India has embraced tougher language and has been more motivated to balance China's coercion. In August 2020, India deployed a warship to the highly disputed SCS region, accompanied by a strongly worded statement from the Indian government: "Soon after the Galwan clash broke out in which 20 of our soldiers were killed, the Indian Navy deployed one of its frontline warships to the SCS where the People's Liberation Army's Navy objects to the presence of any other force claiming the majority of the waters as part of its territory."<sup>48</sup> In a virtual meeting with his Vietnamese counterpart Pham Binh Minh in August 2020, Indian external affairs minister Subrahmanyam Jaisankar discussed China's stepped-up activities in the SCS and along the Line of Actual Control.<sup>49</sup> This move, without doubt, showcased India-Vietnam ties in the face of Chinese aggression.

While the world grappled with the COVID-19 pandemic, China deliberately exacerbated the situation by deploying bombers to islands in the SCS, inciting a wave of anger in Vietnam. In August 2020, Vietnam's ambassador to India Pham Sanh Chau met with Indian foreign secretary Harsh Vardhan Shringla and briefed him on the deteriorating situation.<sup>50</sup> Vietnam's appraisal of the flare-up to the

Indian public showcased the true nature of Vietnam-India comprehensive strategic partnership and implied that Vietnam would likely continue to support India's freedom of navigation and overflight in the SCS.<sup>51</sup> In December the same year, Prime Minister Modi and his Vietnamese counterpart Nguyen Xuan Phuc called for "peace and freedom" in the SCS and agreed to foster military-to-military exchanges and defense industry collaboration.<sup>52</sup>

### ***Economic Cooperation***

Though refraining from voicing complaints against China's domination in the SCS, India has a huge economic stake in fostering oil-exploration activities off the coast of Vietnam, with ONGC Videsh Limited engaging in oil and gas production with PetroVietnam. However, India's seeking of economic ties with Vietnam was met with significant misgivings from China, claiming that the bilateral oil and gas exploration violated China's legal rights in the SCS. In 2011 *Global Times*, a tabloid run by the ruling Chinese Communist Party, called the India-Vietnam deal a serious political provocation and urged the Indian government to "try every means possible to stop this cooperation from happening."<sup>53</sup>

China's objection to oil exploration in maritime areas offered by Vietnam faced India's own strong objection. In September 2011, External Affairs Ministry official spokesperson Vishnu Prakash protested against Beijing's warning by saying, "Our cooperation with Vietnam or with any other country for that matter in the world is always as per as international laws, norms and conventions."<sup>54</sup> During the visit of Vietnamese president Truong Tan Sang to India in October the same year, a firmer line emerged with the signing of the agreement on new investments in oil and gas exploration between ONGC-VL and PVN.<sup>55</sup>

India's Navy Chief Admiral Devendra Kumar Joshi also termed the SCS situation "complex" and expressed India's strong adherence to economic assets and freedom of navigation in the disputed waters. Against the backdrop of Beijing's military modernization in the SCS, Admiral Joshi alleged: "we will be required to go there and we are prepared for that" whenever India's interests are at stake—for example, "ONGC-VL has three oil exploration blocks there."<sup>56</sup> Amid China's protestations that the exploration of Blocks 127 and 128 violated its territorial rights, India's state-owned ONGC-VL signed a mutual cooperation agreement with Vietnam's state-run PVN "for mutual cooperation for exploration in Blocks 102/10 & 106/10 of PVEP and Block 128 of OVL [ONGC-VL] in offshore Vietnam." The 2014 agreement was a determined move, which "did a volte face at the insistence of Ministry of External Affairs, which wanted India to continue its presence in [the] SCS."<sup>57</sup> By staying committed to expanded oil exploration with

Vietnam and publicizing its preparedness of naval engagement, India showcased its determination to stand in good stead with Vietnam.

In July 2017, Vietnam granted ONGC-VL a two-year extension to explore Oil Block 128, a part of which is within China's so-called Nine-Dash Line. The fifth extension of the exploration license implied India's strategic interest in preserving its economic presence in the SCS while Vietnam could continue to enmesh Indian's economic interests with its economic activities in the contested waters.<sup>58</sup> The extension was a strategic move since bilateral interests have been far more than solely a commercial deal. Vietnam's fostering commercial ties with India "are part of its strategy of seeking many partnerships with big powers while avoiding formal military alliances," and enhancing oil cooperation could be deciphered as Vietnam's concrete move to welcome India's growing role in the SCS.<sup>59</sup>

Oil and gas exploration continued to stay at the heart of bilateral economic ties. Vietnamese president Tran Dai Quang, in his official meeting with Prime Minister Modi in 2018, encouraged Indian firms to continue oil and gas exploration and exploitation activities in Vietnam's continental shelf and EEZ.<sup>60</sup> In the same year, the two countries—for the first time—identified "models for cooperation, including those involving [a] third country" in their oil and gas cooperation projects.<sup>61</sup> Vietnam's welcoming posture could be read as a direct response to China's irrational objection, and to a certain extent, a subtle counterbalancing move against Beijing's maritime ambition. On its part, India has, on many occasions, showed its commitment to promote oil and gas exploration with Vietnam despite Beijing's condescending and provocative actions in Vietnamese waters.<sup>62</sup>

