Responding to China's Anti-Access Strategy

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Thank you for the opportunity to share with the Commission my thinking about Chinese and U.S. military capabilities and strategies in the Western Pacific. These are complex, fluid, and potentially dangerous developments that demand attention beyond defense experts.

The following submission draws on work I have done on several issues I am told would be of interest to the Commission. None of these ideas represent the views of any of the institutions with which I am connected.

The Vulnerability Problem and Limits on Defense

Although the United States and China have compatible global interests, they are at loggerheads in East Asia. China's growing military power and its claims over much of the resource-rich South China and East China Seas are causing neighboring states, including U.S. allies, to seek U.S. military backing. Yet, as those states and the Chinese all know, U.S. forces in the region are becoming increasingly vulnerable to China's anti-access capabilities. This creates the prospect of regional instability, loss of U.S. influence, and heightened threat of conflict.

For their part, the Chinese regard U.S. forces in the region as menacing to China and its "core interests." They are, as a consequence, determined to neutralize the threat those forces pose, and they have considerable economic and technological wherewithal to do so. Taking into account demands on U.S. defense resources outside of East Asia (e.g., CENTCOM), China is already spending as much as the United States on military capabilities for East Asia. Moreover, China's investments in technology-based anti-access capabilities offer higher returns, in operational impact, than do corresponding U.S. investments in platform-heavy forces.

Just as geography and economics favor China in this competition, so does technology. China is achieving world-class sophistication in developing and applying the dual-use technologies on which advanced targeting – the key to anti-access capabilities -- depends. In particular, the Chinese are exploiting information and satellite technologies for sensing, networking, and precision-guidance to improve and extend the range of their targeting of U.S. strike platforms with missiles, submarines, and cyber weapons. Because of their strike capabilities and importance in projecting U.S. power in East Asia, U.S. aircraft carriers are in the bulls-eye of Chinese targeting.

Defending carriers, as well as surface combatants, troop carriers and other surface ships, against large numbers of anti-ship missiles and quiet submarines is difficult and expensive. Both submarine warfare and missile warfare – two of China's highest priorities -- are "offense-dominant" in that returns on additional investment in offensive capabilities exceed returns on equivalent investment in defenses against those capabilities. For all the effort the United States has put into ballistic missile defense (BMD) in the last three decades, it remains inadequate or

prohibitively costly against complex saturation attacks by large, sophisticated states like China.[1] Current hit-to-kill BMD may work and be worth the cost against the likes of Iran or North Korea; but China can multiply and improve its missiles (or decoys) more readily than the United States can expand its intercept capacity. Precisely because they know BMD can be overwhelmed by large missile attacks, the Chinese have been building large missile arsenals.

Likewise, anti-submarine warfare (ASW) has made relatively little progress despite huge investment for a simple reason: submarines are hard to find. Just as deep waters with thermal variations frustrate active sonar, passive sonar can be frustrated by quieting submarine machinery. Consequently, non-acoustic technologies continue to receive attention; but results have disappointed. Moreover, sinking or disabling submarines with non-nuclear weapons is problematic. The lesson China has learned from the discouraging story of ASW is that, even against U.S. ASW, the world's best, it makes sense to invest in large numbers of submarines.[2]

Just as U.S. aircraft carriers are becoming vulnerable, so are the land bases in the region that U.S. air forces use. As ranges, numbers and accuracy of Chinese missiles increase, so will the difficulty of defending these bases against them. Moreover, both carrier-based and land-based U.S. aircraft will have to contend with increasingly integrated and extended-range Chinese air defense networks.

U.S. strike platforms, e.g. aircraft carriers, can be placed beyond the reach of enemy sensors, provided their own weapons can still reach their targets. But the reach of Chinese sensors and weapons will continue to increase. It is a matter of time, technology and money – the Chinese have all three -- before China is able to deploy constellations of space-based sensors that can scan beyond the Western Pacific, track targets and guide weapons. China is a growing space power, with plans to launch 10 satellites on average per year, compared to 17 for the United States. As for missiles, the Chinese are already able to achieve intercontinental range, and they can achieve accuracy with geo-positioning technology.

