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Maritime Strategy

EMC Chair Symposium

Working Papers

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WELCOME FROM THE EMC CHAIR

Dr. Derek S. Reveron
EMC Informationist Chair, U.S. Naval War College

This third maritime-centric EMC Chair Symposium is a follow-up to the release of the 2015 "Cooperative Strategy for 21st century Seapower." The symposium will explore maritime strategy, concepts essential to implement the maritime strategy, and international reactions to it. Participants from DOD, academia, and the policy community will convene in Newport to discuss force development, maritime warfare, role of technology, and humanitarian assistance. The implications are important for understanding the types of missions combatant commanders will execute and the types of equipment and training the sea services must provide to support these missions. This symposium in part fulfills the mission of the EMC Chair to support the Navy's efforts to develop thinking about maritime security. Additional materials can be found at www.usnwc.edu/derekreveron.

In an effort to share expertise with the Fleet and national security community beyond this event, the succeeding pages contain the working papers participants prepared in advance of the symposium. The six panels are:

- **Panel 1: International Perspectives on Maritime Strategy**
  The 2007 maritime strategy and its 2015 update stress the importance of partnering with navies around the world to provide maritime security. The 2015 revision of the Cooperative Strategy devotes an entire section to international partnerships because, "By expanding our network of allies and partners and improving our ability to operate alongside them, naval forces: foster the secure environment essential to an open economic system based on the free flow of goods, protect U.S. natural resources, promote stability, deter conflict, and respond to aggression." The panel investigates this strategic approach to global maritime security, and discusses the effectiveness and limitations of the strategy. By bringing together international officers to reflect on the strategy and global role of the U.S. Navy, panelists will consider the challenges and opportunities for an internationalist maritime strategy.
- **Panel 2: Reflections on Maritime Strategy**
  The panel will review how the U.S. Navy, Marine Corps, and Coast Guard refreshed the 2007 Cooperative Strategy to keep pace with changing times. Panelists will explain the advantages and drawbacks to how the sea services make strategy, draw lessons from the making of the 2007 maritime strategy, and furnish insight into how the services can execute the 2015 strategy in contested surroundings in Eurasia. The panel will shed light on how the U.S. Navy in particular can revise organizational arrangements to put strategy in charge of programming and budgeting--and thus reconnect maritime strategy to larger national purposes.
- **Panel 3: Navy Force Development**
  The 2015 maritime strategy calls for the Navy to possess a wide ranging set of capabilities including: all domain access, deterrence, sea control and power projection, and maritime security. Along with these capabilities, the updated strategy brings forward several concepts, which if implemented successfully, will enable the Navy to leverage partnerships with other services and countries, better prepare its people to implement the strategy in the future, and develop needed capabilities in the "electromagnetic-cyber" environment. This panel will offer perspectives on what force structure elements will be needed to achieve these objectives taking into account the growing threats around the world combined with budget realities.
- **Panel 4: New Perspectives on Maritime Strategy**
  This panel will offer perspectives from young scholars to illustrate how strategic theory interacts with the 21st century's challenges. Serving as a bridge between today's strategy documents and the future, these scholars will offer new perspectives on maritime strategy.

- **Panel 5: Maritime Warfare**
  "A Cooperative Strategy for 21st Century Seapower" declares that "the Sea Services operate in the world's oceans to protect the homeland, build security globally, project power, and win decisively. This ability to maneuver globally on the seas and to prevent others from using the sea against our interests constitutes a strategic advantage for the United States." Yet the ability to maneuver is increasingly challenged as adversaries employ anti-access/area-denial concepts and weapons against the U.S. and its partners. Consequently, new concepts are needed to employ naval forces in denied areas. The aim of this panel is to investigate how the sea services will operationalize the evolving concept of Joint Access and Maneuver in the Global Commons(JAM–GC).
- **Panel 6: Humanitarian Assistance and Disaster Relief**
  Humanitarian organizations, international agencies, and militaries increasingly find themselves faced with complex emergencies and natural disasters in urban settings. Future climate change projections place coastal mega-cities at even greater risk than they are today. The high population density and intricate physical infrastructures contained within urban environments present a multitude of challenges to civilian-military coordination efforts and can significantly hinder effective responses. The U.S. Armed Forces routinely supports the U.S. Agency for International Development in responding to major disasters overseas that threaten the safety and well-being of U.S. citizens, as well as those of other countries. America's Sea Services possess a broad range of rapidly deployable capabilities that have proven critical to life-saving and relief efforts during complex crises, when other responding organizations' capabilities have been exceeded or are unable to provide a comprehensive response given the magnitude of the disaster. This panel will explore the challenges that exist during urban emergencies and possible strategies, concepts, training opportunities, and organizational changes that the U.S. Sea Services can institute to improve the efficacy of civilian-military humanitarian responses in these environments.

Events like these are possible through the generosity of the Naval War College Foundation, the hard work of our Protocol & Events Department, and the commitment to academic excellence by the Department of the Navy and the U.S. Naval War College. While the Naval War College provided the venue for these discussions, the views in this document are those of only the author and do not represent any official position.

KEYNOTE ADDRESS

ADMIRAL BILL HALSEY AND THE UNANTICIPATED STRATEGY: THE SOUTH PACIFIC IN WORLD WAR II

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Before World War II, the United States Navy devoted decades of intellectual capital to War Plan Orange, its masterful imagining of a conflict with Japan. Most of what the Navy bought and much of what it thought from 1920 to 1940 was the product of this creativity. Orange was a staple of the curriculum at the Naval War College, and by 1941 virtually every flag officer eligible for command at sea was a graduate of the Newport school, bequeathing to an entire generation of admirals a sound sensibility of the strategy that guided the nation upon the vast maritime stage of the Pacific Ocean, so much so that Chester Nimitz spoke for many when he opined very little of the actual war surprised him, having had practiced it so often on the gaming board in Newport.

The South Pacific Theater was the one great exception. Before the war, neither Japan nor the United States anticipated the scope of the fighting south of the equator. Japanese success in the war's first months, however, created momentum sufficient to birth embryonic ambitions for Australia and New Zealand among Imperial officials—at the same time Allied supply lines from the United States to Australia became sacrosanct after the war in North Africa had cut Britain's Mediterranean routes to her Oceanic commonwealths. Suddenly, sleepy South Pacific isles, heretofore known only to natives, whalers, and coconut planters, became important enough to spark some of the war's most sustained and brutal combat in what strategists call meeting engagements—battles over areas with little intrinsic value but where opposing forces collide nevertheless. This development would have astounded any respectable pre-war strategist, in either Washington or Tokyo.

From the fall of 1942 to the spring of 1944 most of the Pacific War's fighting took place on, near, or above New Guinea and small South Pacific outcroppings. In the Solomon Islands, first on Guadalcanal, then at New Georgia, and finally along the west coast of Bougainville, the compact geographic tableau demanded triphibious operations, to use a phrase coined by Winston Churchill. Thoroughly integrated air, sea, and ground campaigns, amid some of the globe's most demanding environmental circumstances, confronted officers of every service with a host of challenges not foreseen by Orange. How well they did, both individually and collectively, helped determine the outcome along that edge of the world.

Bill Halsey assumed command of South Pacific forces on 18 October 1942, after Robert Ghormley had failed to rally sufficient morale to fuel the epic struggle for Guadalcanal, then in its tenth week. Within a week, he had committed the bulk of his sea power to the Battle of the Santa Cruz Islands; within a fortnight, he had commandeered every available resource within a thousand miles to succor the First Marine Division defending Henderson Field; and within a month had won the Naval Battle of Guadalcanal, putting the crisis of Guadalcanal behind the Allies.

That was but the start. With a pre-war career devoid of joint operational experience and training, ignorance of fellow officers wearing Army khaki or, in most instances, Marine fatigues, and with even less knowledge of Army, air forces, and Marine fighting ways, Halsey navigated command of a new kind of war. This was a process marked first by hesitation and mistake and later by increasing confidence of the kind history later bestowed upon him. Along the way, he and his command transcribed a steep learning curve across the meaty middle of the war, at a time when the basic outcome was in doubt. At the end of the line, in the spring of 1944 and with the Japanese bastion at Rabaul in effect the Allies' largest prisoner of war camp for Japanese, the war's winner and looser were clear, even as great questions of strategy and operations awaited the Central Pacific drive, the liberation of the Philippines, and a dozen other things.

Across the entire period, War Plan Orange offered little direct guidance. But a generation of practice for a war that was foreseen in basic outline rendered Halsey and his many cohorts well equipped to adjust

when modification was necessary, to endure when endurance was right, and to distinguish between stubbornness and perseverance in ongoing military operations—surely among the trickiest of all strategic attributes. Any history of the any future would fairly brim with conceit, mistake, and imprudence, of course, but confront the future we must—knowing full well of the vanity of the enterprise, of the nature if not the specifics of blunders to come, and of the dangerous flirtation with folly. If predicting the future is a fool's errand, the process of imagining it, shaping it, and inventing it yields to the strategist rich dividends in operational prowess, strategic acumen, political adroitness, and, most of all, mental agility. As Dwight Eisenhower once famously opined, "Plans are nothing. Planning is everything." Without it, we have nothing, or maybe even less.

PANEL 1: INTERNATIONAL PERSPECTIVES ON MARITIME STRATEGY

A COOPERATIVE STRATEGY FOR 21ST CENTURY SEAPOWER, AN INDIAN PERSPECTIVE

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Key documents released by the government of United States outlining its strategy and policy, like the National Security Strategy or single Service Strategies, as also specific Combatant Command Strategies are looked at with the greatest of attention by nations across the world. The intention being to see how the security challenges and the mitigating strategies enunciated in these documents mesh in with a nation's own assessment. From the Indian perspective too, the U.S. National Security Strategy [NSS] (February 2015), the Cooperative Strategy for 21st Century Seapower [CS21] (March 2015) and the "Asia-Pacific Maritime Security Strategy" [APMSS] (July 2015), complemented by statements of senior DoD/U.S. Navy leadership during Senate hearings, or in the public domain, have been viewed in context of the Indian Navy's own "Indian Maritime Security Strategy" released in in October 2015.

The View from India

With its unique maritime geography, India defines its *primary* area of maritime interest as extending from the choke points of Malacca, Sunda and Lombok straits in the East to the Bab-el-Mandeb and Hormuz in the West, including their littoral states, hugging the East coast of Africa and the Bay of Bengal littoral. The *secondary* area extends from the South and East China Seas, to the Mediterranean and the Southern Indian Ocean.

Threats are assessed to emanate from traditional and non-traditional sources. The traditional sources refer to states with organized military capability and resources, which harbor adversarial posture and inimical intent towards India. The likely sources of traditional threat would be from states with a history of aggression against India, and those with continuing disputes or maintaining adversarial postures to India's national interests. At the same time, in recent years there has been a steady rise in non-traditional threats, in occurrence and scale, with the lines at times getting blurred with traditional challenges. This is especially the case where non-traditional threats receive cooperation, support and sponsorship from traditional entities - most prominently 'maritime terrorism'. Other non-traditional maritime security threats include piracy and armed robbery at sea, unregulated activities at sea like trafficking/smuggling, proliferation of private armed security in the maritime domain, Illegal, Unreported and Unregulated (IUU) fishing, and the impact of climate change and natural disasters.

As to be expected, countering the traditional maritime threats will remain the *raison d'etre* of the Indian Navy, particularly the way it is structured, equipped, modernized, trained and deployed. Concurrently, India places utmost importance on its relations with its maritime neighbors based on mutual respect for international law and norms.

Shaping a broader maritime environment to counter the flow of threats and challenges from one area to another requires inclusive and cooperative efforts between the nations concerned and their maritime forces. Hence of equal import are maritime engagements with extra-regional powers, more prominently the U.S., to shape the maritime environment to mitigate traditional concerns and address non-traditional threats for mutual benefit. India's "Look East" policy, now transformed into the "Act East" policy, is another manifestation of this principle.

The View Enunciated by the U.S.

The demise of the Cold War and economic reforms in India in 1992 ushered in a new phase of bilateral relations that have since grown exponentially, and so reflected in the policy statements emanating from both sides. The relationship has bloomed irrespective of the party in power in India. Commencing with the "Next Steps in Strategic Partnership" in 2004, through which the United States and India agreed to

expand cooperation in three specific areas viz. civilian nuclear activities, civilian space programs and high-technology trade, the relationship has graduated to a robust mil-mil relationship with the two navies taking the lead. This was later followed by 2012 Defense Strategic Guidance that emphasized the long-term strategic partnership between the two countries. The maritime cooperation dimension is further embodied in the documents released in 2015.

The 2015 NSS states that the two countries are primed to unlock the potential of the relationship. While stressing the need for collective action to address global risks, in the context of India it states – "We see a strategic convergence with India's Act East policy and our continued implementation of the rebalance to Asia and the Pacific."

CS 21 (2015) issued following the 'rebalance' is a revision of CS 21 (2007). It is different in many ways as brought out in a study undertaken by India's National Maritime Foundation. The revised version is more explicit in naming countries, either as adversaries, or allies and partners. It is also more forthcoming in articulating the 'ways' and 'means', to the extent it is possible in the public domain. Further, inclusion of a Preface by the Secretary of the Navy in the revised version is indicative of an enhanced political interface with the Sea Services. It therefore adds to the credibility that the new strategy, which includes platform numbers and their basing/deployment, is fiscally supportable. The strategy also addresses contemporary challenges of cyberspace operations, electromagnetic warfare and integrated fires.