### ***Security and Defense***

India and Vietnam, while acknowledging the strategic importance of the SCS and their volatile position when it comes to China's rising power, are edging closer toward each other. Along with diplomatic support and energy collaboration, the two partners have boosted their investment in security and defense cooperation. The milestone of their bilateral defense cooperation came when India and Vietnam signed a Defense Protocol in March 2000, laying a comprehensive mechanism for regular dialogues between two defense ministers and possible joint naval drills.<sup>63</sup> In November 2009, India and Vietnam signed a memorandum of understanding on defense cooperation, which helped both sides consolidate defense cooperation and promote delegation exchanges.

In September 2012, an unidentified Chinese warship confronted the Indian Naval Ship *Airavat* while on passage from Vietnam. The naval challenge provoked deliberately by China was the first reported encounter between the navies of the two countries in the SCS.<sup>64</sup> China's naval assertiveness irked India's presence in

the disputed sea and strengthened India's resolution to enhance maritime ties and interoperability with Vietnam.<sup>65</sup>

Basically, the shift in India's SCS engagement has been due to "its own evolution through the Indian strategic prism" and "security dynamics" in Southeast Asia, that is, the "rise" of China and its growing maritime assertiveness.<sup>66</sup> The logic of India-Vietnam relations under the shadow of the "China threat" gained much insight when referring to David Scott's SCS rhetoric: "Kautilya's logic also applies for India, his so-called 'mandala diplomacy' in which a neighbor (China) is likely to be antagonistic but a neighbor of that neighbor (Vietnam) is likely to be supportive."<sup>67</sup>

Prime Minister Modi, in his 2014 media statement, acknowledged that "Vietnam has been at the forefront of India's engagement in the region," and "India remains committed to the modernization of Vietnam's defense and security forces. This will include [the] expansion of our training program, which is already very substantial, joint exercises and cooperation in defense equipment. We will quickly operationalize the 100 million dollars Line of Credit that will enable Vietnam [to] acquire new naval vessels from India."<sup>68</sup> Vietnam is procuring 12 high-speed patrol boats under the 2014 extended line of credit, and in April 2021, Vietnam launched the second high-speed patrol boat built with India's technical and financial assistance. The first India-made patrol vessel was handed over to Vietnam in December the previous year.<sup>69</sup>

Though steering clear of getting involved in maritime tensions, India has stepped up military cooperation with Vietnam.<sup>70</sup> A more engaged India in the SCS would undoubtedly invite opposition from China. However, India's withdrawal from economic and defense cooperation with Vietnam due to China's imperiousness from "its superiority in economic production and a perceived divine entitlement to universal rule," would definitely be deemed by Chinese leaders as kowtowing to Beijing's authorities.<sup>71</sup>

India's abiding interest with Vietnam has stemmed from its strategic thinking—that is, viewing Vietnam as "a counterweight in much the same way Pakistan has been for China."<sup>72</sup> At the same time, buttressing defense ties and providing Vietnam with naval and air capabilities would deepen India's ties with the United States as Hanoi has enjoyed a burgeoning relationship with Washington.<sup>73</sup> Indeed, the United States considers Vietnam as "the most strategic-thinking of all the ASEAN countries," laying the possibility of elevating the relationship to a higher level in the coming years.<sup>74</sup>

In the same vein, US-India relations are drawing closer, and as praised by then-US president Donald Trump, "a strong India-US partnership can anchor peace, prosperity and stability from Asia to Africa and from [the] Indian Ocean to the Pacific."<sup>75</sup> In September 2021, US president Joe Biden said that "the US-India

relationship can help [the US] solve a lot of global challenges.”<sup>76</sup> With Vietnam as the lynchpin in the SCS, India can beef up its naval cooperation with Vietnam, notably when New Delhi and Hanoi are recognized in the Biden administration's 2022 *Indo-Pacific Strategy* as “leading regional powers” and allies of the United States.<sup>77</sup> Furthermore, India and Vietnam can also develop more robust ties with America amid China's provocative moves.

India-Vietnam defense collaboration received new impetus as India's Act-East Policy acquired a striking maritime edge, now that the two middle powers have a stake in ensuring the security of sea lanes and share concerns about China's domination of the SCS.<sup>78</sup> The Indian Navy prefers maritime engagements with Vietnam and has helped Vietnam build up required capacity for maintenance and repair of its defense platforms. India has helped Vietnam with “the procurement of weaponry and military hardware, capacity building, collaboration in the area of warship building and repair.”<sup>79</sup> In 2011, the Indian Navy offered Vietnam naval facilities used for training and capacity building, in return for berthing rights in Vietnam's port of Nha Trang.<sup>80</sup>

Following recent inroads, India has emerged as one of Vietnam's key defense providers. India has firmed up military ties with Vietnam via initiating several military contracts. New Delhi is implementing a \$100 million Defense Line of Credit, which helped build 12 high-speed patrol boats for the Vietnam Border Guard Force.<sup>81</sup> Security cooperation to “enhance coastal security and prevent illegal activities” indicates that the two countries have been working closely to enhance their defense ties.<sup>82</sup> In essence, India's maritime security commitments indicate a soft alignment between the two like-minded powers.

