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The Chinese Maritime Militia

A Perfect Swarm?

*Michael D. Armour**

The South China Sea is a zone of contention between China and other nations in the region. The US Navy has decreased the number of ships available to counter Chinese encroachments here and this power vacuum may be exploited by the Chinese Maritime Militia (CMM). The militia is comprised of fishing vessels that are used to augment the People's Liberation Army Navy (PLAN), and possesses sophisticated communication and GPS technology. CMM units, using swarm warfare tactics and Network Centric Warfare (NCW), have the potential to become a significant combat multiplier in China's endeavours to take control of the area. Therefore, it is important to understand the tactics and capabilities of this organisation. Similarly, if Beijing decides to close or interdict the South China Sea trade routes or expand naval influence into the Indian Ocean, other actors, such as India, Australia or Japan may be drawn into direct confrontation with the militia.

It is evident that the People's Republic of China (PRC) is a regional power, a rising world power and a peer competitor to the United States, and other nations, in both the economic and military spheres. In the military arena, Beijing has increased military spending over the past 20 years and the PLAN is placing increased emphasis on the development of a 'blue water' navy with the eventual capability of displacing US influence in the region and becoming a major world power.¹ Although

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the protracted goal of the PLAN may be the expansion of naval power to a global level, the main focus presently lies in the regional areas of the South and East China seas and the littorals along the Chinese mainland. Recent Chinese territorial limit claims and construction operations in these areas have created potential flash points for confrontation between elements of the PLAN and foreign forces including the United States. In response to these actions, the US Navy recently conducted freedom of navigation operations (FONOPS) by sending the USS Lassen (DDG-82) within 12 nautical miles of a Chinese claimed maritime feature (Subi Reef) without prior notification of the transit.² Sources also report that further FONOPS may be conducted near Mischief Reef as a further rejection of Chinese territorial limit claims around these maritime features.³ In addition to this, it has been reported that China has recently deployed advanced surface-to-air missile systems on Woody Island in the Parcel chain. This atoll is also claimed by Taiwan and Vietnam.⁴ In the same light, the Chinese have also sent Shenyang J-11 and Xian J-H7 fighter planes to the same island thus escalating international tensions significantly.⁵

The US Navy's Pacific Fleet currently consists of 79 ships and is composed of combatant elements ranging from cruisers to destroyers and six littoral combat ships (LCS).⁶

The LCS's possess the capability to operate in a near shore environment and could play a major role in any confrontation with Chinese naval forces concerning the maritime features discussed above. LCS's are shallow draft vessels that can operate near the shore line and possess a formidable array of weapons, sensors, and aviation assets.⁷ Additionally, the Navy plans to install over-the-horizon strike missiles on LCS's by the end of 2016.⁸ These ships also have the capacity to network with the information matrix of a joint force and assimilate knowledge from external sources. They can also share their own data collections with other units or headquarters and bring the benefits of network centric warfare to fruition in a tactical sense.⁹

As formidable as the LCS appears to be, the Department of Defense (DoD) has decided to cut the number of LCS's to be produced from 52 down to 40 and demanded the production of a single design rather than the planned two variant types.¹⁰ Questions have also arisen concerning the range and speed of small surface combatants, which include the LCS, as not being able to meet the long range cruising capabilities in the vast PACOM AOR and in any future conflict may not be deployed.¹¹ Matt

Towns, writing for the *US Patriot Tactical* stated the following concerning the deployment of the LCS in the South China Sea:

I know that the Navy has a pivot to the Pacific coming, they have been talking about it for years, but the LCS is a ship without the ability to have a mission and throwing them at the Chinese just seems stupid.¹²

Conclusions gleaned from the above information indicate that the DOD and the USN are rethinking the importance of small ship warfare across the board thus creating a lack of capability to act in the littoral regions of the South and East China seas should the need arise.

In contrast, the Chinese are upgrading their capabilities in 'small ship warfare' by deploying and improving their maritime militia.