In sum, the survivability of U.S. forces in the Western Pacific is already a problem. Moreover, given existing technologies, it is not feasible and affordable for the United States to reverse the trend of growing vulnerability by defending them better.

Air-Sea Battle[3]

The U.S. Navy and Air Force know this. So they are responding with preparations to counter China's anti-access capabilities under the heading "Air-Sea Battle."[4] The concept seeks

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[1] See Gompert and Saunders, *Paradox of Power*. NDU 2011.

[2] Presumably, the U.S. Navy and U.S. Strategic Command also know that submarines are not about to become detectable and vulnerable, or they would not place the heavy reliance they do on the SSBN leg of the strategic nuclear triad.

[3] See Gompert, David C., and Terrence Kelly, *Foreign Policy*

[4] Schwartz, Norton A. (Gen., USAF), and Jonathan W. Greenert (Adm., USN), "Air-Sea Battle: Promoting Stability in an Era of Uncertainty," *The American Interest,* February 20, 2012.

to "attack-in-depth to disrupt, destroy, and defeat adversary forces" across air, land, sea, space, and cyber domains by "first, disrupting [adversary] C4ISR systems; second, destroying adversary weapons launchers (including aircraft, ships, and missile sites); and finally, defeating the weapons an adversary launches."[5] This is to be accomplished by both physical and cyber attacks on China's anti-access "kill chain." Of course, if such attacks are tardy, China will be able to target and strike U.S. forces. Conversely, the earlier the kill chain is attacked, the more U.S. strike power survives – a feature the Chinese understand. Indeed, maximizing Air-Sea Battle's effectiveness requires attacking China's anti-access forces *before* they can attack U.S. forces.

Also significant is that most of China's kill chain – air and naval bases, missile launchers, air-defense systems, C4ISR centers – is located *in China*. This implies that U.S. forces, per Air-Sea Battle, would not only strike first but would strike targets in the Chinese homeland at the outset of hostilities. As the Chinese would see it, Air-Sea Battle is aimed at rendering China defenseless against follow-on U.S attacks.[6] Furthermore, the Chinese are likely to regard attacks on their territory as crossing a strategic threshold.[7] While they would almost surely not respond with nuclear weapons, they could respond with other strategic options, such as cyber and anti-satellite (ASAT) attacks. It is this combination of the incentive to strike first and the need to strike China itself that lends profound strategic implications to Air-Sea Battle.[8]

There is no reason to think that the Chinese will be resigned to the disadvantageous position into which Air-Sea Battle would put them – for again, they interpret it as a U.S. move to disable their defenses against U.S. strikes.[9] Chinese commentators are already calling for China to intensify its efforts to develop cyber-warfare and ASAT capabilities in order to counter Air-Sea Battle, which depends critically on the computer networks and satellites that connect U.S. C4ISR, platforms, and weapons.[10]

In sum, Air-Sea Battle implies a U.S. threat of early strikes on Chinese territory; would be perceived as – indeed, would be – escalatory; could cause the Chinese to increase investment in and reliance on cyber-warfare and ASAT; and could divert the United States from addressing the fundamental problem of the vulnerability of its forces in the Western Pacific. Air-Sea Battle is an advantageous war-fighting strategy, and provides capabilities that the United States ought to have. However, for it to be the only option the U.S. military would offer the President in the event of confrontation with China would be risky.

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[5] Greenert and Welsh, "Breaking the Kill Chain" (May 16, 2013)

[6] See, for example, Zhao Jinjun, "Objectively Viewing 'Air-Sea Battle,'" *Beijing Zhanyou Bao,* June 30, 2012, p.3.

[7] Such attacks would try to disrupt, destroy and defeat (D3) enemy A2AD capabilities by networked, integrated attacks in depth (NIA). See http://navylive.dodlive.mil/2013/06/03/overview-of-the-air-sea-battle-concept/ for details.

[8] This is also how the Chinese understand it. See, for example, Global Times (on line), ""Not to be Misunderstood – Air-Sea Battle is Officially Directed at China!," January12, 2012 (http://mil.huanqiu.com/Observation/2012-01/2349817.html)

[9] See, for example, Zhao Jinjun, "Objectively Viewing 'Air-Sea Battle,'", as one of several other publicly available documents that indicate such concerns.

