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A THOUSAND SPLENDID GUNS

Chinese ASCMs in Competitive Control

Alan Cummings

In *Out of the Mountains*, David Kilcullen provides a framework for his “theory of competitive control.” His work focuses on irregular warfare, and in general he addresses nonstate armed groups as one increment along a spectrum of actors competing to control a population. He theorizes that the competitor who can impose predictable norms through *persuasive*, *administrative*, and *coercive* means will succeed. The members of the target audience, for their part, need consistency, and will adhere to this normative system regardless of whether they inherently agree with it or with the competitor’s values.¹ What do we learn when we apply Kilcullen’s core principles to China and its conduct in the wider western Pacific as a state-level competitor?

China’s overwhelming role in regional trade is certainly *persuasive*, often causing regional governments of their own volition to dilute their public response to Chinese actions rather than risk economic turmoil. Next, China’s island-building campaign coupled with China Coast Guard (CCG) support of aggressive commercial activity demonstrates the regime’s intent to exert *administrative* control over disputed areas, even in the face of dissent from the United Nations and the international community in general. Finally, this article examines the presence and lethality that China’s surface navy provides as a key element of the country’s *coercive* capacity vis-à-vis the United States and our regional partners.

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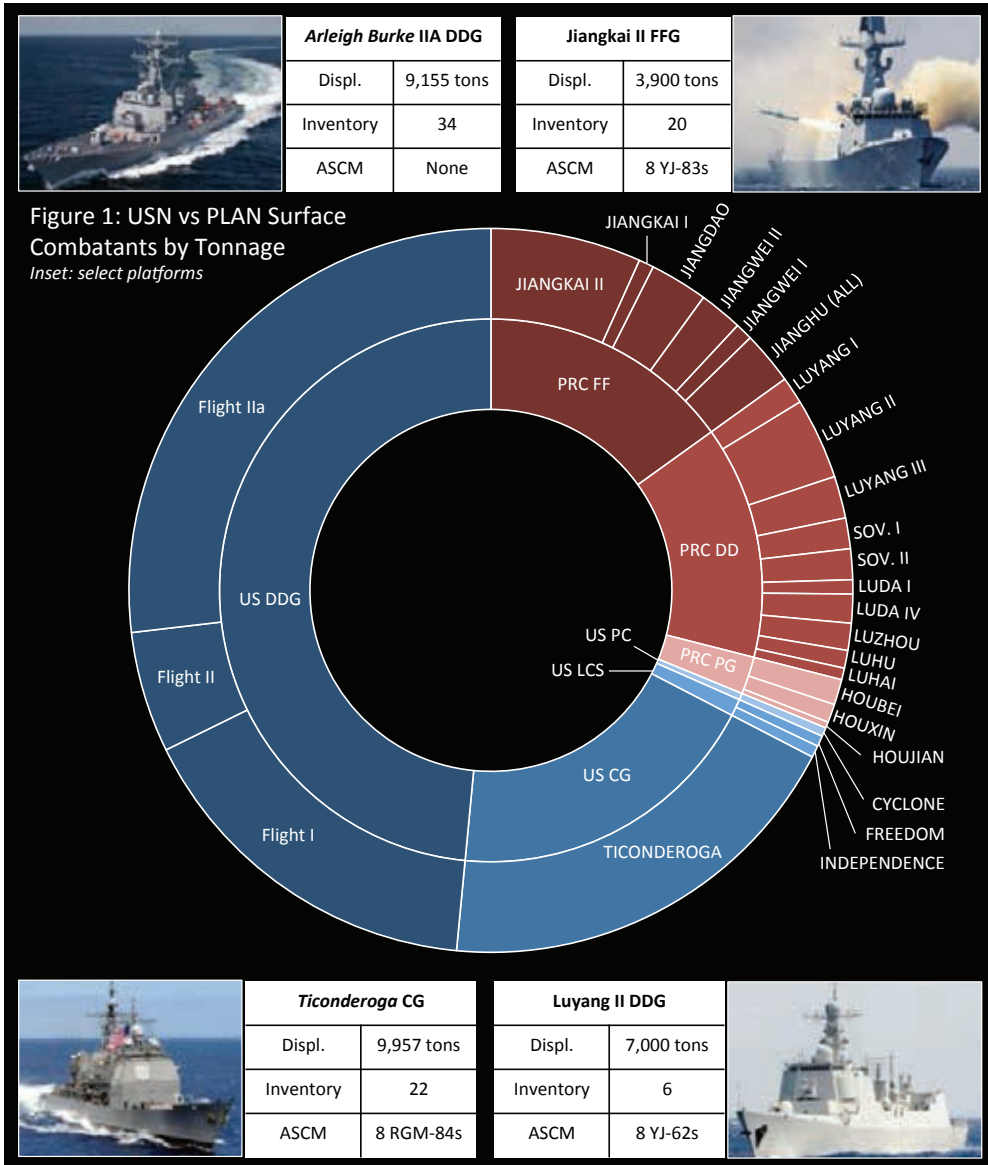
WEIGHING THE COMPETITORS