Of particular interest is that the major regions of the world have been addressed separately, and the articulation 'Indo-Asia-Pacific' is indicative of the Pacific and Indian Oceans being looked as a single entity. The emphasis on a 'cooperative approach' in addressing mutual maritime security challenges is showcased in referring to it as a 'global network of navies'. The strength of the strategy is that there has to be only a willingness to cooperate; there is no commitment and a nation does not have to be part of an alliance. In the revised CS21, nations can 'plug and play' with U.S. forces based on their national interests. Most nations are hesitant to name adversaries and the revised CS 21 absolves them of this dilemma. It may be expected that regional navies would be more forthcoming in exercising with U.S. Navy, and in the process gradually build 'interoperability'. However, it would certainly take a rather long time before partner navies can be integrated into a Carrier Strike Group or an Amphibious Ready Group; to that end the revised strategy is way too ambitious. At the same time, the revised strategy recommendation on promoting cooperation between the Coast Guards in the region is an attractive option as it signals a cooperative activity for delivery of public goods at sea.

The release of the "Asia-Pacific Maritime Security Strategy" seems to complete a full circle in designating the region, after it being articulated by turn as the 'Indo-Pacific" and the CS21 nomenclature 'Indo-Asia-Pacific'. It is not that it is the result of de-hyphenation of the two oceans, as the document also addresses developments in the Indian Ocean. In fact it recommends a three-pronged approach to maritime cooperation with India: maintaining a shared vision on maritime security issues; upgrading the bilateral maritime security partnership; and collaborating to both build regional partnership capacity and improve regional maritime domain awareness.

The document "A Design for Maintaining Maritime Superiority" issued by the current CNO of the U.S. Navy further reinforces the principle of maritime cooperation by calling for prioritizing key international partnerships through information sharing, interoperability initiatives, and combined operations.

In sum, CS21 has a workable approach towards ushering in a global cooperative maritime security mechanism. However, there is a need to exercise patience and immediate results should not be expected. What is important is to move along the intended track.

PANEL 1: INTERNATIONAL PERSPECTIVES ON MARITIME STRATEGY

WESTERN HEMISPHERE PERSPECTIVE ON MARITIME STRATEGY

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There are challenges and opportunities for an international strategy in the Western Hemisphere. The challenges in the hemisphere can be summarized as: Transnational Criminal Organizations (TOC), Illegal Trafficking, Terrorism/Gangs, and Instability in some countries.

Challenges

TOC are in some ways the result of a successful – but illegal – international business, known today as narco-trafficking, and many multiple-related criminal activities. Perhaps their biggest advantage is that they use all of the instruments of power available to them in a comprehensive, coordinated and synchronized long-term strategy, without ethics or respect for human dignity. Their power is growing so much, that many times they are more powerful than law enforcement institutions and in some instances more powerful than nation-states.

Illegal Trafficking includes that of humans, narcotics, weapons, money, and smuggling of goods. These illegal businesses are generating corruption, extortion via kidnapping and assassination, and in some cases reducing governability, as is the case in some countries in Central America. And once narco-traffickers acquire fully-submersible vehicles – which they will – only naval vessels equipped with submarine detection systems will be able to locate them. The connection between law enforcement and security will have to be stronger.

Terrorism/Gangs: Colombia and Peru are still fighting terrorist organizations, but gangs continue to exert influence in Central America, Mexico, Brazil, and other countries in the region.

Instability remains a problem in some countries of Central America which are transit countries for narco-traffickers, and are also affected by TOC and Gangs. Another source of instability is illegal migrations, a lucrative business for TOC which creates refugees and illegal immigrants, not only from the south, but also from Africa and Asia, through South and Central American corridors.

Many times, these illegal activities present threats to the security of countries, and in some cases, turn them into failing states.

Another factor to consider is the fact that China is the first, second or third largest commercial partner to most of the countries in Latin America. For example, Brazil – the largest economy in South America, and 22nd largest in the world – shares 41.2% of its trade with China and only 26.7% with the U.S.

Other challenges to cooperation at sea in the hemisphere there are three main tendencies: first, those that want to have cooperation in the hemisphere without the U.S.; second, those that want to have a good and healthy cooperation with the U.S. based on common challenges and opportunities as partners; and third, those that would like to have freedom of choice on whether or not to cooperate. Sovereignty, politics and ideologies play a large role in these matters.

During the 2007 International Seapower Symposium (ISS-19), at which *A Cooperative Strategy for 21st Century Seapower* (CS-21) was introduced to 104 heads of maritime services around the world, the theme of narco-trafficking in the Americas was presented as a threat to the security of the states in the Americas. Chiefs of Coast Guards showed interest, but not Chiefs of navies. Since then, narco-trafficking has permeated deeply into countries of the region, affecting the stability and security of some. Since 2007, Brazil become the second-largest consumer of cocaine in the world, and is a transit country for cocaine to West Africa. Mexico is now the largest producer of amphetamines in the world, and is the fourth-highest country in homicides per 100,000 inhabitants, after Venezuela, Honduras and El Salvador; these two last countries are cocaine transit countries in the Central American Corridor. And with regard to cocaine-producing countries, Colombia, Peru and Bolivia remain the largest producers in the world.

Opportunities for Cooperation

Since the annual UNITAS exercise started in the 1950's, the navies of the Americas have acquired concepts of interoperability that could be the basis for coalition operations at sea against the common challenges in the Western Hemisphere. After 2007, navies began to recognize that to differing degrees, TOC, narco-trafficking,

and terrorism/gangs, were affecting the stability and security of the region. Today, there is a recognition among navies of the serious threat of these challenges to the security and stability of their countries. Through their respective Congresses, the U.S., Brazil, Mexico, Peru and Colombia (to name a few) have made important changes to their laws, which have advanced legislation to empower the military to successfully combat the threats, both individually or in coordination with other agencies and countries.

From the first to the last page, the 2015 "refresh" of CS-21 (referred to as CS-21R) refers to TOC, illegal trafficking, and terrorism/gangs – as opposed to the National Interests of the U.S. – and all have been declared matters of national security. Because all are common challenges for all countries in the Western Hemisphere, it is a logical starting point for successful cooperation. In accordance with CS-21R, *three* of the five essential functions of the maritime services are related to these challenges: *Sea control*, *power projection and maritime security*, and *all domain access*. But also, CS-21R stresses the idea that "naval forces are stronger when we operate jointly and together with allies and partners… working together in formal and informal networks, we can address the threats to our mutual maritime security interest."[1]

Section II of CS-21R specifically mentions the Western Hemisphere, and the need to "strengthen partnership and capacity … (in order) to protect the homeland and counter illicit trafficking and transnational criminal organizations … (and the three maritime services provide the means, training and engagement to) … increase interoperability with regional partners and strengthen their capacity to interdict transnational criminal organizations."[2] Some countries are already working in this direction with the U.S., particularly Canada, Mexico, Colombia, Peru and Chile, in support of Central American and Caribbean nations. Some regional initiatives are starting to flourish.

Since the 1990s, and through bilateral agreements, maritime countries in the Western Hemisphere have acquired interdiction capabilities and capacities. The individual and bilateral efforts had been partially successful, but TOC, illegal trafficking and terrorists/gangs have not been defeated, and in some instances they had been very successful. *Is this because of the lack of a "Western Hemisphere International and Comprehensive Strategy?"* Perhaps it is time to speed up the tempo and be more effective in combating these threats, just as ADM John M. Richardson is proposing to the U.S. Navy: the continuous evaluation of the changing environment, and "designing" common objectives to be achieved in the short and medium term, which in turn is the basis to create the conditions for "working together."

In order to facilitate "working together," the United Nations *Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances*, as well as the *Convention Against Transnational Organized Crime*, and various Conventions on Terrorism (and other interrelated themes), are great frameworks to empower countries to create the legal structure for cooperation and partnership, because no one country acting alone can be successful. Countries can and need to help one another as each makes advances in the fight against these challenges. But the most important asset needed is *the will* of each country to work together. Not addressing and meeting the challenges to the region will continue to degrade the well-being of millions of human beings, as well as the loss of life. Therefore, countries cannot afford to wait for consensus to attack these threats. We need to find a starting point which at least some the nations of the regions can agree on. Once the train starts moving, other nations will jump on board.

- What are the conditions that will facilitate the gathering of the capacities and capabilities of the countries of the Western Hemisphere to face the challenges outlined above?
- What would an international maritime strategy to address these challenges look like?
- What can be done in the short term to increase both maritime cooperation and interoperability successfully?
- How do we overcome political and ideological differences in order to protect millions of human beings who are affected by the threats on a daily basis?

[1] A Cooperative Strategy for 21st Century Sea Power, p. 2
[2] A Cooperative Strategy for 21st Century Sea Power, p. 18

PANEL 1: INTERNATIONAL PERSPECTIVES ON MARITIME STRATEGY

AVOIDING THE DRAGON'S BREATH AND THE BEAR'S CLAWS

RAdm Christopher Parry, CBE
University of Reading

In the 21st century, the sea remains the pre-eminent medium of access and exchange. The two Eurasian, continental powers, Russia and China, have recognised that the sea, as the engine of globalisation, is vital to their ability to assert their status as great powers. They also are aware that the connections between the sources of raw materials, production centres and markets confer an ability both to exercise control of commerce and to offer the means by which further means of influence and coercion can be incorporated into their diplomacy.

A recent speech by President Xi Jinping expresses these themes:

> We should realize that the 21st century is the century of the sea as people have entered into a period of nautical exploration.
>
> Explorations of the sea have paved the way for China's future development and it is part of China's strategic development that cannot be neglected.
>
> During the process of China developing into a maritime power, the world should join forces to safeguard maritime peace. If there is any maritime hegemonism, terrorism and piracy, the stability of the world's waters cannot be maintained.

He concluded with the telling sentence, 'The traditional mentality that land outweighs sea must be abandoned.

As the strategic level, both Russia and China are challenging the current rules-based international system, with frequent statements about the need to 'de-Americanise' the world and its institutions. At sea, there have been regular attempts to test the limits of toleration in either eroding or overriding international or national entitlements, especially in relation to the UN Convention of the Law of the Sea. These contraventions are consistent with their stated desire to recover sovereign rights across several areas of strategic interest that they claim to have lost when agreements were negotiated when they were in a position of inferiority or weakness. This approach is also expressed as an aversion to the status quo and any cooperative agreement, when it does not suit their interests.

As evidence of their re-discovered interest in the sea, Russia and China are both expanding and modernising their maritime forces to enable them to challenge the status quo at sea, notably with the introduction of anti-access and area denial platforms and systems. These are benchmarked against the capabilities of the naval forces of the free world and represent not only a considerable force-on-force threat, but also inflict a disadvantageous cost ratio on western country and their allies in seeking to defend against them.

However, it is Russia and China's apparent intention and increasing capability to use the sea to dominate and control their immediate neighbourhoods, in place of land-based interventions and immediate coercive pressure that needs to be noticed in the context of the early 21st century.

Russia is busily extending its reach and capability to dominate the Baltic Sea, the Black Sea and the Arctic, with the deployment of increasingly capable denial weapons and systems. Its occupation of Crimea has seen a significant re-fortification of the peninsula, characterised by increasingly capable anti-surface and anti-air weapons, backed up by powerful aviation, surveillance and offshore zone patrol forces. A similar process is under way in the Baltic, with substantial enhancements to the Western Military District and the exclave of Kaliningrad, most notably the use of sophisticated anti-ship missiles and the S-400 anti-air system. The Arctic has also been significantly reinforced.

Meanwhile, it is evident that China has adopted a territorial approach to the South and East China Seas, with the overriding of the claims of its neighbours to economic zones, in gradually extending its grip out to its so-called 10-dash line. The systematic construction of infrastructure and military facilities, as well as the basing of combat aircraft and surveillance systems on the reefs of the Spratly and Paracel groups is evidence of a determined drive to assert sovereign right, enforced by might.

These measures by China and Russia are not related simply to attempts to strengthen their relative advantage in times of tension and war, but in peacetime as well, with the implicit threat of coercion being conveyed to their neighbours. Russia and China appear to be applying anti-access and denial doctrine to routine peacetime activity, as well as their wartime planning. Strategically, if Russia and China can routinely exclude the U.S. and its allies from areas of sea (and the associated airspace) that represent their 'near abroad' they will increase their ability to dominate their regions both commercially and strategically, while weakening the assurances and links between the U.S. and its major allies and treaty partners. This process would have an extremely damaging effect on U.S. assurances to Europe and NATO, on the one hand, and Japan and South Korea, as well as other Asia-Pacific partners that fear China's domination, on the other.

As such the issues at stake in the South and East China Seas represent a significant test case. If these disputes are not resolved peacefully, future naval conflicts in other parts of the world are likely to revolve around and result in a series of 'land grabs' at sea, just as land campaigns in the past were fought to acquire land and assets. However, as long as China and Russia have more to lose than to gain from a breakdown of the international system of law and trade, the current grudging acceptance of the status quo seems set to continue, punctuated by a sequence of minor spats and disputes in the margins of UNCLOS.