Naval-to-naval cooperation between India and Vietnam continues to be vital given growing provocative actions that China directs toward Vietnam in the SCS.<sup>83</sup> Following the first exercise conducted in May 2018 in Da Nang, the Indian Navy and the Vietnam People's Navy undertook the second edition of bilateral naval exercises off the coast of Cam Ranh Bay, Vietnam within a four-day practice period in April 2019. The navy-to-navy cooperation involved a composite training program in submarine, aviation, and dockyard training, which helped strengthen interoperability and shared best practices from both sides.<sup>84</sup>

Given the growing bilateral partnership, Indian ships have received invitations by the Vietnamese government to pay annual visits to Vietnam's major ports, such as Dinh Vu (Hai Phong City), Tien Sa (Da Nang City), Sai Gon (Ho Chi Minh City), and Nha Trang (Khanh Hoa Province).<sup>85</sup> Indian naval officers making regular visits to Vietnam have enhanced Indian presence in the SCS and made India's maritime commitment more solid.

While the SCS is evidently “a neutral navigation field beyond the sovereign limits of the littoral countries,” India “has not taken a strong position against Chinese bullying attempts.”<sup>86</sup> India’s balancing role so far has evolved around preserving the international rules-based order at sea while exporting defense systems and weapons to Vietnam.

While Vietnam and India have engaged in discussions on the possibility of Vietnam’s acquisition of India’s Brahmos and the Akash missile systems since 2014,<sup>87</sup> India is currently no closer to providing either missile systems to Vietnam for fear of antagonizing China.<sup>88</sup> There are other reasons behind this shortcoming. One is because India and Vietnam have not reached a consensus on the funding,<sup>89</sup> and another is Vietnam’s potential consideration of acquiring the Brahmos cruise missile from Russia instead of India. However, for Russia, the potential export of the Brahmos medium-range missile to Vietnam could undermine Moscow’s relations with Beijing,<sup>90</sup> which has increasingly played out as Russia’s ally against the West, especially amid Russia’s ongoing invasion of Ukraine. So far, New Delhi and Hanoi have been prudent in keeping their conversations behind closed doors rather than making their intentions go viral among public audiences.

## **Conclusion**

The incredibly ambitious Act-East Policy, coupled with the emergence of the Indo-Pacific vision in India’s strategic thinking, has provided a rationale for India’s SCS engagement to secure its interests and balance against China’s growing military prowess. India has been increasingly susceptible to threats and challenges posed by China’s growing influence in the SCS and beyond. One thing is for sure: regional security can hardly be sustained as China is bent upon turning the SCS into its “internal lake,” and has patently exploited the weakness or forbearance of great powers to rub its neighbors in the wrong way.<sup>91</sup> Former US president Barack Obama’s acceptance of Chinese president Xi Jinping’s 2015 promise that China would by no means militarize the SCS has turned out to be a naïve strategy. India, therefore, should make a fresh start by undertaking a counterbalancing role in the sea that China has long considered as its exclusive pond.

China’s hard-power projection, which India and Vietnam have been looking at over their shoulders, could drive both countries toward a united front to accommodate their mutual concerns. Forging India-Vietnam ties on the matter of SCS security, persisting on oil and gas exploration and exploitation and strengthening Vietnam’s military capability are striking examples of the ongoing sincere and robust relationship. However, the two nations should support a growing role for like-minded powers in the SCS, such as the United States, Japan, and Australia, while avoiding “a direct confrontation” with Beijing.<sup>92</sup>

With an eye toward security in the SCS, India should fasten maritime challenges posed by China to its long-term interests and work closely with Vietnam to increase deterrence and defense against China. India, a traditional middle power, and Vietnam, an emerging middle power, should further embrace a more determined approach by conducting joint naval exercises. India and Vietnam could also enhance mutual support by participating in maritime dialogues and naval exercises, with “shared role[s] in regional decision making, strengthening maritime connectivity and focusing on steps toward maintaining a free and open Indo-Pacific.”<sup>93</sup> India’s joint maritime activities with Vietnam could augment Vietnam’s defensive capability while cutting Hanoi’s defense expenditures.<sup>94</sup>

A strengthened India-Vietnam alignment in the face of China’s increasing aggression could send a timely message to Beijing. First, enhancing India-Vietnam ties in times of China’s maritime aggression showcases India’s willingness to foster its engagement in the SCS. Second, Vietnam seeking stronger defense ties with like-minded powers, with India as a prominent example, is likely to continue. As bilateral ties continue to warm, growing ties open the possibility of a strengthened partnership between India and Vietnam—and that is something that leaders in China must consider before strengthening their presence in the SCS. 🌐

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