Like infantry units ashore, surface combatants are the grunts of naval maneuver. The quickest method of comparing U.S. Navy combatants with those of China’s People’s Liberation Army Navy

TABLE 1
ALPHABETICAL REFERENCE OF USN AND PLAN SURFACE COMBATANTS
WITH INVENTORY AND TONNAGE; SEE COMPANION FIGURE 1

Class	Displacement (tons)	Inventory	Force Tonnage (tons)
<i>Arleigh Burke</i> Flt I DDG	8,950	21	187,950
<i>Arleigh Burke</i> Flt II DDG	8,946	7	62,622
<i>Arleigh Burke</i> Flt IIa DDG	9,155	34	311,270
<i>Cyclone</i> PC	354	13	4,602
<i>Freedom</i> LCS	3,089	2	6,178
<i>Independence</i> LCS	2,790	2	5,580
<i>Ticonderoga</i> CG	9,957	22	219,054
USN Total	—	101	797,256
Houbei PTG	220	60	13,200
Houjian PGG	520	6	3,120
Houxin PGG	478	20	9,560
Jiangdao FFL	1,500	20	30,000
Jianghu I FF	1,702	9	15,318
Jianghu I (upgrade) FF	1,702	6	10,212
Jianghu III FF	1,924	1	1,924
Jiangkai I FF	3,900	2	7,800
Jiangkai II FFG	3,900	20	78,000
Jiangwei I FF	2,250	4	9,000
Jiangwei II FF	2,250	10	22,500
Luda I DD	3,670	2	7,340
Luda IV DD	3,730	4	14,920
Luhai DD	6,000	1	6,000
Luhu DD	4,600	2	9,200
Luyang I DDG	7,000	2	14,000
Luyang II DDG	7,000	6	42,000
Luyang III DDG	7,258	3	21,774
Luzhou DDG	7,000	2	14,000
<i>Sovremenny</i> I DDG	7,940	2	15,880
<i>Sovremenny</i> II DDG	7,940	2	15,880
PLAN Total	—	184	361,628

FIGURE 1



(PLAN) is a simple hull count: the United States has 101 in its inventory, while China comes to the table with 184. China’s numerical advantage gives it more flexibility in distributing its surface forces to contest or exercise sea control while maintaining an adequate coastal defense. Taking size (displacement measured by tonnage) into account yields a superficial advantage for the United States: nearly 800,000 tons of warship compared with China’s 362,000 tons. Taken together, however, the distribution of greater U.S. tonnage into fewer hulls means a more vulnerable concentration of power and faster losses in war. Table 1 and figure 1 illustrate these comparisons.

OUR KNIFE AT THEIR GUNFIGHT

The various vessels' antiship cruise missiles (ASCMs) are the key differentiator when comparing their organic lethality. Only fifty of the U.S. Navy's 101 surface combatants are equipped to carry a dedicated ASCM: the Flights I and II *Arleigh Burke*-class destroyers and the *Ticonderoga*-class cruisers. These ships each carry eight 1990s-era RGM-84 Harpoons capable of delivering a 488-pound warhead over sixty-seven nautical miles (nm). These ships plus an additional thirty-four Flight IIa destroyers also can fire the SM-2 in antisurface mode, but the SM-2 is a poor substitute because it was designed for air defense; for surface engagements it provides only a small warhead and a limited range. The SM-2 is counted here for fidelity purposes, with the assumption that each U.S. vessel would load forty of its vertical launch cells with SM-2s.