[10] Derived from the previously noted Chinese public writings and statements in which they recognize both the dependence of Air-Sea Battle on cyber and space and their need to prepare for it.

Crisis Instability

Stepping back, the growing emphasis in *both* Chinese and U.S. military strategies on early attacks could create conditions in which war becomes more likely. Having been impotent against two U.S. aircraft carriers during the Taiwan crisis of 1996, the PLA has embraced the idea that the best, if not only, way to avoid another humiliation is to be able to strike U.S. forces before they could strike China and its forces. While not seeking war, the Chinese especially dread a prolonged one, in which the full weight of American military strength would surely prevail. So they are crafting plans and fielding capabilities to take out U.S. carriers, air bases, command-and-control networks, and satellites early and swiftly. This is the Chinese military-operational strategy to which Air-Sea Battle responds.

The problem is that the combination of Chinese and U.S. military-operational plans and capabilities portends a textbook case of "crisis instability" in which the price for failing to attack before the opponent does is defeat. The danger lies in the fact that each knows the other is thinking the same way and so has all the more incentive to preempt if war looks imminent -- or probable, or maybe just plausible. China would want to attack U.S. strike forces before losing the kill chain that enables it to do so, and the United States would want to attack the kill chain before it enables China to attack its forces. Given the penalty for attacking second and the incentive to preempt, such logic can turn crisis into war.

Still, it would take some spark to ignite actual hostilities. Moreover, generals and admirals do not make the decision to go to war: presidents do. While there is some comfort in expecting that political leaders on both sides would tamp down tensions and not order preemptive attack, it does not take much imagination to see how circuit-breakers could fail in the heat of a crisis. There are several sources of friction in East Asia that could cause a Sino-American showdown: Chinese enforcement of its air-identification zone or harassment of Japanese vessels in the disputed East China Sea could dictate a U.S. show-of-force; U.S. naval forces could oppose a Chinese attempt to restrict freedom of the seas in the South China Sea; instability in North Korea could bring both China and the United States to consider intervening to get Pyongyang's nuclear weapons under control; China might contest the presence of U.S. ships or aircraft suspected of snooping off its coast; Taiwan could declare independence.

In any such situations, an incident or mistake could transform the logic of avoiding conflict into the logic of avoiding defeat. Even if politicians are cautious, their military advisors and commanders would open their play-books and prepare their forces accordingly, as good officers do. Although U.S. political and military leaders are steeped in the principle and procedures of firm civilian control, not so their Chinese counterparts. The PLA, once under tight Party control, now has a corner on Chinese military expertise, a voice in war-and-peace decisions, and a propensity to take chances to show that China can no longer be pushed around. If in a crisis the PLA advised China's political leaders that U.S. forces were getting ready for war and China's only chance to avoid defeat was to strike early, per the plan, would Beijing say no?

If at the same moment U.S. military commanders advised the President that the PLA was gearing up and could preempt unless U.S. forces acted, would Washington risk the loss of U.S. carriers, air bases, personnel, and credibility by waiting? Thus, current efforts by both sides to

enhance their ability to eliminate threats early and quickly would increase the consequences of allowing the other side to strike first and put a premium on early action. This, in turn, makes it less likely that political leaders could defuse a Sino-U.S. confrontation before it turned violent.

The advent of cyber-warfare could add to the potential instabilities of Chinese and U.S. military-operational planning. Having identified U.S. C4ISR as the pivotal vulnerability of U.S. capabilities and strategy, there is every reason to expect the Chinese to initiate cyber-warfare at the outset of an armed conflict, or even as a precursor. But by the same token, Chinese vulnerability to cyber-warfare is growing as it increases its reliance on networks for targeting and extends the reach of its sensors, weapons, and communications far beyond China. Consequently, the U.S. military may be increasingly inclined to resort to cyber-warfare against the Chinese kill chain; indeed, explanations of Air-Sea Battle make no bones about this.