THE CHINESE MARITIME MILITIA (CMM)

On 27 October 2015, when the USS Lassen most recently performed FONOPS in the South China Sea, it was reported that PLAN units shadowed the ship at a respectable distance; however, it was also noted that a more than usual number of fishing boats were present in the area. Some actually crossed the destroyer's bow.¹³

Origins and Evolution

These fishing craft were most probably part of the CMM. This organisation dates back to the founding of the communist state when commercial vessels were used to augment regular naval units. This same organisation is still active today and is reported to be well funded, manned with trained personnel and is becoming more sophisticated in its capabilities.¹⁴

The origin of the CMM is closely linked with the Chinese fishing industry which is centuries old and is reported to be the largest in the world. According to the UN Food and Agriculture Organization, China possesses 470,700 ocean going fishing vessels which are manned by over 21 million fishermen.¹⁵ This vast fleet operates in almost all areas of the globe including the Pacific, Atlantic, and Indian Oceans, which involve the jurisdiction zones of over 30 countries.

The evolution of the militia as a para-military force is also embedded with maritime strategy and the need for additional resources. Historically, China's military orientations were directed toward the interior and military thinking was centered on the land mass of Asia. With the advent

of the Communist revolution in 1949 the landward outlook gradually began to change. The PLAN began its existence as mainly a 'brown water' force dedicated to protection of inland waterways and coastal areas. Den Cheng notes that in the early days of its existence the PLAN was primarily a coastal defense force with few surface combat ships. Naval military strategy centered on the idea of conducting a guerilla type war using masses (swarms) of torpedo and missile attack craft to overcome a stronger and sophisticated naval force.¹⁶

The end of the Cold War facilitated an important shift in Chinese maritime strategy to an 'off-shore' orientation. The focus of naval activity changed from specific entities or areas such as the erstwhile Soviet Union and Taiwan to the first island chain of the South and East China seas, which is more commonly referred to as the 'Nine Dash Line'.¹⁷ This change in focus added a significant amount of sea area to the operational zone of Chinese naval forces. Additionally, it is reported that the PLAN has actually shrunk in size with many of its obsolete vessels and combat systems being decommissioned.¹⁸ If this is the case, the Chinese navy has more area to cover and must attempt to assert area control with fewer assets; therefore, to make up these short comings it would be logical to enlist a contingent of the vast fishing fleet to augment the regular naval forces.

Training and Missions

As stated before, the CMM is composed mainly of fishing boats which are part of China's vast fishing fleet. Its estimated strength is about 750,000 personnel serving on 140,000 sea going vessels.¹⁹ The militia is organised around company sized elements, which are located mainly in port facilities congruent with fishing industry assets. Qionghai City, Tanmen Township on Hainan Island is one of the main militia staging areas. The militia company in that city was founded in 1985 and its elements represent 90 per cent of the fishing boat activity in the South China Sea.²⁰ Other units have been reported in Hainan's Sansa city and Jiangmen Guangdong Province.²¹

Basic military training for these companies are conducted by city level branches of the People's Armed Forces Department. Training subjects include topics such as search and rescue, reacting to disasters at sea and the 'protection' of Chinese maritime interests.²² In the same light, an article appearing in the *New York Times* in 2010 relates that the CMM units are trained to coordinate with Chinese maritime law

enforcement groups such as the Chinese Coast Guard and the Fisheries law enforcement Command.²³ The units are also trained to perform reconnaissance missions and are reported to be the 'advance guard' in the island construction project that China is undertaking in the South China Sea.²⁴ Andrew Erickson denoted the following mission classifications for the CMM:

The Maritime Militia also trains for some independent missions, such as anti-air missile defense, light weapons use and sabotage operations. Reconnaissance and surveillance are strongly emphasized, as China anticipates potential gaps in its intelligence, surveillance, reconnaissance (ISR) coverage, and can have the Maritime Militia loiter around targets of interest or report sightings during its regular operations at sea.²⁵

In summation, it can be deduced that the CMM is a para-military organisation that is trained by the state to augment the PLAN in its quest to control the areas around the so-called Nine Dash Line in the South China Sea. The training given to these militia units are intended to prepare them for confrontation with any foreign naval elements which encroach on China's claimed area of interest (see Figure 1). The tactics include the gathering of information, harassment of foreign vessels, logistic support, and actual construction activities on the manmade islands. When Chinese President Xi Jinping recently visited the Tanmen militia he stated that the unit should not only conduct fishing activities but also collect oceanic information and support the construction of islands and reefs.²⁶