Consequently, the first half of the 21st century in the region is likely to witness a series of tests of will and resolve as both the U.S. and its allies and China and Russia probe and assess each other's responses to incidents on the ragged edge between 'territorial' claims and insistence on the freedom of the seas. Incidents are likely to take the form of 'encounter actions' between single vessels or small forces rather than substantial task groups. They are likely to involve the use of unmanned assets to probe the limits of tolerance.

In the areas under threat, countries will probably have to decide on a case-by-case basis whether it is worth risking confrontation and conflict in order to preserve their offshore integrity and the freedom of the seas. Those that have a primary commercial partnership with either Russia or China and a primary strategic relationship with the U.S. will have a particularly difficult dilemma. Those that possess decisive military capability are likely to be able to threaten or use force to insist on their claimed rights or the maintenance of the status quo. Those that cannot deploy forces or call allies in aid will be forced to back down in the face of encroachment or exploitation. Unless the U.S. stands behind them, by speaking softly (or loudly) and carrying a big stick, the 'Melian Dialogue' from the Peloponnesian War will probably apply: 'the strong do as they can and the weak suffer what they must'.

The fundamental issue at stake is whether the UN Convention on the Law of the Sea will remain, by cooperation or enforcement, the basis for the international order at sea. At present, only the U.S. is prepared to challenge the blatant 'land grab' at sea by China and the various attempts at coercion by Russia. Unless the world community is prepared to accept a post-Grotian world in which the freedom of the seas gives way to controlled and exclusive sea-space, other countries will need to be prepared to assist the U.S. in its task of ensuring that the seas of the world remain open to all those who wish to proceed 'on their lawful occasions.'

RISKS, RHETORIC AND REALITY: UNITED STATES MARITIME STRATEGY 2015 AND BEYOND

CDRE Lee Cordner, RAN (Ret.)
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'A Cooperative Strategy for 21st Century Seapower' is a powerful declaratory statement in support of ongoing United States aspirations to remain the most significant global power. It endeavours to achieve this by asserting that the U.S. will maintain both the capacity and will to selectively dominate at and from the sea. The document is written in clear, simple language that emphasizes recurring themes. It addresses several audiences: the international community comprising allies and potential partners, and potential adversaries; internal to the United States, political, government, industry and Department of Defense; and internal to the U.S. 'Sea Services.'

The Strategy could be re-named 'A Hedging Strategy for 21st Century Seapower.' It seeks to assure different audiences about the continued primacy of U.S. seapower in an uncertain global security context, a 'turbulent world' (p. 37), while advocating for domestic support and attempting to assuage everyone's concerns. A range of factors are identified that could combine to put achievement of the maritime strategy 'at increased levels of risk' in a climate of 'fiscal austerity' with a 'smaller force' and a reduced 'footprint in some geographic regions' while facing the possible threat of further 'sequestration' (p.27). This analysis of the latest 'Cooperative Strategy' briefly examines risks and vulnerabilities to delivering against the Strategy, principally from an 'India-Asia-Pacific' (I-A-P) perspective.

The first major, overarching risk that the Strategy raises is that of unrequited expectations. Recognition of the 'rising importance of the Indo-Asia-Pacific region' and the intent to deal with 'A2/AD' capabilities will be reassuring to regional allies and potential partners, and may deter potential adversaries (China). Rising uncertainties in the A-I-P, despite ongoing U.S. reassurances about 'the Pivot', mean that regional states feel compelled to adopt their own hedging strategies, which in turn contribute to rising regional tensions and regional security uncertainty. I-A-P regional states will continue to ask questions that impact regional security, for example, will the U.S.:

- Be able to deliver given the dynamic global security risk context against a backdrop of U.S. fiscal and political uncertainty?
- Have the capacity to address geographically disparate and increasing global security challenges?
- Have the political will and acumen to apply effective maritime force in a complex, diverse and increasingly competitive international scene?

A second major risk arises from continuation of the earlier '1000-ship navy' theme, now described as an aspirational 'global network of navies' (pp. 1 & 3). While the rhetoric is heartening to 'long-standing allies' (p. 1) and perhaps to some potential partners in the A-I-P, the actuality of achieving this is challenging. Admiral Greenert's glib statement that 'All it takes is a willingness to cooperate… anyone can plug-and-play' (p.5) trivialises practical factors including, for example: technological connectivity, protocols and information security; doctrinal and tactical incoherencies; equipment and logistic incompatibilities; language, ideological and cultural differences; and political factors. Very few navies have the capability to effectively 'plug and play' with the USN in a high-end warfighting context, while some others would be more interoperable with the U.S. Coast Guard. For countries that have formal security alliances with the U.S., like Thailand, cooperation can be significantly constrained by political factors; in this case the U.S. 1961 Foreign Assistance Act that restricts levels of military cooperation with countries under military control. Even when the national interests of nations that commit to maritime security operations significantly converge, for example, anti-piracy operations off the Horn of Africa, the real levels of cooperation with U.S. forces from many navies can be minimal.

There is a greater risk that translates into a significant vulnerability arising from the 'global network of navies' concept. Countries like Australia, with formal U.S. alliances along with others are prone to constrain investment in naval capabilities based upon a premise that the U.S. will come to their assistance

if necessary. This may prove delusional if the U.S. is stretched and engaged elsewhere and if political realities prevail. Further, there is a collective security risk if the Strategy is to some extent reliant upon an unrealistic expectation that others will provide ready and capable forces to support the U.S., which could lead the U.S. government to invest less in maritime forces. A related risk is achieving high levels of mutual trust required for effective combined and joint operations inherent in 'a deeper cooperative relationship with our allies and partners and a greater emphasis upon Joint Force interdependence' (p. 8).

A third risk in the Strategy concerns the numbers of platforms and capabilities of the U.S. Sea Services and the stretch challenges of attempting to deliver against multiple commitments, including potentially concurrent operations. The Strategy advises that there will be 'more than 300 ships and a forward presence of about 120 ships by 2020' (p. 9). It further advises that the I-A-P will have 'approximately 60 percent of Navy ships and aircraft' based in the region by 2020, which equates to around 72 platforms. Presence in the Middle East will increase 'from 30 ships today to about 40 in 2020' (p. 13): is the Middle East part of the I-AP? If so, that leaves around 30 platforms for the rest of the I-A-P and if not the combined commitment is around 110 of 120 forward deployed platforms globally. This leaves little to reassure 'vital' NATO and European allies (p.14), provide 'naval presence in Africa with adaptive force packages' (p.16), and to 'strengthen partnerships and capacity in the Western Hemisphere' (p.18). The U.S. Coast Guard will support the USN in meeting some of these commitments and the inherent flexibility, agility and readiness of U.S. Sea Forces (p. 28) will mitigate some of these risks.

Fourthly, there is an operational achievability risk presented with priority placed upon the new 'essential function' of 'all domain access' (pp. 19-22, 31-34) designed to counter the rising A2DA threat posed by China (and perhaps Russia, although not mentioned). In essence, this concept requires a combination of other 'essential functions' like sea control and power projection, including the 'ability of a nation to apply all… of its elements of national power' (p. 24). Joint Force interdependence with the U.S. Air Force and Army will be a vital factor, which is mentioned briefly in the Strategy (p. 28) although there is scant detail on how this component of the Strategy will be achieved.

The final risk addressed here is funding and related U.S. political commitment. Fiscal concerns are highlighted in the Strategy (pp. 27 & 37). Implementing any strategy is heavily dependent upon access to resources; this will remain a critical vulnerability. Similarly, the U.S. polity with its peculiar checks and balances, including an impending Presidential election, presents both opportunities and uncertainties that could either enhance or reduce prospects of delivering against the Strategy.

Although there are risks and vulnerabilities including others not addressed here, 'A Cooperative Strategy for 21st Century Seapower' is an important aspirational and declaratory statement of U.S. intent to remain the leading global maritime power. The Strategy sends a powerful message to its several audiences who will variously embrace, support and react. Achieving effective networks of navies is a vital aspect of the Strategy for the A-I-P region. It will require high levels of commitment by the U.S. and the region to deliver tangible regional security enhancements: the rhetoric and the reality will need to coincide.

Panel 2: Reflections on Maritime Strategy

Reflections on the 2007 Maritime Strategy and the Future of Maritime Thinking in the U.S. Navy

CAPT Peter D. Haynes, U.S. Navy
U.S. Special Operations Command

The 2007 Maritime Strategy is a bifurcated document, one that reveals tensions between its halves—the first of which provides the "why" (i.e., the purpose of U.S. maritime forces) and the second addresses "how" the strategy will be operationalized. Each represents a different strategic approach, only one of which can be seen in the 2015 version.

The "why" represents the thinking of the CNO that commissioned it, Admiral Mike Mullen and his deputy CNO for Operations, Plans and Strategy, Vice Admiral John Morgan. In 2006, Mullen had come to the Naval War College and called for a new maritime strategy. "I am here to challenge you," he noted, "First, to rid yourselves of the old notion—held by so many for so long—that maritime strategy exists solely to fight and win wars at sea, and the rest will take care of itself. In a globalized…world the rest matters a lot."

One would be hard pressed to find a comment by a CNO that was more damning of the Navy's narrow worldview. To Mullen and Morgan, the Navy had for far too long understood its purpose in terms of warfighting. The Navy had embraced the battle-centric Mahan, and ignored the system-centric Mahan and, as a consequence, the Navy had neglected the full range of economic and political effects that American seapower can achieve, particularly in an era of globalization.

Another consequence was that the Navy squandered opportunities to form meaningful arguments in relation to competing forms of U.S. military power—the Air Force and Army, who, unlike the U.S. maritime services, did not have a preeminent role in sustaining the U.S. political and economic system and underwriting the political, commercial, and security conditions necessary for the prosperity of the United States and its key partners.

After all, a maritime strategy—in war or peace—has always been more directly concerned with the relationship between the state and global markets than those associated with land or air power, a statement as true of the Age of Sail as it is today.

The "why" half acknowledged that a maritime strategy was well-suited to the interests of a state whose prosperity and security interests have always been linked to and depended upon the vitality of the world economy, and to the free markets, open societies, and democratic politics that have (so far) accompanied sustained economic success.

If the first half promised a radical shift in the Navy's strategic outlook, the second, more pragmatic "how" half promised the opposite.

The "how" half represented the operationally inclined thinking of the new CNO, Admiral Gary Roughead, who fundamentally changed the section before signing the document. It reflected the limitations imposed by the need to find consensus between the Navy's "maritime-systemic" admirals and the "warfighting" admirals, and the realities of rationalizing the Navy and Marine Corps in ways that would derive fiscal support, the most proven of which was to do so in terms of warfighting, which what the second half essentially did.

In the end, Mullen and Morgan got their maritime strategy (or at least, in retrospect, a maritime strategic outlook), but how the 2007 Maritime Strategy would be implemented and resourced ultimately accorded more with the preferences of warfighters like Admiral John Nathman and Secretary of the Navy Donald Winter.

By itself, the 2007 version implied that while the *ends* of U.S. naval strategy had changed fundamentally, with the adoption of the goal to protect and enable the system, the *means* would not be

altered—and those means were all about warfighting. Although the *ways* in which those means were to be used promised to change, there is little indication that they have.

In what was a brilliant fusing by Bryan McGrath of the deeply held beliefs of the Navy's two factions, the 2007 version was a hybrid strategy that essentially stated that the best way to protect and maintain the system was to focus on deterring great-power wars from starting in the first place, and then from escalating to the point where they threatened global stability or, in the case of the First World War, the system itself.

The 2015 version aimed to redress the most noted faults of the 2007 version—the lack of detail of "how" the three services will be designed, organized, and employed, in which case it did in a thorough and pragmatic fashion. The new version framed the maritime services' purpose on what Geoff Till calls "a more muscular emphasis" not on defending the *system*, but defending the *nation*. The "why" was in terms of operational-level requirements associated with the need for forward presence, access and cyber challenges, the pivot to East Asia, and the functions of deterrence, sea control, power projection, maritime security, and all-domain access.

So, if one were looking for an expansion of maritime thought in the 2015 version, and, specifically, how U.S. maritime forces would enable the system and bring about the full range of economic and political effects that American seapower can achieve in war or peace, one would be disappointed.

One might wonder if that absence and the 2015 version's embracing of the 2007 version's warfighting logic signals a return of maritime ideas to the margins of consideration, the victim of the latter's inability to secure the funds for a large, globally deployed fleet.

If the 2007 version argues that the purpose of the U.S. maritime services should not be seen in terms of the *threats* to the United States, but in light of the relationship between the United States and its *system*, then the maritime services, with the 2015 version, seem poised to argue the opposite, and with it, presumably, the assumption that "the rest will take care of itself."

If one has doubts as to the future of maritime—as opposed to naval—thinking in the Navy, Jim Holmes and Toshi Yoshihara remind us that one should have no such doubts on the part of the world's most avid students of Mahan—the Chinese, who are, at this minute, exploring how to derive the full range of economic and political effects that Chinese seapower can achieve in war, peace, and the widening and no-less consequential space between war and peace.

Panel 2: Reflections on Maritime Strategy

Developing Maritime Strategy

Mr. Bryan McGrath
The FerryBridge Group

John Maynard Keynes is often quoted as saying something to the effect of "When the facts change, I change my opinion. What do you do, Sir?" It is unclear whether Keynes actually uttered these words, but they serve as a reasonable starting point for my role on this panel.