Although C4ISR networks are presently well protected, it is unclear how long this will remain the case. Firewalls, patching and other network-security measures can provide some protection against lesser state and non-state cyber threats. But against projected offensive cyber-war capabilities and complex attacks of the sort China and the United States may be capable defense could prove inadequate.[11] Moreover, because much IT infrastructure is dual-use, attacks against military networks involve a danger of escalation to general cyber-war, including against dual-purpose networks, critical cyber infrastructure, commercial and civilian systems. Given their network vulnerabilities, the difficulty of defense, and the other side's offensive strength, both the United States and China will have strong aversions to such escalation. This presents a major dilemma for *both*: how to use cyber-warfare against enemy C4ISR in the event of a conflict versus how to minimize the risk of open-ended, even uncontrollable cyber-war. This dilemma demands the exercise of tight political control by both states to avert escalation.[12]

Again, prevailing Chinese military strategy gives the U.S. military a strong incentive to initiate cyber-warfare, and Air-Sea Battle would give the Chinese an equally strong incentive. Indeed, the availability to both sides of cyber-warfare options could aggravate the underlying problem of crisis instability. If each is already poised to strike early if not preemptively for fear that waiting will endanger its forces, there could be a temptation to initiate cyber-warfare. Because it is non-lethal, may be difficult to attribute, and may not be regarded as justification for response with kinetic weapons, cyber-warfare could be viewed as a comparatively low-risk way to degrade the enemy's C4ISR and thus its ability to fight – especially if there is reason to anticipate that the enemy will also resort to cyber-warfare early. The threshold for cyber-warfare could be low; the temptation high. On the assumption that the initiation of cyber-warfare could lead to regular hostilities, it could further increase the danger that crisis could lead to war.

The combination of military strategies that favor early strikes and the low threshold of cyber-warfare has the potential to increase the risk of war that neither the United States nor China would rationally want. If crises are potentially unstable, the probability of war becomes a function of the probability of crises, which we know are not improbable. This makes it critical for political leaders to be (a) thoroughly familiar with military plans and their implications,

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[11] See Gompert and Saunders, *Paradox of Power*

[12] Ibid

including those for cyber-warfare and (b) have in place effective crisis-management communications channels.

Toward a Less Vulnerable U.S. Force

If there is a solution to the vulnerability problem that would improve stability, strengthen deterrence, and serve U.S. interests, it lies in outsmarting China's anti-access strategy and targeting capabilities. Taking full advantage of information networking, the United States could shift toward more distributed, numerous, diverse, elusive, small, long-range, and hard-to-find naval strike forces, while also exploiting two promising capabilities: drones and cyber-warfare (though taking into account the dilemmas concerning cyber-warfare just explained).[13] The particular elements of a less vulnerable U.S. posture could include:

- Submarines
- Long-range strike
- Unmanned systems (air, surface, sub-surface)
- Larger numbers of diverse and smaller missile and aircraft platforms
- Continuously improving, distributed C4ISR networks

If Chinese submarines are a growing challenge to U.S. ASW, Chinese ASW has little hope of finding U.S. submarines. The U.S. Navy is already increasing the role of submarines for extended-range precision strike with conventional ballistic and cruise missiles. How many and what kind of submarines should be made available for this purpose remain important open questions. The way the United States designs and builds them, submarines are very expensive – even more expensive than aircraft carriers per unit of strike payload. The U.S. commitment to nuclear-powered submarines reflects the need for distant and lengthy patrolling. Yet, large numbers of much cheaper non-nuclear-powered submarines – even with shorter "legs" – could be a U.S. conventional-strike option as China improves and extends its anti-surface capabilities.

Hand in hand with hiding U.S. targets is befuddling Chinese targeting with increased complexity. For the U.S. Navy, more numerous, diverse, small, fast, and stealthy strike platforms (and decoys) would be a major challenge for a Chinese targeting system that is designed against a few, big, slow, and unmistakable high-value ones. Unmanned vehicles, vessels, and ship-launched aircraft are less costly and more expendable than manned platforms. In larger numbers, and in combination with various strike platforms, they can complicate Chinese targeting and C4ISR. Because a diverse alternative force could be widely distributed, China's surveillance, tracking, and targeting problem would be much more difficult.