Advantages

The CMM is viewed, by some, as a very valuable asset in the quest to exert control in the South and East China seas. He Jianbin, chief of a state run fishing corporation, urged the Chinese government to deploy a large number of fishing boats in the area. He stated the following:

If we put 5,000 Chinese fishing ships in the South China Sea, there will be 100,000 fishermen and if we make all of the militiamen, give them weapons, we will have a military force stronger than all the combined forces of all the countries in the South China Sea.²⁷

In line with the above statement, reports indicate that Chinese officials are undertaking a shift in strategy regarding the CMM. The vessels presently employed by the militia are by large privately owned



Figure 1 CMM vessel attempting to interfere with US Navy's freedom of navigation operations (FONOPS) in the South China Sea

Source: US Navy

assets of various fishing companies. However, there is data which indicate that the state is planning to construct 84 large steel hulled fishing vessels in Sansha city on Hainan Island.²⁸ These boats would be state-owned and would relieve the military of having to rent vessels from private entities for militia use. In other words, the CMM is getting its own dedicated fleet.

Drawbacks

Some experts, however, feel that China's emphasis on using the CMM in a more sophisticated manner might actually be counterproductive. Zhang Zongzhu relates that this policy may incur more costs than benefits. He states that China currently has enough regular Navy and Coast Guard assets in the region and does not need to rely on the CMM. He goes on to say that militia operations would needlessly put fishermen's lives in danger, possibly cause industry profit loss, and tarnish China's international image.²⁹ He also stated that the private militia units are

difficult to control. It hard to discern which road the Chinese government will take concerning the future use and status of the CMM; however, the potential for the evolution of the CMM into a formidable force is possible and should be taken seriously.

EXPANSION OF MISSIONS AND CAPABILITIES

Hypothetically, the capabilities of the CMM could be enhanced in the following evolutionary manner:

1. *Primary Phase:* Those missions that are currently observed; namely, reconnaissance, harassment and blocking maneuvers.
2. *Secondary Phase:* Intelligence gathering (SIGNET), electronic jamming and more aggressive actions such as ramming by vessels with steel hulls (which are currently being built).
3. *Tertiary Phase:* Ships armed with anti-air missiles (shoulder fired or stationary), light anti-ship missiles, drone launching and mine laying capabilities. Table 1 denotes the possible types of anti-ship cruise missiles (ASCM) that could be deployed on CMM vessels. These weapons represent the older Styx class of ASCM's which are considered obsolete for use against modern surface warships; however, when used against transports, tankers, auxiliary ships or amphibious ships, the results could be highly lethal.³⁰
4. *Quaternary Phase:* Ships armed as described above, trained in swarm tactics and interconnected by a Network Centric Warfare (NCW) system.

The actual evolution of capabilities might take an entirely different path. In fact, many elements present in all of the phases above have already been observed to some extent. The CMM has used ramming

Table 1 Chinese Anti-Ship Cruise Missiles with Potential for Use by the CMM

<i>Designation</i>	<i>Warhead Size</i>	<i>Range</i>
C-101	300 Kg	45 Km
HY1-A	<300 Kg	45 Km
HY-2	513 Kg	201 Km
HY-4	513 Kg	135-150 Km
SY-2	513 Kg	50-130 Km

Source: Kopp and Andrews, 'PLA Cruise Missiles, PLA Air-Surface Missiles, Technical Report APA-TR 2009-0803', n. 30.

tactics and Fumio Ota reports that Chinese fishing boats and maritime militia boats are trained in mine laying techniques.³¹ It is also reported thousands of militia boats are equipped with the Beidou navigation system which gives the capability of 'informatised' war fighting.³² A concerted and systematic effort by the Chinese to expand the capabilities of the CMM, especially in the fields of swarm tactics and NCW, could lead to serious consequences for the USN in the South and East China Seas. The quaternary phase referenced above represents the most dangerous outcome that could be realised and it is explored in greater depth in the section below.