By comparison, all 184 ships listed for the PLAN have an ASCM capability. Most carry the YJ-83, a domestic version of the C-802A that advertises a 419-pound warhead and a 100 nm range. Some vessels have older missiles, but the Luyang II and Luyang III destroyers carry the modern YJ-62 (661-pound warhead, 150 nm range) and the YJ-18 (661-pound warhead, 290 nm range). These missile capabilities are based on available open-source data, frequently meaning the information describes the characteristics of export variants such as the C-802A. As the Office of Naval Intelligence states, "It is likely the domestic versions of these systems have much longer ranges."² Table 2 lists these vessels' ASCM capabilities.

This is prima facie evidence that the U.S. Navy has been outmatched in the brute-force lethality of its surface combatants. Applying Commander Phillip Pournelle's strike-mile metric quantifies that evidence.³ His metric (listed first) is based on delivery of a one-thousand-pound warhead across a given distance; subsequent measurements are derived below:

$$\text{Strike-mile} = \text{warhead weight (pounds/1,000)} \times \text{range (nm)}$$

$$\text{Individual vessel lethality} = \text{ASCM's strike-mile} \times \text{vessel's ASCM load}$$

$$\text{Class lethality} = \text{vessel lethality} \times \text{fleet inventory}$$

$$\text{Type lethality} = \text{sum of subordinate classes' lethality}$$

Applying these formulas leads to table 3 and figure 2.

PLAN surface combatants' ability to deliver antisurface warfare (ASuW) ordnance exceeds the U.S. Navy's by a factor of three. U.S. regional partners are important, but add little to our collective ASCM capability since they are equipped largely with Exocets, the same RGM-84s as the U.S. Navy's (or older), and, ironically, China's export C-802s—all of which can be generalized as being less capable than China's domestic ASCMs.