A more survivable U.S. posture along these lines would be neither destabilizing nor escalatory. Rather, by facing China with a more complex targeting challenge, it would discourage Chinese preemptive attack, obviate the need for U.S. preemptive attack, and allow time to defuse a crisis. Because forces that could do this could pose a significant threat without placing a premium on early strikes, and because striking them comprehensively would be very

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[13] A detailed description of what this would mean for the transformation of U.S. Naval forces can be found in *Sea Power and American Interests in the Western Pacific*, David Gompert, RAND, 2013.

difficult and risky for China, they would strengthen deterrence without detracting from stability. Although such forces will take years to field, that is all the more reason to start now.

This is not to say that legacy platforms, including large aircraft carriers, have no future in the Western Pacific. The traditional blue-water fleet will remain potent, relevant, and survivable in most regions, and so will be available for East Asia. Moreover, surface combatants will remain important in expressing U.S. commitment and advancing U.S. interests – roles for which the more elusive capabilities just prescribed are not ideal. But by networking them with less vulnerable platforms, their effectiveness and even their survivability can be enhanced. At issue is the balance between concentrated sea power and distributed sea power. The view here is that the balance should tilt increasingly and as quickly as prudently possible toward the latter.

Maritime Security Cooperation

Given how long it would take the United States to deploy substantially less vulnerable forces to the Western Pacific, and the fact that it cannot meanwhile retreat from this vital region's waters, the United States should also pursue a political alternative—one that engages its regional partners and, ideally, China itself. While it may be a long-shot, the United States should explore the idea of cooperative maritime security in the region, leaving to China whether to participate or not. The current flare-up of tensions in the East and South China Seas may seem to make this idea seem a bit romantic. However, it could also be such tensions could make avenues for cooperation more interesting to all parties.

With the rapid expansion of sea-borne commerce and sea-bed resource extraction that has accompanied globalization, the idea of collective maritime security, first championed by Admiral Mike Mullen, when Chief of Naval Operations, has gained momentum in a number of regions (other than East Asia).[14] Even as the dominant sea power, the United States cannot assure access in every ocean, littoral, and choke-point where it is needed in today's world. Just as the United States is capitalizing on its sea power to mobilize and lead others toward cooperative maritime security elsewhere, it should try to do so in the Western Pacific, where the stakes are highest.

Because East Asia is a virtual archipelago of interdependent economies spanning some of the world's most important seas, it could be argued that no region has a greater need for a collective, inclusive approach to maritime security. Moreover, because the region's sea-faring nations are prosperous and have competent navies, it is reasonable that they should do their fair share in securing waters that are at least as important to them as to the United States.

Accordingly, the United States should propose and pursue an East Asian maritime partnership, inviting to join all states that share its interest in assured access and passage. Such cooperation could be predicated on the norms that disputes should be settled nonviolently and that civilian shipping engaged in peaceful, peacetime trade should not be threatened. These norms could be buttressed by enhanced maritime information-sharing, crisis consultations, joint exercises and operations (e.g., against non-state threats), and measures to avoid incidents.

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[14] The seminal statement of the idea of cooperative, U.S.-led maritime security came in Mullen's speech "A Global Network of Nations for a Free and Secure Maritime Commons," at Naval War College, Newport, R.I., September 2005.

Realistically, resolving the region's complex maritime legal disputes should not be a precondition for creating or joining the partnership; but a pledge to refrain from force in the meantime should be. While such undertakings would not preclude military competition or conflict outright, they could reduce mistrust, mistakes, and mismanaged crises of the sort that are more likely than rational forethought to trigger Sino-U.S. hostilities.

Assuming that China would be asked to be part of it, the question then arises as to what threat would motivate the formation of the grouping. Apart from such external threats, an East Asian Maritime Partnership would, if including China, constitute a classic *collective security* arrangement. Theoretically, collective security is undergirded by an understanding that all participating states will refrain from force and other aggressive conduct. Further, it is enforced by a corresponding understanding that the participants will organize and act against any state that violates the collective security – even if that state had acceded to the grouping. In effect, a collective security arrangement can be transformed into an alliance against any wayward state.