In December of 2009, it occurred to me that the facts had indeed changed, the facts associated with and accounted for in the 2007 Maritime Strategy, with which I was generally associated as team lead and lead author. Consequently, I took to the blogosphere to describe how my opinion had changed in a piece on Information Dissemination entitled "Scrap the Maritime Strategy?" . In it and subsequent exchanges elsewhere, I made the case that the financial crisis that hit a year after the Maritime Strategy was released--along with China's increasingly more aggressive stance in the South China Sea and Russia's aggression in Georgia—had created a set of circumstances in which the fundamental assumptions underpinning the strategy were now overcome by events. Believing as I did from the beginning, that the strategy should be periodically reviewed and updated, I felt the time was ripe to do so.

I continued to maintain this position over the course of the next two years, and to it, I added a few additional considerations also born of events. First, I believed that we were entering a new era of great power contention, and that the country generally and the Navy specifically, needed to recognize this—strategically. Second, the notion of a more integrated version of American Seapower began to arise, in no small measure from the Marine Corps concept of "Single Naval Battle", which seems to have been consigned to ash heap of history, but which I believed was a superb notion for the provision of economical and efficient conventional deterrence forces throughout much of the world that mattered to us.

In the fall of 2011, a newly announced CNO—Admiral Greenert—asked me to brief his transition team on two specific items. The first was process. He wanted me to go over how we organized and staffed for success in 2007, and what some of the challenges were. Secondly, he asked me to opine on how the 2007 document should change to reflect the new strategic environment. It was this second tasking that I relished, and here are the main points of what I told them:

- The new document should explain why we need a strong, globally deployed Navy, and it should clearly identify the threats to our nation that such a Navy mitigates.
- After clearly identifying the threats, it should clearly articulate how it will respond.
- It should return to a three-hub construct (Mediterranean/Europe, Arabian Gulf/Indian Ocean, Western Pacific)
- It should reference a classified companion document.
- It should embrace true integration between the Navy and the Marine Corps, not cooperation, nor coordination, nor interoperability, but true integration.
- It should make a coherent argument for supporting an industrial base sufficient not only for present needs but also for potential expansion.

I concluded that presentation with the following words: "The framers of the updated Maritime Strategy have a unique opportunity, and that is the chance to influence Obama Administration thinking going into an election year. To that end, the document should be more specific, less aspirational and narrative-based, and more hard-edged than its predecessor. Such an approach would create a coherent strategic predicate for shifting resources within the Department of Defense to adequately fund required naval capability and capacity."

Much to my chagrin and the disappointment of many others, the "refresh" of the 2007 strategy—which I called for in December 2009 and which was discussed in detail in the fall 2011 CNO Transition Team—

did not appear until the beginning of last year (2015). Its development process bore little resemblance to the 2007 effort which, while I considered it to be cumbersome and bureaucratic at times, moved along with alacrity when compared to the 2015 version. Additionally, the time it took to get the document out resulted in team turnover, and the many iterations of the document showed consistent inconsistency of authorship. Along the way, I was asked at various times to provide my input—as were a number of others in this room.

When the document emerged, my friend and colleague Bryan Clark and I put out our thoughts in a post at War on the Rocks. The main points we made were the following:

- The strategy does not sufficiently explain the role and application of American Seapower in an era of increasing great power competition.
- The strategy establishes "all domain access" as a new function for the maritime services and suggests it is their most important contribution to joint warfare, but the position of all domain access in the strategy's functional hierarchy is not clear.
- The new strategy does not address is the need for a robust naval and maritime industrial base.

What have I learned now from nearly eight years of working closely on Maritime Strategy, both as a maker of it and as a critic?

- CNO Level interest and involvement is key. We had it in 2007, they did not in 2015.
- Make a plan, set milestones, meet them.
- Maritime Strategy must not only describe what is, it should describe what could be. It should not be afraid to put upward pressure on national policy.
- Maritime Strategy must not be deaf to Joint capabilities, but its job is not to shill for them. Maritime Strategy must describe the benefits conferred by Seapower.
- We have missed opportunities in two straight maritime strategies to make the case for a viable naval industrial base, and this is unfortunate. At the level of true strategy, there is little more important.

I believe the 2015 strategy was a solid effort, but my support for it has diminished since its release. At the very least, the Department of the Navy should immediately begin to work on a classified strategy for American Seapower in an age of great power contention. We are well aware of what the table stakes are for great power dynamics, yet we seem unprepared to prepare for them. Some of this may be political, a sense of not wishing to get in front of civilian leadership. But it is within the civilian leadership that these ideas must take hold if effective strategy is to influence acquisition, planning, and operations.

PANEL 2: REFLECTIONS ON MARITIME STRATEGY

A FLEET PERSPECTIVE ON THE MARITIME STRATEGY

CDR Andrea H. Cameron, U.S. Navy
U.S. Naval War College

One of the key benefits of the strategy was the deliberate, more specific integration of the sea services in this document. Throughout the three years of staffing, the document had been thoroughly processed through the bureaucracy that there is not much in it to object to on its face. The exercise of staffing the strategy is team-building in itself and the promulgation of it gives that more unified perspective to the members of the sea services. It connected the high end of the conflict spectrum activities of the USN and USMC to the low end and constabulary missions of the USCG. Further, the return to a more threat-based vision reflects the worse-case scenario business that we are in. Overall, the strategy was perceived as an improvement over the 2007 strategy.

Content

With respect to the content of the strategy, there were changes that caught attention. First and foremost, the strategy is one of total access with the primary objective being the ability to go anywhere and do anything. This is not new necessarily, it replaced "full spectrum dominance" in the 1990s. Not only was all domain access newly identified, it was listed first among the five functions, appearing to rank over and above the standard naval functions of deterrence, sea control, power projection, and maritime security. One could even see all-domain access as a derivative of the historic functions of sea control or power projection without a need for calling it out specifically. The appearance of preeminence reflects the more threat-based thinking rather than the more systemic approach embedded in the 2007 strategy.

Second, one could ask: what happened to the systemic approach of the 2007 strategy? In this strategy the Navy played a much broader with protecting the liberal world order, guarding the global sea-based trading system, and utilizing the hard power assets to show both hard and soft power effects. In fact, the inclusion of humanitarian assistance/disaster relief in 2007 marked a strategic shift showing that military assets for soft power missions could produce strategically superior outcomes. The loss of this perspective questions whether the strategy is actually strategic enough. And while it may play better in Congress who funds the services, its threat-based approach simultaneously sends messages of reassurance and concern rippling throughout the world.

One final comment on content, this strategy focuses on state and non-state actors as threats. The potential threats to the future world include a variety of other concerns like climate change, population migration, urbanization, pandemics, transnational crime, and resource competition. One major criticism is what cannot be said in an unclassified document regarding regional assessments and capability development. While this is managed through classified addendums, it is not broadly available information to the fleet and leaves large gaps in overall understanding of what it might mean to them operationally, tactically, or personally.

If the national strategy remains sustaining the world order, then inevitably, the military will play some role as an instrument of national power in addressing these concerns. This new strategy does little to plan for these inevitable events.

Operational Support

I do not do the fleet justice without mentioning the connection of the "we can do it all" strategy with the operational tempo that rides on the back of the ships and Sailors. Using data from the CNO's 2016 Posture Statement to Congress, since 2013, eight carrier strike groups, four amphibious readiness groups, and twelve destroyers have deployed for eight months or longer. The escalation of optempo, complexity of missions, and unpredictability of funding wreaks havoc among readiness, morale, maintenance, and

modernization. To quote the CNO: "the gap between our responsibilities and our funding levels represents risk -- risk of Sailors' lives lost, of a weakened deterrent, of a slower response to crisis or conflict, of greater financial cost, of uncertainty for our international partners -- all of which affect the security and prosperity of America." The strategy is challenging to fulfill operationally.

The Navy is struggling to balance the requirements placed upon it with the resources (platforms, personnel, funding) available to complete the mission. The Navy has made operational changes trying to accommodate requirements of the strategy and the nation, but perhaps not meet them all. One example is shifting from a combatant command (CCMD) demand driven model for assets to a supply driven availability model. This causes friction between the CCMDs and the naval service and leaves gaps in carrier strike group availability that will need to be covered by the joint services. To date, this change has been reinforced with the support of the Joint Chiefs of Staff. Along with this is the revised Optimized Fleet Response Plan (OFRP). This three-year cycle ties the ships in the carrier strike groups together for scheduling, maintenance, training, and deployments. This more predictable schedule is to maximize the employability of available force capacity and keeps ships just returned from deployment in a surge capacity during a post-deployment sustainment phase. The benefits include predictable scheduling, synchronization of modernization efforts within the strike group, and strike group cohesion, but it also has its drawbacks. It creates peaks and valleys for maintenance and training facilities, which may not be supportable. Equally important, the revised ship schedule does not match up with the aviation schedule of the carrier air wings. The post-deployment sustainment phase is largely unfunded—meaning squadrons lose their flight qualifications and even if the ship is ready to surge, its ability to be fully operational degrades significantly within months of returning from deployment. For the foreseeable future the air wings and the strike groups will not be able to maintain the same schedule. While the OFRP is a significant step forward in balancing the operational needs of the CCMDs with the long term sustainability of the Naval force, the full feasibility of it remains to be seen.

Considering this information, does the new operational structure support the overall strategy? One thing in its favor is that something is finally being done to try to address the phenomenal operational tempo stressing the fleet. However, the foundation of forward presence in the strategy is about giving more options to the President in times of crisis and the operational structure of the new system may limit the options.

Endurability

The sign of a good strategy is the endurability of it. In favor of the threat-based approach, the strategy remains valid until the threats change. However, it overlooks several other factors that could potentially impact the long-term usefulness of the strategy. Internal to the force, the ways and means, operational concepts, priorities, or force structure, will all play a role in the ongoing validity. Also, listing ship counts was a controversial addition to the strategy. While it sets a benchmark, it is something that challenges the endurability of the strategy. Externally, the strategy can be upended with political turnover, differences with higher leadership within the DoD, budget cuts, programming, and acquisition. Things are changing fast in the domestic and global environment and it is very possible that the sea services will have to write another strategy sooner than later.

PANEL 2: REFLECTIONS ON MARITIME STRATEGY

REFLECTIONS ON U.S. NAVAL STRATEGY BEFORE 2007

Mr. Peter M. Swartz
CNA

In 2005, newly-installed CNO Admiral Mike Mullen charged his Deputy Chief of Naval Operations with coming up with a new "maritime strategy." The result, after two years of intensive and multi-faceted activity, was an unclassified public document -- *A Cooperative Strategy for 21st Century Seapower* -- published in October 2007. In 2011, newly-installed CNO Admiral Jon Greenert called for a "refresh" of that document, and the result was a new unclassified edition subtitled "Forward, Engaged, and Ready," published one year ago. These documents will be discussed by my colleagues on this panel, and hopefully by many of you.

But where did the idea that the Navy needed such a "strategy" come from? And what issues were raised in the past that can shed light on recent and future efforts to develop naval or maritime strategy? That's what I'm going to discuss, by giving a few examples. (For more detail, see www.cna.org/research/capstone-strategy-series.)

Modern efforts to codify U.S. naval strategic thinking started in 1970, with a classified document drawn up by CNO Admiral Elmo Zumwalt, Jr. His *Project SIXTY* posited—and prioritized—four kinds of capabilities of the Navy, later described and popularized by Vice Admiral Stansfield Turner as four "missions:" "strategic deterrence," "sea control," "projection of power ashore," and "naval presence." The Zumwalt-Turner thesis was that the Navy was coming off an era that had favored power projection (e.g., against North Vietnam) and had entered one that required more emphasis on sea control, given a rapidly building global Soviet naval challenge.

Zumwalt also introduced the discussion of presence as a major U.S. naval capability: in part because that was what the Navy actually delivered that was useful to the nation in the absence of war, and in part because he sought the defense establishment to recognize that and provide the Navy with earmarked resources to carry it out. (In this, he and his successors would be disappointed for 20 years). Zumwalt also, given post-Vietnam War U.S. defense budget cuts, strove to develop what he called an appropriate "hi-low mix" of platforms and weapons systems; supplementing the few, the complex and the expensive with the many, the simple, and the cheap. You will doubtless note that these same themes have pre-occupied U.S. naval strategists and policy-makers since, and still do today.

Zumwalt's successor, Admiral James Holloway, did not find this construct useful, however, and modified it significantly in a Naval Warfare Publication called *Strategic Concepts of the U.S. Navy*. An ardent proponent of naval power projection and super-carriers, Holloway had the disagreeable job of serving as CNO during the Carter Administration, which, apart from nuclear deterrence, viewed convoy escort as the Navy's only useful wartime mission, and lacked appreciation of what carriers and other Navy platforms might achieve to deter or fight in a NATO-Warsaw Pact war.

A number of Navy efforts then ensued in the late 1970s to argue and demonstrate the virtues of the Navy and its carriers in such a war, culminating in the initial formulations of *The Maritime Strategy* in 1981. That strategy was at once global, forward, offensive, allied and joint, and favored high-end platforms and weapons needed—for sea control as well as power projection—to go up against the powerful Soviets close to their own shores. *The Maritime Strategy* resonated well with many in the Fleet, and most importantly nested comfortably within the defense policies and strategy of the Reagan Administration and its strategy-minded Secretary of the Navy, John Lehman. The *Maritime Strategy* was conceptualized by the Navy staff's trained and experienced strategy specialists, using guidance from on high and their own understanding of the role of naval strategy and policy and national security. It was then drafted, vetted, promulgated, critiqued, updated and implemented – through fleet exercises, war games, conferences, articles, speeches, CNO Strategic Study Group activities, and advanced fleet training like "Top Gun" and "Strike U." From 1982 on, it also provided the framework for the Navy's annual

internal warfare assessment process for developing the service's program and budget proposals. Some editions were classified and detailed, for internal Navy use; some were more general and unclassified, for public explanation. The Soviets countered with a massive campaign to constrain the U.S. Navy through arms control initiatives, and the later years of the 1980s saw successive CNOs develop strategies to deal with this intense diplomatic offensive.