TABLE 2
USN AND PLAN SURFACE COMBATANTS' ASCM CAPABILITIES

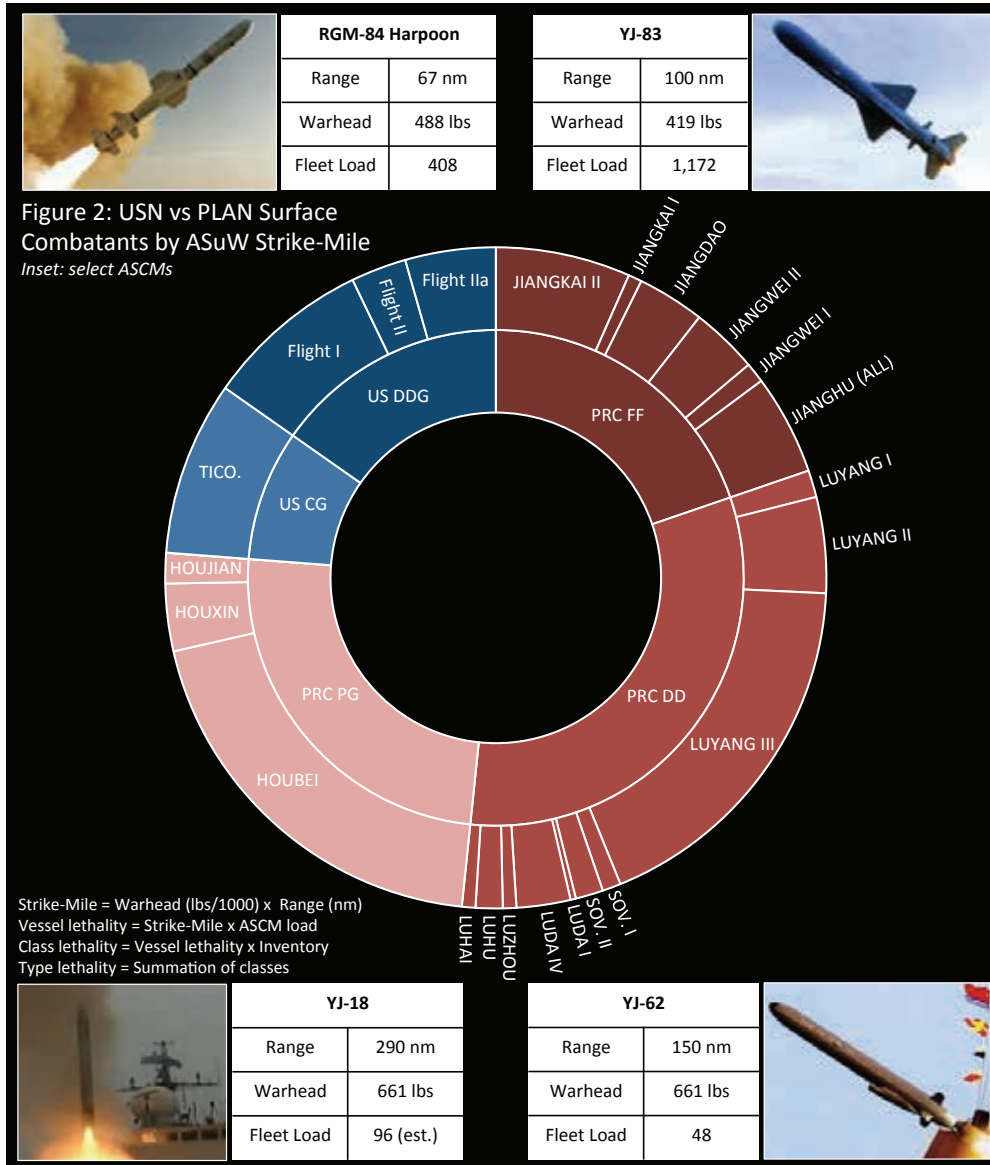
Class	ASCM	Capacity	Range (nm)	Warhead (lbs)
<i>Arleigh Burke</i> Flt I DDG	RGM-84 SM-2*	8 40 (est.)	67 13 (est.)	488 254
<i>Arleigh Burke</i> Flt II DDG	RGM-84 SM-2*	8 40 (est.)	67 13 (est.)	488 254
<i>Arleigh Burke</i> Flt IIa DDG	SM-2*	40 (est.)	13 (est.)	254
<i>Cyclone</i> PC	Griffin	8	5	13
<i>Freedom</i> LCS	None	—	—	—
<i>Independence</i> LCS	None	—	—	—
<i>Ticonderoga</i> CG	RGM-84 SM-2*	8 40 (est.)	67 13 (est.)	488 254
Houbei PTG	YJ-83	8	100	419
Houjian PGG	YJ-83	6	100	419
Houxin PGG	YJ-83	4	100	419
Jiangdao FFL	YJ-83	4	100	419
Jianghu I FF	HY-2	6	43.2	1,131
Jianghu I (upgrade) FF	YJ-83	8	100	419
Jianghu III FF	YJ-83	8	100	419
Jiangkai I FF	YJ-83	8	100	419
Jiangkai II FFG	YJ-83	8	100	419
Jiangwei I FF	YJ-83	6	100	419
Jiangwei II FF	YJ-83	8	100	419
Luda I DD	CSS-N-2	6	22	1,000
Luda IV DD	YJ-83	16	100	419
Luhai DD	YJ-83	16	100	419
Luhu DD	YJ-83	16	100	419
Luyang I DDG	YJ-83	16	100	419
Luyang II DDG	YJ-62	8	150	661
Luyang III DDG	YJ-18	32 (est.)	290	661
Luzhou DDG	YJ-83	8	100	419
<i>Sovremenny</i> I DDG	SS-N-22a	8	87	661
<i>Sovremenny</i> II DDG	SS-N-22b	8	130	661

* The SM-2 is an air-defense missile capable of being employed in a secondary ASuW mode.

TABLE 3
ALPHABETICAL REFERENCE OF USN AND PLAN SURFACE COMBATANTS
WITH VESSEL AND CLASS LETHALITY; SEE COMPANION FIGURE 2