Along this line, China could be invited and urged to join provided certain criteria are met. The matter of criteria thus becomes dispositive. While the United States and its partners would want to attract China's involvement, they would also want to ensure that the goals of regional maritime security are served. To this end, the principal criteria for China (and all others) to enter an East Asian Maritime Partnership might include:
- agreement that outstanding maritime-territorial and resource disputes be settled peacefully, consensually, and through international legal norms or processes;
- rejection of the use of force against commercial and civilian shipping and activities (even in the event of claimed encroachment);
- acceptance that the United States has as much right of access to East Asian waters as any country of the region – for that matter, any country of any region -- does;
- agreement to transparency, crisis consultations, confidence-building, joint exercises, and joint operations; and
- naval cooperation against any state that rejects or violates these norms.

Again, settling maritime disputes should not be a precondition of an East Asian Maritime Security Partnership. Rather, it is intended to prevent these disputes from leading to armed conflict and to afford security for economic activities. Precisely because the scramble for islands, waters, and resources in East Asia is already harmful to both economic development and security, a general pledge to act peacefully and cooperatively ought to be a criterion of a regional collective maritime security regime.

An invitation to join on such terms would leave China with the choice of whether to proceed multilaterally or unilaterally. There are at least three possible results: China could decline and reject the grouping and its criteria as anti-Chinese; it could join but then fail to adhere to the criteria; it could meet the criteria, join, and become a valued partner. The United States should aim for the third possibility. Of course, gaining Chinese acceptance would be a tall order -- the key being to make it plain that the multilateral maritime cooperation in the region will go forward with or without China. A number of China's neighbors – Japan, Australia, Singapore et al -- are developing advanced and capable naval and anti-naval forces. While the

United States should not seek to align them against China, the Chinese should think twice before rejecting a cooperative maritime arrangement.

It might be that Chinese nationalism, weak civilian control of the military, and distrust of American motives would make China's accession to regional maritime cooperation unlikely, at least for now. Chinese ambivalence toward U.S. military-to-military contacts over the years suggests a need for American patience and persistence. The United States has tried repeatedly and earnestly to create channels of communications on security matters in hopes of reducing mistrust and preventing mistakes (e.g., incidents at sea).[15] It has recently upped the ante by proposing to include China in exercises at sea. So far, the only serious maritime cooperation with China has been in countering Somali pirates far from the Western Pacific.

The PLA Navy (PLAN) has been the least interested in the on-again/off-again contacts that do occur. When China has made provocative moves in the East China Sea and South China Sea, or has reacted strongly to what it perceives as provocations by others, the navy is the agent, if not master-mind. Because the PLAN's ambitions depend on treating the United States as an enemy of and threat to China – as German admirals argued Great Britain should be treated in the late 19th Century -- its interest is not in engaging in maritime cooperation but in foiling it.

What, then, would make one think that collaboration in maritime security has *any* chance of success? Clearly, it will not happen under current conditions. But the United States could change conditions by proposing and proceeding to create an East Asian Maritime Partnership with or without China. This would provide the United States with leverage it now lacks. If the Chinese elected to remain apart, despite a sincere invitation to participate, this would provide the United States and its other partners all the more reason to view China as a threat to regional maritime security. Most likely, the Chinese would be divided over the propositions advanced here. They might lobby their neighbors to rebuff the American plan; but in view of regional attitudes about Chinese maritime ambitions, they would not succeed.

It appears a debate has begun in China about whether the last ten years of increased power and forcefulness have produced desirable results. Some astute Chinese believe that China's behavior has caused the region's other states to seek the shelter of U.S. security links. U.S. relations have strengthened with South Korea, Japan, Vietnam, Singapore, Indonesia, Australia, New Zealand, The Philippines, even Burma, while China's only ally, North Korea, is a growing liability. If Chinese fear of isolation were to prevail over faith in intimidation, Chinese civilian leaders might consider regional maritime security cooperation an opportunity.

Whether China participated or not in a cooperative approach, the United States would retain and modernize its naval capabilities for war-fighting, along the lines recommended earlier.

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[15] Historically, the Chinese attitude toward security cooperation has been hesitant, ambivalent, and conditional. After agreeing to contacts, the Chinese then suspend them when in their view China has been dissed, e.g., by U.S. arms sales to Taiwan and support for Chinese dissidents or alleged separatists (e.g., the Dalai Lama). American officials and observers now wonder whether the main effect of U.S. efforts to engage Chinese counterparts has been to hand the Chinese leverage on other issues in the relationship. On the whole, senior U.S. officers have reason to feel that they have gone the extra mile to engage China, only to be frustrated.