NETWORK CENTRIC WARFARE

Network Centric Warfare, often referred to as Network Centric Operations, is a complex process that cannot be implemented in a short period of time. It takes years of research and high levels of technology and enormous amounts of capital. The basic definition of NCW entails the concept of different weapons platforms located on the land, on the sea (surface and subsurface) and in the air with the capability to share targeting information and deliver simultaneous fires, from various directions, on a given target.

The US Navy is currently in the process of developing sophisticated NCW systems. Ronald O'Rourke, in his 2001 CRS Report for Congress stated the following:

Reliance on NCW is at the heart of current C4I (command, control, communications, computers and intelligence) efforts in the Department of the Navy.³³

O'Rourke goes on to discuss specific developmental endeavors such as the Cooperative Engagement Capability (CEC), the IT-21 investment strategy and the Navy-Marine Corps intranet (NMCI).³⁴

Needless to say the Chinese military is not sitting idle regarding this technology; in fact, developing and implementing NCW has become a priority in the People's Liberation Army's (PLA) modernization plans. Larry W. Wortzel in *Chinese People's Liberation Army and Info Warfare*, states that the Chinese military has adopted information warfare concepts suited to its own organisation. The PLA has blended its own traditional NCW tactics with those learned from the Soviets and from US doctrine (Desert Storm, Iraq and Afghanistan) in an attempt to bring its land forces into the information age.³⁵ In the same light, Jason Fritz

notes that China's 2006 White Paper on national defense emphasises the 'informatisation' of the Military.³⁶

The PLAN is not being left out of this massive modernisation effort. The Office of Naval Intelligence (ONI) in its publication entitled *The PLA Navy: New Capabilities and Missions for the 21st Century* relates that the Chinese military considers NCW as one of the basic modes of the sea battle and that China is developing a wide spectrum of sensors that will allow it to keep track of and sort through the vast array of maritime traffic that populates the oceans of the world.³⁷ More specifically, an article published in *Modern Navy* (the PLAN magazine) indicates that major emphasis is being placed on the implementation of NCW:

The informatization of ship board weapons and equipment is at the core of maritime combat. The PLAN should vigorously build data links for maritime military action and fundamentally change the way to carry out tasks in the future.³⁸

Additionally, Andrew Erickson and Michael Chase, writing in an edited work entitled *The Chinese Navy: Expanding Capabilities, Evolving Roles*, come to the conclusion that the ultimate goal of the PLAN is a 'networked fleet'.³⁹

At this point, the question can be asked relating to the probability that these 'informatisation' efforts undertaken by the PLAN can or will be pushed down to the level of the CMM. Data indicate that the main emphasis of the modernisation processes are centered on major weapons and communications systems; however, this does not preclude the development of simpler networking systems at lower levels, including the CMM. It has been reported that the Chinese have established Information Warfare Militia Units comprised of personnel from commercial information technology sectors. These organisations conduct network warfare research and train to attack enemy wartime networks.⁴⁰ These organisations' main focus may be in the realm of 'hacking' into other networks; however, it is entirely possible that some of these units could interact with the CMM in an effort to enhance their NCW capabilities.

It has already been mentioned that Chinese fishing boats are equipped with the *Beidou* communications system. The ONI expounds on this information as follows:

China's Beidou system, installed on several thousand of its fishing boats, provides GPS-like navigation to the boats as well as automatic position reporting back to a ground station in China, allowing the

location of the fishing fleet to be constantly monitored by fishing enforcement authorities.⁴¹

It has also been noted that the Chinese are developing very small aperture terminal communications systems and deploying them on mobile vehicles.⁴²

In conclusion, Erickson and Chase hypothesise that the PLAN, and subsequently the CMM, might be able to achieve and deploy a NCW capability with surprising rapidity especially if they pursue methods that fall short of US standards.⁴³ Therefore, it is entirely possible that if emphasis is placed on networking elements of the CMM, even if rudimentary, might allow the PLAN to be able to mount a low cost but effective area denial mission in the South and East China seas.