But then the Soviets went away. And the Navy developed a plethora of successive – and sometimes simultaneous – ideas and documents to try to capture the essence of the Navy's role in the murky post-Cold War environment, and the proper mix among naval capabilities and missions, and "high" and "low" platforms and weapons. One milestone was Secretary of Defense Les Aspin's *Bottom Up Review* of 1993, which allowed the Navy for the first time to justify its budget in part by its peacetime presence activities. The Zumwalt-Turner vision was finally achieved. One result was the provision of funding for an additional carrier battle group in the next defense budget. Another was the promulgation of yet another Navy strategy document: *Forward . . . From the Sea*, by CNO ADM Mike Boorda in 1994. But dollars for presence could also mean robbing Peter – cutting-edge U.S. Navy power projection and/or sea control capabilities – to pay Paul –combatant commander demands for increased forward naval presence, surveillance, and traditional strike operations. This issue is also salient today.

Boorda's immediate successors promulgated Navy "capstone" documents as well, all seeking to refine the balance among these issues, as well as addressing the now increasingly conspicuous views of the U.S. Marine Corps, in the face of an evolving post-Cold War environment. That environment included rapid globalization, unconventional threats abroad, changing American public attitudes, and a federal budget climate uncongenial to significant fleet growth. Before being named CNO, while serving as NATO's Allied Joint Force Commander in Naples, Admiral Mullen realized that the Navy had to adopt – and disseminate -- a new strategic approach, not based on power projection as had been the case throughout the 1990s, but a broader approach that appreciated America's changing role in the world and the unique and vital contributions of the U.S. maritime services—Navy, Marine Corps, and Coast Guard. From that realization came the effort to create *A Cooperative Strategy for 21st Century Seapower*.

PANEL 3: NAVY FORCE DEVELOPMENT

TAILORING A NAVAL FORCE STRUCTURE TO THE EMERGING FUTURE SECURITY ENVIRONMENT

Dr. Henry Hendrix II
Center for a New American Security

The panorama of history is replete with numerous great powers rising, making their mark upon the world and then declining in the face of another rising power. The Egyptians gave way to the Assyrians, and the Assyrians to the Babylonians etc. until the present day when the British Empire gave way to the Soviet and American Cold War and ultimately to a moment of American uni-polarity unlike any other era in history with the possible exception of the Romans. These cycles are well understood by those who choose to look at them, but what is not understood is the technologies that lay behind these rise and fall cycles throughout history.

Great powers tend to rise and persist due to a set of advantages. These might be a an aspect of agrarian reform, or perhaps a system of governance that allows a great accrual of wealth, but rises are almost always accompanied by a particular form of military technology that provides an advantage to the nation who wields in upon the field of battle. The spear gave way to the bow and arrow. This combination gave way to a bowman on a horse in mounted cavalry formations. The phalanx made its debut and then was bested by the maniple formation. The longbow overcame French armor at Agincourt. Sailing ships of the line gave way to steam and steel. Technology marches inexorably on, except where it doesn't, which is often in the great power that was responsible for introducing it.

Great powers who rise on a new technology are become beholden to it, often beyond its useful life. Because new innovations come with a cost, be it economic or cultural, once a great power buys into a new form of military technology, it becomes a sunk cost. Innovation would of necessity require acknowledging that previous technologies had become obsolete and a decision to move in a new direction. History suggests that such acts of agility rarely occure. What is more likely is that a Great Power, having ridden a new technology to the top, will commit to that technology, perhaps even expanding its investment in it. This has the effect of presenting a stable capabilities target for other would be rising powers, allowing them to tailor a new capability that is focused on weaknesses inherit in the current Great Power's military capability, allowing the rising power to ultimately surpass the reigning hegemon.

We see that today across all four of our DoD services. The Army and Air Force each continue to invest in weapons that are evolutionary derivatives of platforms their predecessors in World War II operated despite seven decades of technological progress. The Navy with its ten carrier strike group awaiting orders to proceed to Point Luck prepares to fight the battle of Midway over again. The Marine Corps, which gained a congressional mandate codified in law, maintains a "fleet marine force," prepared to perform an amphibious assault, with all the equipment necessary to perform that mission, despite the fact that the mission has not been executed 65 years. In each of these cases, the United States military has presented a stable target, evolving but not really changing, for rising powers to target.

The Army has increasingly packed more soldiers into tanks, armored personnel carriers, and Humvees. Their enemy adapted armor piercing technologies and asymmetric tactics to kill and disable Americans in their mobile formations. The Air Force found itself facing radars and missiles with increasing range, maneuverability and lethality and responded by building a series of fighters and bombers that were both increasingly difficult to find and increasingly expense to buy, necessitating a decreasing force size that is unable to guarantee either air superiority or access to critical targets. The Navy and Marine Corps similarly have invested in progressively more capable platforms that come with added costs leading to a shrinking fleet and force even as the rest of the world invests in anti-access/area denial weapons designed to hold American naval power projection off beyond its effective range. With its inability to change, the American military has elected obsolescence.

"So what are we to do?" service proponents might ask. Change is the answer. Divorcement from the present reality, standing outside of the accepted paradigm and investing in change.

Recognize that in peace we do not need all high end capabilities to demonstrate American interest and resolve. As the 2007 Cooperative Strategy for 21st Century Seapower said, maintaining peace is at least as important as winning the war. A large number of low capability frigates, perhaps 75-100 of them, are required to service the 19 critical maritime regions of the globe. These frigates can provide maritime security, build partnership capacity, and demonstrate the United States' resolve. Critics might say that these vessels would serve little to no role in a region spanning maritime war, such as that which was fought in the Pacific during the 1941-45 era, and they would be correct. That is not the war we should fight.

If the United States were to go to war again it must leverage the technologies it has, a superb intelligence-reconnaissance complex as well as a precision strike capability unlike any other nation on earth, and combine these with newly emerging capabilities; unmanned and man-machine platforms, directed energy weapons, electro-magnetic and hypersonics to identify, target and destroy the critical center of gravity within the enemy camp. We should banish plans for a long campaign, attriting our way through the enemy's military, population, infrastructure and essential systems to reach the one that really matters, its leadership. Should diplomacy and negotiations fail and circumstances warrant, then attacks on national leadership at hypersonic velocities should be the American way of war.

Such attacks should come from increased numbers of nuclear submarines, perhaps a combination of 100 fast attack and guided missile submarines, as well as hypersonic cruise missile laden long range strike bombers, and perhaps even from the decks of aircraft carriers, provided they rapidly integrate a long ranged, unmanned strike aircraft, capable of spanning the 1500 mile standoff range imposed by recent A2AD weapons.

If the United States does not break with its past and sunk infrastructure force constructs, it condemns itself to a fate as a declining power. If, however, it embraces innovation, either under the label of a Third Offset, or Air-Sea Battle or some other convenient bumper sticker, then it has a chance to revitalize its leadership in the world and once again return to a position wherein it imposes costs upon its enemies, and not the other way around. Such innovation requires bold leadership and clear vision, characteristics our Navy once had in abundance and which I hope it still does.

FIVE COSTS OF MILITARY INNOVATION

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Over the past year, the U.S. Department of Defense has engaged in an effort to reinvigorate the aging and exhausted U.S. military by reassessing and reforming its strategic and tactical priorities. These reforms are far-reaching in nature, ranging from the strategic pivot to Asia, to personnel reforms aimed at creating a more adaptive "force of the future," to investments in new, high-tech war-fighting platforms. A key piece in this suite of changes, and the most significant from an operational standpoint, is DoD's "third offset strategy" — an initiative aimed in part at countering new anti-access area-denial (A2AD) capabilities with a range of new technologies. And as the recent FY2017 budget rollout has illustrated, this reform effort is starting to take shape.

The announcement of the third offset strategy has attracted much attention from within the defense policy community, and has been heralded by many as necessary for the United States to maintain its technological edge. And these efforts will no doubt result in significant benefits for the U.S. military. But this emphasis on innovation is not without its risks, many of which might be overlooked, underestimated, or even ignored in the excitement of a new defense initiative. Indeed, the tendency to equate technological innovation with positive change — perhaps the result of publicized successes in the private sector — often misses the myriad costs and challenges that accompany major overhauls of the kind announced by DoD.

A number of recent articles in WOTR's *Beyond Offset* series have turned to U.S. history to highlight some of the costs that accompanied previous offset strategies, and the challenges that might flow from today's efforts. In addition to revisiting these specific experiences, it may also be beneficial to take a step back to map the landscape more broadly. This article aims to infuse the conversation about military innovation with a realistic sense of the potential pitfalls to this endeavor, so these challenges can be better understood, anticipated, and corrected as the United States develops its future force. Here we identify five major costs to innovation that are important to acknowledge:

1. Effectiveness

Too often overlooked in conversations about innovation, both in the military and elsewhere, is the natural, predictable, and sometimes crippling tradeoff between innovation and effectiveness. In the business literature on innovation, this is often referred to as the explore-exploit dilemma. Put simply, organizations which are good at "exploring" (i.e. innovating), tend to make significant sacrifices in "exploitation" (i.e. everyday production and efficiency). In other words, the very things that make an organization good at innovating — nonhierarchical structures, hands-off management techniques, nontraditional professional development and rewards, etc. — can be liabilities when it comes to consistent execution. The holy grail is thus to balance exploration and exploitation, a feat which only a handful of businesses can claim to have achieved.

In the military, this challenge is doubly problematic. First, in a world of constrained resources, innovation and change in one area can often undermine the military's ability to deliver on other mission sets. It should therefore come as little surprise that investments in the third offset may weaken our ability to successfully carry out other missions, and this trade-off should explicitly be part of the discussion. For example, after a decade of investing in counterinsurgency and unconventional warfare capabilities, the third offset may very well mean that these new skills are left to atrophy as resources move elsewhere.

Second, the explore-exploit tradeoff has costs that are far more consequential in the military than in the private sector. For the private sector, the success and failure of innovation is measured in dollars. For

the military, success and failure is measured in battlefield effectiveness and, sometimes, lives. Thus, while investing in new technologies may leave Google or Amazon strapped for cash, the costs of shifting investment priorities in the defense community are on a different scale entirely. We therefore need to acknowledge and understand where innovation will make us stronger and where it will make us weaker, so we can avoid sending our troops into situations where they are ill-equipped for the task at hand.

2. Vulnerability

Innovations are, by definition, new. This is precisely what makes them so exciting and effective — especially in the military context where surprise can lead to significant battlefield gains.

But for all of the new capabilities that come with innovative technologies and doctrines, we often forget the vulnerabilities that accompany new technologies. Take the Internet, for example. It enables us to undertake crippling cyberattacks against our adversaries, but it also exposes the United States to significant risk.

Similarly, while the push towards unmanned weaponry and greater automation in the defense sector provides the U.S. military with unparalleled intelligence, surveillance, and reconnaissance (ISR), and strike capabilities at low risk to U.S. lives, the increased reliance on satellites required by these platforms creates a new — and often underappreciated — set of challenges. As Jacquelyn Schneider notes, the United States' increasing reliance on cyber capabilities creates a "capability-vulnerability paradox." While U.S. investments in cyber-technologies might allow the military to conduct strikes further away from the battlefield and with greater effectiveness, the increased dependence on satellite relay nodes, intelligence infrastructure, and GPS communication create new opportunities for attack.

In short, new capabilities create new vulnerabilities, and we should not be too sanguine about the risks attached to the high-tech advances envisaged by the third offset. This is especially so in a world where interoperability challenges, jamming, cyberattacks, and counter-stealth technologies are a persistent and growing threat.

3. Financial

As a purely practical matter, the financial costs of innovation should not be lost on the architects of these reforms. After all, there is a reason why many start-ups fail — innovation can be capital- and time-intensive, and there is no guarantee that the product will ultimately prove viable when it makes it to the market. For every successful innovation there are many ideas, prototypes, and alternatives that never make it off of the cutting room floor. And even when they do, long time horizons means that costs can add up.

Those in the defense R&D and procurement communities know this fact all too well. Indeed, the cost overruns associated with developing new military technologies have become par for the course in most major U.S. military acquisitions of recent years, as the lack of truly competitive bidding and tendency toward over-commitment have exploded acquisitions costs. But in addition to the standard reasons for the overruns that often accompany defense acquisitions, the technologies of the third offset will likely involve advanced, proprietary, and even covert technologies, all of which can result in a big price tag and offer little guarantee of long-term utility.

As Stephen Rodriguez highlighted here at *War on the Rocks*, the last attempt at technological offset came with some incredibly expensive budgetary causalities, and there is no reason to think this time will be any different. To be fair, some leaders at DoD are well aware of the financial costs of the third offset, and many will be mitigated by savings accrued from other, more successful innovations. Nevertheless, we should not be naïve about the material costs that this initiative will require.