Class	Inventory	Single Vessel Lethality (strike-miles)	Class Lethality (strike-miles)
<i>Arleigh Burke</i> Flt I DDG	21	261.57	5,492.93
<i>Arleigh Burke</i> Flt II DDG	7	261.57	1,830.98
<i>Arleigh Burke</i> Flt IIa DDG	34	132.08	4,490.72
<i>Cyclone</i> PC	13	.52	6.76
<i>Freedom</i> LCS	2	0	0
<i>Independence</i> LCS	2	0	0
<i>Ticonderoga</i> CG	22	261.57	5,754.50
USN Total	101	—	17,575.89
Houbei PTG	60	335.20	20,112.00
Houjian PGG	6	251.40	1,508.40
Houxin PGG	20	167.60	3,352.00
Jiangdao FFL	20	167.60	3,352.00
Jianghu I FF	9	293.16	2,638.40
Jianghu I (upgrade) FF	6	335.20	2,011.20
Jianghu III FF	1	335.20	335.20
Jiangkai I FF	2	335.20	670.40
Jiangkai II FFG	20	335.20	6,704.00
Jiangwei I FF	4	251.40	1,005.60
Jiangwei II FF	10	335.20	3,352.00
Luda I DD	2	132.00	264.00
Luda IV DD	4	670.40	2,681.60
Luhai DD	1	670.40	670.40
Luhu DD	2	670.40	1,340.80
Luyang I DDG	2	670.40	1,340.80
Luyang II DDG	6	793.20	4,759.20
Luyang III DDG	3	6,134.08	18,402.24
Luzhou DDG	2	335.20	670.40
<i>Sovremenny</i> I DDG	2	460.06	920.11
<i>Sovremenny</i> II DDG	2	687.44	1,374.88
PLAN Total	184	—	77,465.63

FIGURE 2



This is not surprising, given the U.S. Navy’s neglect of the ASuW mission following the end of the Cold War. The price we pay for this neglect is a surface fleet doctrinally focused on air defense but relatively incapable of delivering an offensive punch at sea. China, by contrast, has engineered a credible threat that constitutes the maritime cornerstone of its coercive capability in the western Pacific.

DISTRIBUTED LETHALITY IN ACTION

The magnitude of the ASuW mismatch contributed to the U.S. surface navy’s 2015 debut of the distributed lethality concept.⁴ This is a new conceptualization

of old ways, returning the fleet to the premise that every ship should be able to contribute to the ASuW fight. While the United States arguably remains ahead of China in command and control at sea (a gap that China doubtless is closing), the PLAN has been implementing distributed lethality's underlying weapons capability since day one of its modern shipbuilding program. This allows China to contest and exercise tactical sea control by using distributed lethality exactly as the U.S. Navy envisions it: by operating deadly warships independently and in small groups.

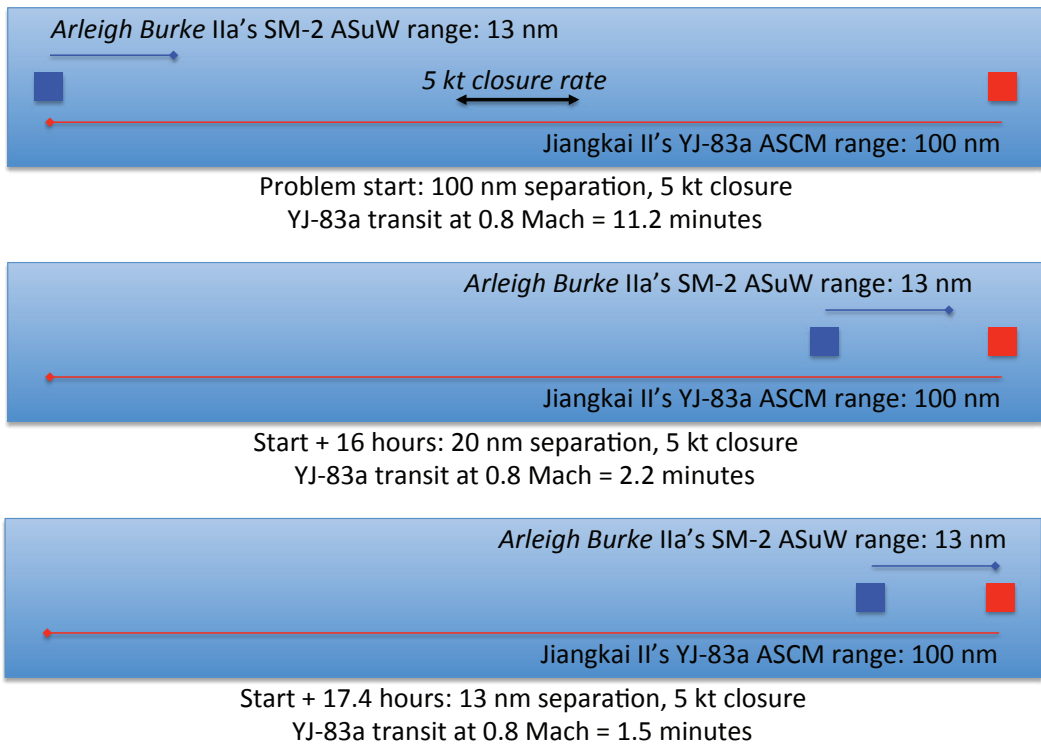
An individual warship's immediate combat influence rests on its ability to deliver ordnance (its strike-mile metric). Translating that to control of "real estate" at sea depends on the range of the warship's ASCMs. A single PLAN combatant carrying the YJ-83 can influence a 200 nm-wide circle that covers 31,400 nm² of sea space. Any vessel in that circle, warship or otherwise, is subject to engagement by the PLAN combatant. This certainly represents a, if not the, coercive force acting on any ship captain, commercial company, or fleet commander who is considering whether to hazard vessels through an opposed environment picketed by PLAN combatants.