NAVAL SWARM TACTICS

Swarm tactics are not a new concept. There are numerous examples from history where these tactics were employed. The Athenian navy supposedly used swarm methods against the Persians at the battle of Salamis in 480 BCE and others claim that the Nazi U-boats used the same tactics in World War II.⁴⁴ In modern naval terms a 'swarm' can be defined as a large number (50+) of small, fast, stealthy, and lightly manned craft that can attack a target from multiple directions and then rapidly withdraw, regroup and then initiate another attack.⁴⁵ These entities would rely on a 'reconnaissance pull', which would entail the detection of a weakness in the enemy formation and, in turn, exploit that weakness.⁴⁶

John Arquilla and David Ronfeldt in their Rand Corporation publication entitled *Swarming & the Future of Conflict*, describe the characteristics and attributes of a swarming force as follows:⁴⁷

Many small, dispersed, internettted maneuver units.

- All-service coordination for mixing and matching.
- Both stand-off and close-in capabilities.
- Integrated surveillance, sensors, C4I for 'top-sight'.
- Aim: 'sustainable pulsing' of force and/or fire.
- Result: amorphous but coordinated way to strike from all directions—stealthy ubiquity, no 'front'.
- Tenet: centralized strategy, decentralized tactics, distributed formations and logistics.

In the same light, Wayne P. Hughes, writing for the US Naval Institute, summarises the utility of swarm tactics as follows: 'Many small

enemy craft complicate your effort to detect, track, and destroy enough of them to prevent a successful enemy attack.⁴⁸

The US Navy has toyed with the idea of a swarming force. A.K. Cebrowski and Wayne Hughes, in a US Naval Institute article entitled 'Rebalancing the Fleet' discuss an organisational concept they call 'Streetfighter'. This effort would entail numerous lightly manned, small ships that would operate in 'swarms' and be deployed mainly in littoral areas.⁴⁹

While the swarm concepts discussed by Cebrowski and Hughes mainly entail the development of a new class of small and technologically sophisticated craft, the following question can be asked concerning the developmental potential for the CMM. Is it possible that the Chinese naval militia units could be imbued with the equipment and training necessary to engage in effective swarming tactics in the disputed areas of the South and East China seas? The short answer is yes. The sheer number of vessels that make up the CMM organisation would afford it the opportunity to fill the seas with enough craft to effectively block the advance of a hostile force. Cebrowski refers to this when he states that 'History and analysis have demonstrated that to achieve a given level of combat power, numerical advantage is the single most important attribute.'⁵⁰ In the same light, Joseph E. Skinner, relates that the current threat in the littorals consists of the following conditions:

The proliferation and integration of cheap weapons (diesel submarines, torpedoes, mines, and cruise missiles), cheap command-and-control assets (cellular phones, commercial radio direction finding, and computers), and a multitude of low-tech sensors (such as fishing vessels) combined with a familiarity with the local turf could tip the balance in favor of a Third World nation.⁵¹

It is evident that not all of the commercial and fishing vessels that comprise the CMM will be suitable for swarm deployment; however, because of the huge numbers of craft available it is plausible that a substantial number would be available for upgrading or new ones built, as has been reported. Additionally, it might be cited that most of the Chinese vessels in question do not have and would not be able to achieve the levels of technical sophistication that have been previously noted as necessary to engage in swarm tactics. This argument has some validity. Most of the craft could be classified as small; however, their swiftness and measure of stealth could be questioned. Yet, they certainly could be linked electronically, supplied with standoff weapons and while they may

meet the full criteria of a swarm as defined by Arquilla and Ronfeldt, they still could still be upgraded and deployed as a formidable opposing force much like the swarm tactics used by the PLA against UN land forces during the Korean War.