4. Culture of Hierarchy

There are many reasons we should expect the military to resist major innovation. As James Q. Wilson and Barry Posen have pointed out elsewhere: Organizations are created to minimize uncertainty, change inherently introduces uncertainty, and thus we should not be surprised when organizations resist change. Some of this resistance is unnecessary, and hamstrings the military when it attempts to introduce valuable new technologies. However, it is important to remember that, perhaps more than any other organization in the world, the military relies on a culture of order, discipline, and hierarchy — formalized in the military chain of command — in order to perform its duties well. And so while innovation may be critical in some areas of the military, the benefits of decentralized, independent thinking must always be weighed against the risks of degrading the military hierarchy — a difficult balance to strike for even the most modern militaries.

Of course, challenging hierarchy is not always bad, and innovation on the battlefield can also save lives. Nevertheless, we should not overestimate the value of innovation at the expense of overlooking the critical importance of hierarchy and structure to U.S. military effectiveness.

5. Strategic-Tactical

Perhaps the most understood risk of the innovations that will come with the defense reforms of recent months is the risk of "putting the technology cart before the strategy horse," as Jon Czarnekcki so pithily put it. Indeed, the contributors at War on the Rocks have led the way in assessing how technological innovation absent complementary strategic, doctrinal, and organizational change is both useless and potentially counterproductive to political and national security ends. Technology can enable significant war-fighting gains, but rarely does it induce revolutionary change alone. Military officials are well aware of this, but their civilian bosses often need reminding that investments in technology must accompany investments in training and exercises.

None of these warnings are meant to say that the military should avoid attempts at reform and innovation. Indeed, it is precisely because the U.S. military has found ways to innovate that it has become the most formidable military in the world. The reforms that will be undertaken by the defense community in the coming years will undoubtedly lead to important and significant gains for the U.S. military. But to ignore the risks associated with such an enterprise is analytically lazy and practically dangerous. Instead, by acknowledging, understanding, and anticipating the risks of innovation, the United States will be better placed to counteract these challenges, and better able meet future threats.

PANEL 3: NAVY FORCE DEVELOPMENT

IMPACTS OF THE ROBOTICS AGE ON NAVAL FORCE STRUCTURE PLANNING

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This discussion's theme is that our overly platform-focused naval force structure planning and acquisition system is burdened with so many inhibitors to change that we are ill-prepared to capitalize on the missile and robotics age of warfare. Refocusing our efforts to emphasize the "right side" of an offensive kill chain to deliver kinetic and non-kinetic effects will aid in overcoming these challenges and prioritize our efforts towards identifying where cutting edge technologies can best be applied in naval warfare. The dialog addresses traditional foundations for force structure planning, inhibitors to changing force structure, and how focusing on the packages for platform delivery instead of the platforms will allow us to better leverage new technologies.

Ideally, naval force structure grows from national strategy, national treasury, technology advancement, and potential adversary capabilities to build required ships, aircraft and capabilities. National strategy provides the rationale, purpose, and priority of choices to be made in creating a fleet. National treasure provides both the resources and constraints. New technologies provide opportunities for increasing fleet effectiveness, and may also potentially expose vulnerabilities to fleet survival when adversary capabilities are considered. This is a complex problem with only these four factors. In reality, however, U.S. force structure planning is also challenged by other influences, impactful on planning and budgeting for the fleet's composition. These other pressures inhibit capitalization of new technologies and slow reaction in the face of new challenges.

The most powerful inhibitor is inertia caused by an existing fleet being a large national capital investment with long build and life times. Ships and aircraft cost billions to design, build, and maintain. They require a capital-intensive industry requiring heavy equipment, infrastructure, and a skilled workforce, all generations in the making. The consequence is annual programming and budgeting decisions are marginal in nature. It is the nature of a large fleet to evolve slowly, in lieu of revolutionary changes to its composition.

Since our first six frigates were authorized in 1794, national internal political and economic factors have been another major influence on fleet composition. Illustrated well by Ian Toll in his *Six Frigates: The Epic History of the Founding of the U.S. Navy*, the potential windfalls on local economies when selected to provide force structure generate powerful political pressures on force generation decisions and create the desire for stabilization once those selections are made.

Next, over-compartmentalization in fleet planning, budgeting, building, and maintenance, with large and resource-competing bureaucracies executing these functions, creates a lethargic and inefficient environment for change. Multiple oversight agencies, including Congress, make any decision by one program manager susceptible to over-zealous scrutiny which dis-incentivizes innovation. Agility is lost when the number of stakeholders exceeds the point where responsibility and authority cannot be clearly defined.

Finally, the very nature of a fleet's strategic value engenders conservatism in senior naval leadership when faced with options for change. This is not necessarily an unhealthy view as the loss of the fleet can mean the loss of sea lines of communication and therefore a war. None-the-less, over valuing what worked in the last major maritime war, at the expense of not recognizing technology that changes the conveyance of maritime power, can result in a fleet not prepared to combat an enemy that is not so inhibited.

None of these influences on force structure planning can be lightly dismissed. The danger is that collectively they result in harmful escalation of commitment toward obsolete platforms and only marginal changes in force structure in the face of major technological changes. The result today is a brittle U.S. Fleet that is susceptible to capability surprise.

The United States in not unique in facing these challenges. Historically, major changes to naval force structure have resulted from war and/or great technology leaps. Ramming, row and boarding vessels gave way to the naval cannon and sail; sail to steam; rifled gun and armor to aircraft; aircraft to missiles; and now we are on the dawn of a robotics age. Missiles, robots, and artificial intelligence give the advantage to smaller, many, faster, and more lethal offense capabilities. Our challenge is to not allow restraints on the current force structure planning process to cede these advantages to potential adversaries.

Meeting the 2015 maritime strategic capabilities of all domain access, deterrence, sea control and power projection, and maritime security while constrained by the budget and procurement process, and contested by potential adversaries' growing capabilities, will require new thinking in platforms, weapons, and command and control. Advancement into the robotic age allows us to emphasize options to achieve a desired *tactical* end state which enables our operational and strategic goals. For example, investing in a very "smart" long range autonomous offensive missile that can out-range those of our adversary may permit us to build less-expensive, less well-defended ships from which to launch them thereby making sea control more affordable. Consider a new frigate with helicopter to hunt and armed with long-range missile to kill against today's DDG Flight III without any over-the-horizon missile. Granted, better to have a DDG Flight III armed with the same long-range missile, so long as we can afford sufficient DDGs with these capabilities to meet all of the other strategic capabilities around the world, the most capacity-demanding being maritime security. But our budget constrains us. The message here is not necessarily to favor a frigate over a DDG, but to refocus our investments on less expensive "payloads" delivered, kinetic or cyber, not the more expensive delivery platforms. A stark example is a weapon that has huge maritime influence but no maritime platform, the DF-21. Focusing on offensive payloads also lessens many of the political, economic, and bureaucratic challenges associated with large capital investment platform programs. We are not there yet. In the FY17 DoD President's budget, a bit over 40% of the budget is for aircraft and ships, only 9% for munitions.

This "package focus" first is particularly applicable in the electromagnetic and cyber realm. Inexpensive, deposable UAVs employing radar reflectors or chirp jamming may be better delivery platforms for EM "packages" than an F-18 Growler. In the offense, developing "Left of kill chain" effects against an adversary need not be expensive, but does require synchronization with the movement of actual forces. The desired effects may rely as much on advisory perception as on physical outcomes. The solutions here may be more organizational, training and in the area of concept of employment than force structure additions.

PANEL 3: NAVY FORCE DEVELOPMENT

RETHINKING THE NAVY'S STRATEGIC PRESUMPTIONS AND PLANNING PROCEDURES

Mr. Paul S. Giarra
Global Strategies & Transformation

A One-Ocean Navy?

Strategic planners should challenge the whittled down presumptions and planning of today's navy, which likes to think of itself as a global navy but is headed for relevance in only one ocean. At that, if the Asia-Pacific is the model for thinking about the one-ocean Navy, relevance is not necessarily going to be the same as prevalence.

At best, with every innovative basing scheme and crew-swap program imaginable, current global Navy deployment schedules will be hard pressed to keep more than a single battle group forward deployed in any region *in peacetime*. This is more than a ship count issue, especially when it is fairly obvious that the ship repair base can't keep up even with this force structure when the schedule is disrupted. Every shred of redundancy has been wrung out of the force and the support establishment, apparently based upon presumptions of unchallenged deployments and no operational surges.

To make matters worse, it has been many decades since the U.S. Navy has been challenged as the presumptive guarantor of freedom of the seas. Even ten years ago, there was not another regional navy to challenge this rhetoric. Now, China, Russia, and soon Iran will challenge regionally at least. This rapid threat emergence is reminiscent of the post-Cuban Missile Crisis rise of the Soviet Navy. Even if that were not going to be true, there are many more key maritime straits and crossroads besides the South China Sea that need to be vouchsafed -- from the Mediterranean to the Baltic to the Gulf of Aden -- than the Navy has the force structure to cover. This warranty deficit is not lost on interested observers who have a stake in the outcome on one side or the other.

We should not be willing to accept this regressive outcome as foreordained, not if it is true that as goes the Navy, so goes the Nation. The Navy's strategic presumptions and force planning procedures no longer are adequate.

What Will War At Sea Look Like?

To make matters worse, war at sea is going to be quite different in terms of scope and scale than anything being discussed publicly, which is an imperfect but useful gauge of what is being considered in the classified process. There will be other differences that have to be sorted out, but this issue of scope and scale refers to regional warfare that is going to be much, much more difficult and destructive than anything generally being considered. Furthermore, regional naval warfare also will be very dependent upon the ground components for support in places like China's "Three Seas", the Mediterranean, the Baltic, the North Sea, and the Persian Gulf, while naval forces will have to be able to support the ground component in turn.

Most important, the potential for escalation in maritime conflict is high because that is where our forces will come together, and equally unacceptable: because in an age of generally unconstrained nuclear, cyber, and space warfare, the civilizational risks of escalation are unthinkable. This means that the U.S. navy is going to have to maintain a force structure that is in a forward-leaning operational posture; with overbearing operational capabilities; and with dependable and robust command and control and ISR sufficient to dominate escalation continuously.

The circumstantial backdrop of real war at sea makes the case for this conclusion. As one example, in the Asia-Pacific this would be war against the Chinese Communist Party, which as the progenitor of China's emergence to challenge the status quo – in other words, the rules-based order that was established after World War II but not buttressed since the end of the Cold War – has no room for compromise. Conflict once started will be extremely difficult to control. Second, the maritime democracies are going to have to contend at a minimum with the Three Navies – China, Russia, and Iran – which may not always

operate in close coordination but which will split defenses and at a minimum seriously challenge resources. Third, Navy operational presumptions regarding connectivity and reach may not hold in the face of cyber attacks; precision guided munitions and the missile-enabled loss of air control; and standoff defenses.

This is a Job for the CNO, Not for the COCOMS or the Joint Staff

These are problems with national and global implications, but it is going to have to be the Navy, in the person of the CNO and not some remote staff in the hinterlands or the wilderness of the Pentagon, that is going to have to sort out an escalation dominance strategy or something like it; derive the operational requirements; articulate the strategy to the White House, the Congress, and the public; argue for the necessary resources; and get the fleet ready.

So far, this is aspirational. Congressman Randy Forbes referred to this "deficit of strategic thinking" in a letter to CNO Greenert.

Congressman Forbes's central point in his letter was that technology, programs, and force structure were driving strategy, instead of the other way around:

It makes eminent sense to start with the Maritime Strategy, developed by the Chief of Naval Operations, but in recent years we seem to have turned ourselves upside down by increasingly emphasizing programs and force structure rather than starting with a strategy based on what we need naval forces to do and in what scenarios.

"What's the Answer" vs. "What is the Question"

The congressman has put his finger on a central issue. We have put a tremendous amount of energy into trying to derive the answer, rather than asking, "What are the right questions?" This "answer first" approach shows clearly in the Navy's current vernacular debates over LCS and carriers, for instance, and in the contretemps over integrating unmanned aircraft into carrier air wings.

A more appropriate starting point might be to determine the Navy's strategic purpose going forward, and in what context; and then derive the force structure, force levels, and capabilities necessary to get the job done. This approach, however, challenges the entire Pentagon planning structure based upon program continuity and programmatic defense of resources, "no matter what."

To the contrary, however, the commanders who win will be those who held decisive control decades before the war starts, and who anticipated strategy, tactics, and technological trends.[1] Otherwise, without the right presumptions, whatever resources are available will be squandered.

The Second Offset Strategy as an example

The Second Offset Strategy process is one good example of how to approach such a vital problem. It grew out of the mid-1970s ARPA/DNA Long Range Research & Development Planning Program (LR^2DP^2), which convened three key panels consisting of government and industry experts. The program had the benefit of experienced analytical contractors and panel members with the background in sophisticated military equipment development critical to identifying solutions capable of providing practical operational capability. The three panels were: the Alternatives Panel; the Advanced Technology Panel; and the Munitions Panel.[2]

The programs and capabilities that originated in the [second] offset strategy, many of which were not fielded until the late 1980s and early 1990s, revolutionized conventional warfare, assured American dominance in large-scale ground combat, and eventually drove potential adversaries to "design around" American conventional superiority by employing asymmetric advantages. The offset strategy evolved

[1] Stefan T. Possony and J.E. Pournelle, *The Strategy of Technology: Winning the Decisive War*, University Press of Cambridge, Mass., 1970 (1st edition)

[2], Defense Advanced Research Projects Agency, "ARPA/DNA Long Range Research & Development Planning Program (LR^2DP^2), Final Report of the Advanced Technology Panel", U.S. Department of Defense, 30 April 1975, p. iv.

concurrently with doctrine – which came to favor rapid, decisive operations to quickly defeat adversaries – but also largely ignored urban operations and counterinsurgency missions.