Consider a linear one-against-one engagement between the most numerous blue-water ships of the U.S. Navy and the PLAN: an *Arleigh Burke*-class Flight IIa destroyer (DDG) and a Jiangkai II-class frigate. At problem start, the two vessels are 100 nm apart. The *Burke* is making thirty knots toward the Jiangkai, but the Jiangkai's simplest option is to exhaust the *Burke* by making a tactical withdrawal at, say, twenty-five knots, yielding a five-knot closure rate. This puts the U.S. DDG within enemy weapons range for more than seventeen hours before it is able to return fire. The most dangerous time comes around hour 16 when air-defense watchstanders are fatigued, the *Burke* is just outside the SM-2's ASuW range, and the Jiangkai can launch a rapid saturation attack with some or all of its YJ-83s. Even when the *Burke* gets within range, it can engage only by using SM-2s that (1) have not been used already in self-defense against the YJ-83s, and (2) are fired in a secondary ASuW mode.

Unfortunately, the underlying premise of this theoretical engagement is itself a tactical error: sending an air-defense destroyer to run down a surface-warfare frigate. That error precisely illustrates the limitations we have imposed on our fleet commanders and ourselves. The PLAN has gained the initiative by being able to outgun our surface combatants in a kinetic engagement.

Combining three or four PLAN combatants into a surface action group (SAG) magnifies their lethality. The SAG gains maneuver and attack-vector options, complicates its adversary's targeting requirements, and increases the combat environment's ASCM density—the tenets of Vice Admiral Thomas Rowden, Rear Admiral Peter Gumataotao, and Rear Admiral Peter Fanta's distributed lethality.⁵

FIGURE 3
ASCM VULNERABILITIES IN A NOTIONAL 1 VS. 1 ENGAGEMENT BETWEEN A USN
ARLEIGH BURKE FLT IIA DDG AND A PLAN JIANGKAI II FFG



The SAG also gains redundancy and the ability to share tasks—for example, by sectoring engagement responsibilities or delegating air-defense and antisubmarine warfare duties. When it comes to sea control, the commander of a four-ship PLAN SAG can turn the coercive influence of a single vessel into a formation that provides ASCM coverage over the majority of a 400×400 nm box while keeping every component vessel within mutual-support range. Today that means one SAG can distribute enough firepower to cover the Spratly Islands' 120,000 nm^2 .⁶ This indeed represents the sharp edge of China's coercive capability at the tactical level.

ON STRATEGY

The specter of a maritime war, more than any other military threat, is the iron fist beneath the not-so-velvet glove of Chinese policy assertions in the East and South China Seas (the ECS and SCS). China's current military strategy document espouses a policy of "active defense in the new situation," explained as "adherence to the unity [among] strategic defense and operational and tactical offense." The document states more specifically regarding the maritime domain, "The traditional mentality that land outweighs sea must be abandoned."⁷ So as dialogue

covers trade and diplomacy, China's military policy appears to advance a limited-war doctrine focused on the sea. At present, China relies on challengers vividly perceiving the tactical implications of its naval presence to provide Kilcullen's coercive component at the national level.