INTERNATIONAL IMPLICATIONS

The most likely contacts between the CCM and foreign navies will occur along the area of the Nine Dash Line where the Economic Exclusion Zones (EEZ) of various nations in the South China Sea overlap with Chinese nationalistic claims, in particular those of Malaysia, The Philippines, and Vietnam. Hostile encounters have already occurred in these areas and some produced deadly results. In May 2014, it was reported that a Chinese fishing boat rammed and sank a similar type Vietnamese vessel near a large oil rig that China had erected in waters that are claimed by both nations.⁵² Less direct participants include Brunei and Indonesia, both of which have serious EEZ issues with Chinese expansion in the region. A recent *Washington Post* article cites numerous encounters that various nations have had with China's fishing fleet.⁵³ The article states that Malaysian authorities spotted over 100 Chinese fishing boats, accompanied by Chinese Coast Guard vessels, near the Luconia Shoal which lies only 100 nautical miles off of Malaysian Borneo. The article goes on to report that Vietnamese maritime authorities recently seized a craft that was supplying fuel to Chinese trawlers that were illegally fishing in Vietnam's EEZ. Additionally, Indonesia boarded a Chinese vessel illegally fishing off Natuna Island but the seizure was thwarted by the Chinese Coast Guard. Matthew Carney writing for the *Australian Broadcasting Corporation* states that the CMM is preparing to occupy and construct artificial islands in Scarborough Shoal which is only 200 km from the Philippines.⁵⁴ Manila has sought international legal action against this incursion.

There have also been reports of the Chinese fishing fleet undertaking hostile actions in other parts of the world. Reports indicate that the CMM is also active against Japanese interests regarding the Senkaku Islands in the East China Sea.⁵⁵ Even further afield, the Argentine Coast Guard recently sunk a Chinese trawler (the LU Yan Yuan Yu 010) that had encroached into Argentine territorial waters. It was also reported that the trawler took hostile actions and attempted to ram the Argentine ships.⁵⁶ This not only demonstrates the range of operation of Chinese militia type vessels but also the hostile demeanor they exhibit when challenged.

Two other nations have interests in the actions of the CMM in the South China Sea, namely India and Australia. Sources cite that India, while not a direct participant in the South China Sea disputes, does have interests in the area. These interests are seen as playing of a 'neutral partner' in the dispute; however, there are concerns that Beijing may attempt to expand its presence in the Indian Ocean. Anjana Pasricha, writing for *VOA (Asia)* relates that India recently rejected joint patrols with the US Navy in the disputed areas of the South China Sea.⁵⁷ Other sources also state that India's position concerning territorial limits is more in line with Chinese thinking. Namely, that a nation has the right to expel a foreign military ship from its EEZ.⁵⁸

Australia, a long-time ally of the United States, has a different take on the situation. *Reuters* has reported that Australia basically supports US freedom of navigation operations in the disputed areas of the South China Sea and considers China's aggressive actions in that area as 'counterproductive'.⁵⁹ *The Wall Street Journal* relates that Australia's Prime Minister, Malcom Turnbull, plans to put pressure on the Chinese leaders in his upcoming visit because he sees the Chinese aggressive actions as possessing the potential to harm international relations and economies.⁶⁰ However, Australia has a more direct connection to the CMM. Philip Wen, writing for the *Fairfax Media Network*, relates that the Chinese Landbridge Group, which is the new operator of the Australian port of Darwin, is a central player in the establishment of CMM units in the Chinese city of Rizhao.⁶¹

The indirect orientation of these outlier nations such as India and Australia may change if Chinese intentions lead to the closing or interdiction of the South China Sea trade routes or if Beijing begins to exert its control into the Indian Ocean.

CONCLUSION

There is uncertainty in the US Navy concerning the future and deployment of the LCS. Two of these vessels have recently been the victims of mechanical problems and were temporarily taken out of action.⁶² These problems, in effect, have created a potential power vacuum in the South China Sea and especially in the littoral areas surrounding the disputed maritime features along the Chinese Nine Dash Line. That vacuum could easily be filled with an upgraded and version of the CMM. If such a force evolved to the level of sophistication represented by the quaternary category mentioned earlier, it could prove a dangerous foe

to any opposing naval force that ventured into the area. An upgraded and digitised CMM could cause severe problems for future FONOPS and for naval military operations in general. The CMM may not possess the potential to become a 'perfect swarm'; however, it could evolve into a perfect enough swarm to give the US Navy, or for that matter any navy, severe problems during any operations in the South China Sea. Additionally, if the US fails to upgrade its assets in this area, the onus may fall on other nations such as India or Australia to take up the slack.

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