The offset strategy led to major improvements in stealth, precision strike, battlefield information and communications systems, intelligence systems, positioning and navigation capabilities, and training. Innovation in each of these areas was focused on a single strategic objective: offsetting the Warsaw Pact's conventional superiority in Europe, and lowering NATO's reliance on nuclear weapons to deter – or in time of war defend against – a Soviet attack.[3]

A key aspect of this successful approach was that DoD brought together into the same room a select group of operators, analysts, engineers, and industrialists. Furthermore, they had the advantage of having a clear strategy to which they could refer.

The purpose of the overall LR^2DP^2 effort was to assess, in as systematic a manner as practicable, what possible shifts or emphasis in the U.S. Defense R&D program were implied by the strategy of Flexible Response that has been set forth by former President Nixon and secretary of Defense Schlesinger. The overall approach was to investigate representative conflict scenarios that come under the general heading of "Limited Soviet Aggression."[4]

Net Assessment as an Example

A similar procedural approach is the Net Assessment process of carefully correlated data-driven comparisons in areas of military competition that identify overlaps where comparative advantage can be leveraged or banked; and underlaps, wherein risks can be redressed or accepted and factored into strategies and plans. In this contemporary process, Net Assessment Director Andrew Marshall raised to a high art getting the right people in the room and asking them the right questions.

The Relationship Between Strategy and Technology/Force Structure

This right-minded capabilities derivation process is an example of what Possony and Pournelle refer to as "technology war". There is no argument regarding the power of American technology, only that *strategy should come first*. If strategy were to come first – and Congressman Forbes has flagged for us that it does not – then strategic presumptions and planning procedures would be quite different, and so would our conversations about force development and technology. As Possony and Pournelle point out,

As we have repeatedly stated, the Technological War must be fought as are other wars; that is, it must be fought according to a strategy. A military general who simply muddles through, overcoming each obstacle as it comes to him, fighting battles at the dictation of the enemy, and preparing only for battles already fought, would soon lose the war. Yet, too often it is thought that the technological War, which may be the moist decisive engagement in the history of mankind, can be fought with precisely this technique. Technology is made the driving force, dictating to strategy; and strategy is conceived of as the employment of systems already created by the technologists, that is, strategy is confined to operational decisions. This is akin to allowing the munitions manufacturer to decide the conduct of the war.[5]

[3] Robert Tomes, "The Cold War Offset Strategy: Origins and Relevance," War On The Rocks, November 6, 2014, http://warontherocks.com/2014/11/the-cold-war-offset-strategy-origins-and-relevance/#_

[4] "ARPA/DNA Long Range Research & Development Planning Program (LR2DP2), Final Report of the Advanced Technology Panel," p. 1

[5] Possony and Pournelle, p. 57.

PANEL 4: NEW PERSPECTIVES ON MARITIME STRATEGY

THE SUITABILITY OF GRAND STRATEGY FOR TODAY

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This paper deals not with maritime strategy and security directly, but rather with one of its progeny concepts—grand strategy, an important contextual idea for sea power. Grand strategy in a recognizably modern form was first implied and developed by maritime thinkers such as Alfred Thayer Mahan and Julian Stafford Corbett, specifically because the maritime sphere enabled non-military instruments to have utility in a way which could not be the case in western Europe. As Mahan argued, "[t]he diplomatist, as a rule, only affixes the seal of treaty to the work done by the successful soldier. It is not so with a large proportion of strategic points upon the sea."[1] The influence of maritime strategy broadened grand strategy—a pre-existing term—from being purely a military concept to one with far-reaching responsibilities with the addition of non-military instruments. Yet, unlike the amorphous notions of grand strategy which were to come later in the twentieth century and whose value is arguable, this first broadened notion of grand strategy remained fixed on war and adversarial relationships between polities.[2] The focus of an inquiry into the suitability of grand strategy for today will focus on the utility of non-military instruments as independent executors of policy within adversarial relationships.

Implied by the broadened formulation of grand strategy as the employment of both military and non-military instruments for political purposes is the notion that military and non-military means obey the same logic and are equal in value and utility. This is not the case. Military power has the capacity to impose and control. This is most forcefully realized through land power, but less so with sea power, air power, and cyber power. These latter forms of military power may take control solely in their own domains but can only deny control in the wider context of the conflict as a whole.[3] Denial of control through military force is, of all military power, most similar in logic to that of the non-military instruments. Yet in general, military power has the capability to impose upon the enemy an ultimate situation in which the adversary must make a choice either for peace or for the continuation of war. This reverses Lawrence Freedman's revision of the wars of necessity versus wars of choice distinction, changing it instead to obligatory versus voluntary decisions about war.[4]

The logic of non-military power differs substantially. "Coercive diplomacy needs to be distinguished from pure coercion. It seeks to *persuade* the opponent to cease his aggression rather than bludgeon him into stopping. In contrast to the crude use of force to repel the opponent, coercive diplomacy emphasizes the use of threats and the exemplary use of limited force to persuade him to back down."[5] Thus non-military power cannot take control, instead being a collection of instruments whose purpose is pure denial. The particular character of this denial depends on the specific non-military instrument employed. Denial through economic sanctions differs in its effect from information dominance and propaganda, which differs from diplomatic pressure, etc.

This denial of control is represented by the bloodless trends, which are interpreted through trends analysis and may require very long periods of time to manifest. Iran, for instance, had been under economic sanctions of ever-increasing pressure since 1995, a whole generation ago. It is possible to imagine the logical endpoint of a policy of economic sanctions to be, for example, the destruction of the citizenry of a nation unable to import the necessary food. Few sanctioning countries, however, would be willing to push their policies so far. Few policy-makers relish the notion of imposing a public, slow-motion massacre of innocents across an entire state. Thus most decisions made under non-military duress are usually voluntary rather than necessary.

[1] Alfred Thayer Mahan. Naval Strategy compared and contrasted with the principles and practice of military operations on land. (London: Sampson Low, Marston & Company 1911), 123.
[2] Lukas Milevski. The Evolution of Modern Grand Strategic Thought. (Oxford: Oxford UP 2016).
[3] Lukas Milevski. "Revisiting J.C. Wylie's Dichotomy of Strategy: The Effects of Sequential and Cumulative Patterns of Operations," Journal of Strategic Studies 35/2 (April 2012), 223-242.
[4] Lawrence Freedman. "The Counterrevolution in Strategic Affairs," Daedalus 140/3 (Summer 2011), 23.
[5] Gordon A. Craig & Alexander L. George. Force and Statecraft: Diplomatic Problems of Our Time. (Oxford: Oxford UP 1983), 189.

The utility of both military and non-military power is necessarily contextual—to the manner in which it is employed, to the particular character and characteristics of the opponent, etc. Both military and non-military instruments are difficult to employ with the desired degree of success, and use of the military is not a panacea, as the American strategic experience of the past fifteen years only too readily testifies. Yet of the two, non-military power is arguably more susceptible to going awry due to context than is military force, because it cannot compel a polity in the same way that the military can. Non-military power must rely upon the opponent's own perceptions of his situation.

Thus, the sanctions on Iraq in the 1990s did not work. Relative to the policy goals the United States sought—Saddam Hussein's ouster and the termination of his WMD program—sanctions simply could not supply the required duress.[6] Similarly, Russia's political use of its energy dominance in Europe, particularly eastern Europe, has had mixed results and often failed to alter the policies of even weak neighbors.[7] Thus far, the West's sanctions on Russia, even when combined with the much more significant collapse in the price of oil, have not yet triggered the desired change in Russia's foreign policy behavior, nor even in the behavior of Russia's proxies in the Donbas. With regards to the sanctions against Russia, however, it is notable that the West has not cut off Russian access to the Society for Worldwide Interbank Financial Telecommunication (SWIFT), an act which ultimately brought Iran to the negotiating table after 2013.[8]

Why is it that non-military instruments, having been first introduced into strategic theory at the end of the nineteenth and beginning of the twentieth centuries (in broader historical terms, not so long ago), seem to be losing their apparent utility—albeit not their popularity? It is the context that has greatly changed from just over a century ago. When Mahan and Corbett wrote, the context in which they wrote and of which they wrote was peripheral but imperial. That is, maritime strategy could only be practiced on the edges of the European continent and across the expanses of sea between Europe and the myriad imperial possessions of European powers. Imperial possessions were rarely considered to be intrinsically important either as territory or for political consequences in Europe itself. Portions of empires could be traded or bartered in a manner unlikely to occur within Europe and there were few to gainsay such transactions, even in adversarial relationships.

Today, the old empires are mostly gone, replaced by successor states, many of which are nations. National states mean national territory and national policies. Many are ruled by authoritarian figures, some of whom rely upon national feeling to buttress their rule or their own popularity—such as Putin today. To surrender national territory or change national policies under duress, whether military or non-military, within an adversarial relationship would be deeply unpopular. It might spell the end of one's government, of the regime, perhaps even of the authoritarian figure's life should he be unlucky. Military force is generically more useful than non-military power because the necessity of obliging the enemy to make a decision is often required.

Yet this context remains largely unrecognized in the West, for whom non-military instruments are usually the first—and often only—one to be employed in a confrontation. This may be because, even as the world remains national and political, many states in the West are focusing increasingly on the market and on making money, particularly in the aftermath of the financial crisis. Such market-states are "largely indifferent to the norms of justice, or for that matter to any particular set of moral values so long as law does not act as an impediment to economic competition."[9] This emphasis persuades Western political leaders to value non-military power above its real worth to effect actual change, because this is the set of instruments which seems best suited to applying pressure on Western powers.

The notion of grand strategy as the use for political purposes of all instruments, both military and non-military, requires revision if it is to be relevant today. Non-military instruments in particular appear to have lost utility as direct and independent executors of policy, but there *are* other ways in which they may be used to beneficial effect even in adversarial relationships and war.

[6] John Mueller & Karl Mueller. "Sanctions of Mass Destruction," *Foreign Affairs* 78/3 (May-June 1999), 43-53.
[7] Karen Smith Stegen. "Deconstructing the 'energy weapon': Russia's threat to Europe as case study," *Energy Policy* 39 (2011), 6511.
[8] On the Iranian success, see Daniel W. Drezner. "Targeted Sanctions in a World of Global Finance," *International Interactions* 41/4 (2015), 758-759.
[9] Phillip Bobbitt. The Shield of Achilles: War, Peace and the Course of History. (London: Allen Lane 2002), 230.

PANEL 4: NEW PERSPECTIVES ON MARITIME STRATEGY

COMPUTATIONAL APPROACHES TO STRATEGIC REASONING: MARITIME STRATEGY AND BEYOND

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The emergence of cyber conflict, robotics, artificial intelligence, and autonomous systems as either current or future elements of conflict pose significant issues for the craft of strategy. [1] Many believe that emerging information technology platforms – in challenging the very fundamentals of human decisionmaking and control over the rationalization of violence – will be a decisive break from all that we know. Those tasked with maritime strategy in particular must deal with the challenge of integrating unmanned aerial vehicles and unmanned sea vehicles into strategies and concepts of operation. [2]

However, the biggest challenge that the Navy and other entities face lies in thinking about strategy and decision from a computational point of view. A world in which the power of computation is increasingly inescapable needs analysts to draw broader connections between computation and existing strategic theory and history rather than merely building strategic analysis and concepts around whatever technological tools temporarily rule the day.

Hence, this paper argues for the utility of a *computational approach* to strategic reasoning. A computational approach takes familiar aspects of strategy and recasts them in terms of computational processes such as algorithms and programs for search, learning, and optimization. A computational approach also allows strategic analysis and explanation to be formalized and implemented as a computer program on a standard desktop computer or laptop.

Most importantly, computational approaches begin from a recognition of shared human and machine *limitations* on strategy and decision. Rationality – bounded or not – does not entail omniscience, and a computational approach promotes a view of strategy as an adaptive means of fulfilling goals in spite of them. [3] Understanding both commonalities and differences in human and machine views of strategy and adversarial behavior will not only shed light on current strategic challenges but also contribute to broader knowledge and understanding in strategic theory. [4]

The paper provides a basic proof of concept by showing how aspects of Cold War strategy – including maritime strategy and operations – may be simulated through a multi-agent model of nuclear conflict. The commercial nuclear strategy game of *DEFCON* presents a simple Cold War simulation where players – unaware of each other's dispositions – place ground units and naval fleets and then progress from surveilling each other's dispositions to progressively more escalatory levels of combat.

1 See, for example, Adams, Thomas K. "Future warfare and the decline of human decisionmaking." *Parameters* 31.4 (2001): 57, Liles, Samuel, et al. "Applying traditional military principles to cyber warfare." *2012 4th International Conference on Cyber Conflict (CYCON 2012)*. 2012, Manzo, Vincent. "Deterrence and Escalation in Cross-domain Operations." *JFQ: Joint Force Quarterly* 66 (2012): 8-14.