The strategic cohesion of China's persuasive trade, administrative presence, and coercive capability is particularly visible for policy makers in China's near abroad. For instance, trade with China constituted 14.5 percent (U.S.\$366.5 billion) of total trade for the Association of Southeast Asian Nations (ASEAN) in 2014—ASEAN's largest single-country trading partner. The United States provided more than one-third less, at 8.4 percent, or U.S.\$212.4 billion.⁸ Even Vietnam and the Philippines, which have significant disagreements with China in the SCS, list China as their first- and second-largest partner, respectively, in terms of total trade.⁹ Japan, one of the staunchest U.S. allies in the Pacific, lists China as its largest overall trading partner as well, and has done so since 2008.¹⁰ Yet also in 2014, China "reclaimed" and militarized thousands of acres in the Spratly Islands disputed with the Philippines, used dozens of vessels to escort an oil-prospecting platform through Vietnam's exclusive economic zone (EEZ), and enforced a controversial air-defense identification zone above the ECS west of Japan.

Beyond such gross trade metrics, economic analysis in the Asia-Pacific is intensely complicated, with additional factors to be considered that include foreign direct investment, labor costs, and capital flows. An aggressive policy by Beijing could move China's economic influence from persuasive to coercive, but this likely would result in only a Pyrrhic victory, by smothering regional economies under a mercantilist blanket. However, as China's actions indicate, the country's naval power, especially the lethality of its warships, makes this escalation unnecessary. The fact that PLAN combatants fulfill the military (i.e., coercive) element of Chinese national power means Beijing can keep the setting of its economic throttles squarely on "persuasive."

It is worth noting that although CCG vessels conducted many of China's more questionable presence activities, PLAN surface combatants were often just around the corner. It is reasonable to conclude that these warships take note of CCG practices in relation to their own future operations. Herein lies one subtlety of the PLAN's coercive force at the strategic level: it would be equally reasonable for a government in the region to infer that China one day could replace the front line of CCG vessels with ASCM-armed PLAN ships. That change in presence would increase China's sea control exponentially by allowing it to hold an entire region at risk physically and economically—strong incentives to dissuade any leader from responding strongly.

Nations with deep economic interests at stake but insufficient military force to defend them often feel compelled (1) to seek powerful allies and (2) to make

deeper concessions to avoid conflict. This is especially so in the present situation, in which overwhelming military advantage undergirds China's position. The Philippine government provides one example: it has experienced failure in attempts to enforce the sovereignty of the country's territory (such as the oft-thwarted efforts to resupply RPS *Sierra Madre*) and to use its EEZ (its fishing vessels frequently are bullied out of the area). This is precisely because the Philippine navy cannot compete against the CCG, let alone the PLAN.¹¹ The Philippine government is limited to diplomatic appeals because, in the absence of allies, the PLAN easily could defeat the Philippine navy at sea.

Enter the United States. One anonymous senior official from an SCS state told Robert Kaplan in 2011, "Plan B is the U.S. Navy. . . . An American military presence is needed to countervail China, but we won't vocalize that."¹² The weight of U.S. economic diplomacy and the prestige of our military bring balance to the western Pacific. For now, we are the partner of choice.

The PLAN's ASCMs have narrowed that choice, though, and have gained strategic influence for China by developing a capability precisely where the U.S. Navy is weak. Sea control is vital to the Pacific economy, so when considering who is best able to provide a predictable order in peace or war, "a more capable PLAN" should be read as "a PLAN more capable of defeating the U.S. Navy." This matters immensely to our regional partners as they weigh U.S. commitment and capability against the same traits of the Chinese government, with the added consideration of China's superiority in trade, presence, and proximity.

USING THE RIGHT TOOL

When it comes to sea control, the U.S. Navy by doctrine is centered on aviation and the carrier strike group (CSG). Even the authors of distributed lethality refer to the U.S. surface navy's high-value-asset defense as "our core doctrine."¹³ First and foremost, this doctrine relies on a no-fail premise of carrier survival in combat; the CSG's lethality is contingent on having a platform from which to launch and recover aircraft. Second, a U.S. carrier is an impressive sight, but arguably it is an inefficient and expensive way to provide presence at sea anytime there is no additional concurrent mission, such as combat, strike, or humanitarian assistance. Third, China's Dragon Eye shipborne phased-array radar, HHQ-9 surface-to-air missile, DF-21 antiship ballistic missile, and carrier aviation (the latter under development, with *Liaoning*) all are eroding the U.S. asymmetric advantage of effectively delivering carrier-based ordnance outside enemy weapons range.