In no case should the United States mortgage its ability to defend its interests, its allies, its forces, freedom of the seas, and commercial shipping throughout the region. Conversely, multilateral cooperation with the region's capable sea-faring states would be advantageous for the United States in any case.

Conclusions and Recommendations for Congress

The emerging Sino-U.S. relationship is at once complex, ambiguous and delicate. It combines the promise of cooperation on global security with the prospect of competition and possibility of crisis in the Western Pacific, where China's growing might, dynamism, and ambition are in tension with America's determination to preserve equilibrium. Even in the region, war would be irrational. If it occurred, it would most likely be because of crisis-*mis*management. My concern is that both powers are moving toward military postures and embracing war-fighting concepts, if not plans, that could produce a spiral of incentives to act before the other does. This has been evident for some years in Chinese military writings, and now it could be inferred from American military writings.

The United States should counter Chinese anti-access capabilities in a way that strengthens, not weakens, stability. The key to that is to develop and field the most survivable forces technology permits – less concentrated and less conspicuous than today's easy targets for the Chinese kill chain. Movement in that direction is not likely to come from the U.S. armed services without a strong nudge from their civilian leaders, and at best will take years. Similarly, U.S. policy-makers – and, for that matter, Chinese policy-makers – should insist on reviewing operational plans, including those for cyber-warfare, to ensure that war-winning notions do not make war more likely.

While the odds of inducing China to join in a regional maritime-security partnership may seem long, the United States should consider proposing such cooperation open to but not dependent on Chinese participation. Such cooperation would be beneficial whether or not China agrees to participate; moreover, the Chinese might opt to join if the alternative is isolation.

In sum, the United States has both technological and political options that could strengthen crisis stability, lessen the intensity of military rivalry, reduce the danger of conflict, and yet retain a U.S. advantage in the event of conflict.

With the foregoing in mind, Congress could play a helpful role in improving the ability of the United States to safeguard its interests, reassure its friends, and sustain its stabilizing role in the Western Pacific, while also reducing the risks of conflict and increasing the scope of cooperation with China. The following ideas deserve consideration:

- *In authorizing and appropriating funds for the Department of Defense, scrutinize the survivability of existing and new weapons platforms be explained and favor research and development of inherently less vulnerable ones.* The transition process will be lengthy, given long life-cycles and program inertia; so Congress should be patient but persistent. Congressionally-mandated analysis of the cost-effectiveness of force protection relative to that of inherently less vulnerable forces would be a logical place to start.

- *In questioning senior military officers about strategies and plans, raise the matter of crisis stability – that is of incentives to act first.* In this same spirit, question Administration witnesses as to whether the strategic implications of military-operational plans have been spelled out and are understood. What may be a good war-fighting approach (e.g., Air-Sea Battle) could also heighten Chinese fears that the United States would initiate conflict by striking China itself. Given the growing possibility of crises in the Western Pacific, this deserves early attention. Congress could find it important to request an Administration and/or independent study of the implication of emerging Chinese and U.S. military strategies.
- *Seek to clarify the reasoning and implications of U.S. military plans for cyber-warfare in the context of Sino-U.S. hostilities.* Although the United States must be prepared for cyber-warfare in virtually any 21st-Century conflict, when, how, and to what end it would engage in it are consequential questions. Because this is a formative matter being debated both inside and outside of government, it is important for Congress to become knowledgeable and constructively skeptical.
- *Support the idea of multilateral maritime-security cooperation in the Western Pacific.* To be clear, the U.S. has not resisted Sino-American military cooperation; rather, the problem has been on the Chinese side. The analysis here is that (a) multilateral maritime-security cooperation would be advantageous whether or not China accepts an invitation to participate; (b) the Chinese are more likely to participate if the alternative is to be isolated. Therefore, doubts about a positive Chinese reaction should not discourage a multilateral approach.

Security issues stemming from Sino-U.S. military competition are as complex as they are critical. U.S. policy-makers and military leaders are grappling with them thoughtfully and prudently. I respectfully suggest that these are not matters for dividing branches or parties, but instead for open, frank and patient conversation, informed by rigorous analysis.