The U.S. Navy's submarine force frequently is cited as a powerful, lethal component, and rightly so. But the strength of the silent service lies in its stealth. In what China calls the "informationized environment" of the western Pacific, a stealthy threat contributes little to public narratives, with the phrase "out of sight,

out of mind” applying. Even the current advantages that submarines provide to the United States in surveillance and wartime lethality are shrinking as more-expensive platforms lead to fewer hulls. Our adversaries may take into account the superb lethality of a U.S. submarine, but that vessel is not the right tool for reassuring our partners when it comes to countering the PLAN’s coercive presence.

Whether U.S. or Chinese, a fleet of well-armed surface combatants provides the most economical, resilient, and visible force in the western Pacific. Such vessels are indispensable to sea control—the classic enablers of other activities. The human security of maritime cultures, their use of natural economic resources, and the flow of licit trade require a predictable peacetime environment to thrive. If conflict comes, the mobility, defense, and resupply of ground troops, land-based aviation assets, and ballistic missile defenses need enduring sea control to be effective.

The U.S. Navy cannot let “better” be the enemy of “good” in reinvigorating ASuW capabilities. Implementing distributed lethality, developing ASCM programs, and acquiring affordable small- to medium-sized surface combatants must be a priority for the U.S. Navy (especially in the Pacific) because they do not constitute mere upgrades to an existing ASuW capability—they are a revival from near zero.

Beyond our own, the maritime forces of our Pacific allies are crucial, regardless of our collective ASCM shortfalls. The western Pacific is as familiar to Japan Maritime Self-Defense Force and Royal Australian Navy vessels as the Virginia Capes and Southern California operation areas are to the U.S. Navy. There is no reason the United States and these strategic partners should not collaborate to close the ASCM gap by sharing technology, employing our platforms together, and sharing the burden of development and production costs. After all, history has shown that committed allies are greater than the sum of their parts.

However, our collective ASuW gap is symptomatic of a larger strategic issue: China’s coercive naval force is already a compelling feature of the western Pacific. Our National Security Strategy recognizes China’s “new situation” (its desired normative order) in the SCS, stating, “On territorial disputes, particularly in Asia, we denounce coercion and assertive behaviors that threaten escalation.”¹⁴ The National Military Strategy cites China more explicitly as “adding tension to the Asia-Pacific region,” making claims “inconsistent with international law” and undertaking “aggressive land reclamation efforts that will allow it to position military forces astride vital international sea lanes.”¹⁵ China is succeeding in these contentious actions because it has laid the foundations of competitive control. It has made its trade *persuasive*, if not vital, to regional economies; has

built a capability to assert *administrative* control; and, most importantly, has underwritten all of this with a *coercive* force. Finally, China uses these levers in the diplomatic, informational, military, and economic ecosystem to spin the situation for external consumption.

Fortunately, the United States does not need its own coercive force per se; many nations in the region want to partner with us, and our diplomatic positions comport with the norms of international law. What is needed is the presence of a balanced fleet to support the policies laid out in our strategy documents and to reassure partner nations of our readiness to oppose coercion while they develop their own capabilities. Rebalancing our fleet is not a threat to the sovereignty of any country that conducts itself by the rule of law. It most certainly should be viewed, though, as a potent counter to every country that makes illegitimate claims against our allies and partners.

China and the United States are not yet adversaries—but we are competitors. China’s recent devaluation of the yuan is indicative of long-discussed economic vulnerabilities that may herald a decline in the country’s persuasive trade influence. Exploiting that decline with a strategy that unites U.S. economic diplomacy and a rule-of-law narrative with a balanced maritime force can counter the components of China’s competitive control in the western Pacific. Successful implementation will incline all parties toward a diplomatic solution that averts armed conflict. However, the mismatch between China’s rhetoric and its disregard for international standards does not bode well. And intentions change faster than capabilities.

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