2 Yan, Ru-jian, et al. "Development and missions of unmanned surface vehicle." *Journal of Marine Science and Application* 9.4 (2010): 451-457, Bruzzone, Gabriele, et al. "Autonomous mine hunting mission for the Charlie USV." *OCEANS, 2011 IEEE-Spain*. IEEE, 2011, Manley, Justin E. "Unmanned surface vehicles, 15 years of development." *OCEANS 2008*. IEEE, 2008, Borck, Hayley, et al. "Active Behavior Recognition in Beyond Visual Range Air Combat." *Proceedings of the Third Annual Conference on Advances in Cognitive Systems ACS*. 2015, Callam, Andrew. "Drone Wars: armed unmanned aerial vehicles." *International Affairs Review* 18 (2015), Savuran, Halil, and Murat Karakaya. "Efficient route planning for an unmanned air vehicle deployed on a moving carrier." *Soft Computing* (2015): 1-16, Ehrhard, Thomas P., and Robert O. Work. *The Unmanned Combat Air System Carrier Demonstration Program: A New Dawn for Naval Aviation?*. Washington: Center for Strategic and Budgetary Assessments, 2007, Wadley, Jason, Gregory Tallant, and Robert Ruszkowski. "Adaptive Flight Control of a Carrier Based Unmanned Air Vehicle." *AIAA Guidance, Navigation, and Control Conference, AIAA-2003-5596, Austin, TX, August*. 2003.

3 Russell, Stuart Jonathan, and Eric Wefald. Do the right thing: studies in limited rationality. MIT press, 1991, Takemura, Kazuhisa. Behavioral Decision Theory: Psychological and Mathematical Descriptions of Human Choice Behavior. Springer, 2014.

4 For a comparative overview, see Pomerol, Jean-Charles. Decision Making and Action. John Wiley & Sons, 2012.

Every game culminates in total nuclear exchange. Via an application programming interface (API) written in the programming language C++, modelers can program computer players to play automated matches.

While *DEFCON* is in many ways a very unrealistic depiction of nuclear war, programming automated players to fight each other reveals the most important finding of the computational approach. All systems – from slime molds to states – are limited in time and space in the amount of choices that can be considered and must resolve tradeoffs in goals and behaviors. All entities are capable of improving their performance through adaptation and learning, but face similar limitations and tradeoffs in what can be learned and how it is learned. [5] Programming strategy game players similarly involves tradeoffs between different goal-driven strategic behaviors and reactionary responses to unexpected events.

The similarities and difference between human and machine strategy game players is often instructive; the former often internalize ways to compress or abstract the game in ways that the latter do not. What both have in common, however, is the reality of constraints, limitations, and tradeoffs in how they decide what to do next. Herbert Simon's concept of "bounded rationality" – often popularly understood as cognitive and *human* limits on reasoning and optimal decision – actually may have originally been used to describe the process of deriving approximations for military operations and logistics problems that were too tough to compute exact solutions for in the early Cold War. [6]

Computational models and simulations have often been used for operations research and analysis, wargaming, and simulation and training. In general, however, computational models are rarely if ever utilized for theory development and abstract strategic reasoning. In sum, despite the problematic Cold War origins of computational approaches, this paper suggests that the real utility of computer programs that model strategic problems is theory development and contribution to the collective knowledge base of the strategy community.

5 See, for example, Tyrrell, Toby. *Computational mechanisms for action selection*. Diss. University of Edinburgh, 1993, Maes, Pattie. "Modeling adaptive autonomous agents." *Artificial life* 1.1_2 (1993): 135-162, Tyrrell, Toby. "The use of hierarchies for action selection." *Adaptive Behavior* 1.4 (1993): 387-420, Tu, Xiaoyuan. *Artificial animals for computer animation: biomechanics, locomotion, perception, and behavior*. Springer Science & Business Media, 1999, Brom, Cyril, and Joanna Bryson. "Action selection for intelligent systems." *European Network for the Advancement of Artificial Cognitive Systems* (2006), Prescott, Tony J., Joanna J. Bryson, and Anil K. Seth. "Introduction. Modelling natural action selection." *Philosophical Transactions of the Royal Society of London B: Biological Sciences* 362.1485 (2007): 1521-1529, Bryson, Joanna J. "Mechanisms of action selection: Introduction to the special issue." *Adaptive Behavior* 15.1 (2007): 5-9, Bryson, Joanna. "Cross-paradigm analysis of autonomous agent architecture." *Journal of Experimental & Theoretical Artificial Intelligence* 12.2 (2000): 165-189, De Sevin, Etienne, and Daniel Thalmann. "A motivational model of action selection for virtual humans." *Computer Graphics International 2005*. IEEE, 2005, Scheutz, Matthias, and Virgil Andronache. "Architectural mechanisms for dynamic changes of behavior selection strategies in behavior-based systems." *Systems, Man, and Cybernetics, Part B: Cybernetics, IEEE Transactions on* 34.6 (2004): 2377-2395.

6 Erickson, Paul, et al. *How reason almost lost its mind: The strange career of Cold War rationality*. University of Chicago Press, 2013.

CONTINUING CONTROL: STRATEGIC REASONING FOR THE 21ST CENTURY

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In the summer of 1950 Captain Joseph 'J.C.' Wylie returned to Newport to begin a staff tour at the Naval War College. Over the course of his three-year tour Wylie developed and oversaw the short-lived 'Advanced Course in Strategy and Sea Power.' While the course was canceled less than three years after his departure, it ultimately resulted in a unique body of scholarship on strategic theory. Along with Wylie, and his students, Rear Admiral Henry Eccles and German-American historian Dr. Herbert Rosinski would collectively develop what I refer to as the 'Control School' of strategy. The defining feature of which would be a straightforward idea: the purpose of all war, and by extension the aim of any strategy, is the assertion of some desired degree of 'control' over the adversary. Expanding outward from this basic premise, each of these three intellectuals worked toward the development of a comprehensive theory of war and strategy that, while now largely forgotten, can improve the way we conceptualize and communicate strategy today.

'Strategic Reasoning'

Herbert Rosinski began his study of strategy by exploring the canonical works of Clausewitz, Mahan, Corbett, and others; the intention of which was to reconcile the different patterns of thought that become apparent when one looks at strategy on land and strategy at sea. Through the course of his years of study Rosinski's aim evolved. He came to believe that what was needed was the development of a comprehensive theory of strategy. Thoroughly Clausewitzian in his thinking, Rosinski sought to achieve one of Clausewitz great aims: to reconcile the nature and character of past wars with those that clearly marked the turn to a new historical epoch. He believed that the end of the Second World War, the maturation of the industrial age, and the dawn of the atomic age, meant that both war and society had entered a new historical epoch. Just as the rise of Napoleon's France had inspired Clausewitz attempt to rationalise war as it was, with war as it had been throughout (pre-Napoleonic) history. As Rosinski explained:

> Today, with our field of strategy so enormously enlarged and our notions of it so grievously split between three widely irreconcilable service views – not to mention others – the need for a common theory as at least the basis for a meaningful discussion of the existing divergences has become incomparably more imperative than in Clausewitz' days. I do not see how we can ever hope to arrive at any unified, rational and economic, national strategy except upon the basis of a previously established theory of war.[1]

In light of the maturity of the industrial age and the dawn of the nuclear age, Clausewitz definition of strategy as the "use of an engagement for the purpose of the war" was no longer fit for purpose.[2] To Rosinski, a comprehensive theory had to unify this out-dated definition with what Rosinski viewed as the other conception of strategy hinted at, but not fully developed in *On War*: "strategy as the overall direction of war".[3] This idea of two realms of strategy had already been explored by Julian Corbett. The British navalist referred to them as 'Minor Strategy' and 'Major Strategy', what many today would term 'strategy' and 'grand strategy'.[4]

[1] Herbert Rosinski, 'Comments on the Theory of War' (October 1957), p. 3
[2] Carl von Clausewitz, *On War*, Book II, Chapter I; Book III, Chapter I
[3] Rosinski, 'The Structure of Military Strategy', p. 18-22; Clausewitz, *On War*, p. 178
[4] J. S. Corbett, *Some Principles of Maritime Strategy* (Annapolis, 1988), p. 308

The great value of a comprehensive theory, one inclusive enough to cover the comprehensive direction of a nations power (both military and non-military), is in its ability to provide the foundation for what Rosinski called 'strategic reasoning'. Strategic reasoning, he suggested, was an analytical methodology that needed to be taught. It was analogous to the ways in which law schools do more than teach legal cases, they teach law students to think like lawyers, legal reasoning; likewise, medical schools teach more than specific medical cases they teach a broader conception of medical reasoning. The means to approach, analyse, and most importantly, communicate about strategy with others across the various services and organizations, through an explicit theory, was "imperative in order to provide common ground for a discussion and to avoid semantic misunderstandings."[5]

'Strategy as Control'

This idea of a comprehensive theory of strategy as a form of strategic reasoning is the framework through which the work of Wylie, Rosinski, and Henry Eccles should be viewed. It was Wylie who first presented the idea that "the aim of any war is to establish some measure of control over the enemy. The pattern of action by which this control is sought is the strategy of the war."[6] Rosinski, while defining strategy as the "comprehensive direction of power", shared Wylie's emphasis on control, declaring it "the essence of strategy; control being the element which differentiates true strategic action from a haphazard series of improvisations."[7]

While Rosinski, the consummate scholar, defined the practice of strategy as the "coordination of all forces and resources of a community in such a clear and purposeful manner as to: make effective action possible, and to maximize the effectiveness of this action."[8] Wylie, ever the operator, directed his writings quite pointedly towards the thinking and practice of the operator.

> The primary aim of the strategist in the conduct of war is some selected degree of control of the enemy for the strategist's own purpose; this is achieved by control of the pattern of war; and this control of the pattern of war is had by manipulation of the center of gravity of war to the advantage of the strategist and the disadvantage of the opponent.[9]

It is the specific focus on control, and its explicit distinction from – and relationship to – destruction, which most distinguishes it from Clausewitz, and the majority of land-centric strategic theory. Though this is not to say that their work stands opposed to that of Clausewitz, or even the central role of the soldier to strategy, Wylie was quite specific in insisting that the soldier on land was the ultimate manifestation of the concept.

> *The ultimate determinant in war is the man on the scene with the gun.* This man is the final power in war. He is control. He determines who wins. There are those who would dispute this as an absolute, but it is my belief that while other means may critically influence war today, after whatever devastation and destruction may be inflicted on an enemy, if the strategist is forced to strive for final and ultimate control, he must establish, or must present as an inevitable prospect, a man on the scene with a gun. This is the soldier. […] I do not claim that the soldier actually on the scene is a requisite in every case; but I do believe he must be potentially available, and clearly seen as potentially available, for use as the ultimate arbiter. [10]

[5] Rosinski, 'Comments on the Theory of War', p. 3
[6] J. C. Wylie, *Military Strategy: A General Theory of Power Control* (Annapolis, 1989), p. 124
[7] Herbert Rosinski, 'New Thoughts on Strategy' (September, 1955), p. 1
[8] Rosinski, 'The Structure of Military Strategy', p. 21
[9] Wylie, *Military Strategy,* p. 77.
[10] Wylie, *Military Strategy,* p. 72

This statement, in essence reflects Clausewitz own assertion that the aim of war is the destruction of the enemy forces, so as to impose one's will upon them.[11] Yet it also builds on that assertion by hinting at the fact that goals can be achieved without complete destruction, and without this "ultimate arbiter." The critical distinction that Wylie makes is the one between destruction as the end unto itself, and as a means to serve the desired ends: the establishment of control. Clausewitz discusses this, at the very opening of *On War,* in the sense of "imposing our will upon the enemy" (which, in essence, is how he views control). However, he follows that with the assertion that to "render the enemy powerless", to *destroy* his means of resistance, is the "true aim of war."[12] This distinction as expressed by Clausewitz, has, according to Wylie, Rosinski, and Eccles, all too often led strategists to assume the destruction of the enemy army is the ultimate objective of the war, without appreciating what precisely the strategist wishes to impose upon his enemy.[13] A focus on control, they argue, provides the ability to properly calibrate the type and degree of destruction required. Absent this calibration, unchecked destruction becomes counter-productive. In discussing the contribution of both the sailor, and the soldier, Wylie argues:

> Destruction in each of these two cases is only one component of control, and not the whole of it. The soldier exercises ultimate control by his unchallenged presence on the scene. The sailor contributes to control in part by destruction, but as much by other components. Like the soldier, in some cases, by his presence. Or, as often as not, by making possible various political or economic pressures toward control.[14]

The explicit argument, expressed most cogently by Wylie but echoed in the writing of both Rosinski and Eccles, is that while the ultimate form of control is the unchallenged presence of "the man on the scene with the gun", it should not be assumed that this is required in all, or perhaps even most, instances.[15] This is, instead, a zero-point baseline and it is equally if not more likely that the degree required (or the degree that is realistically achievable) will be a deviation from this baseline.

The central requirement of the strategist then, is to discern what specifically is the degree of control required. Rosinski draws this issue back to the foundational principal of *On War*: the relationship of war to policy.[16] In essence he upholds the authority of policy over military leadership, with two critical caveats. The first being that political leadership must understand the nature and effect of the "tools" it is employing, its pre-conditions and possible consequences. The second, stemming from the first, is that policy must not ask of military leadership efforts which they are patently incapable of achieving.[17]

'Continuing Control'

In developing what Rosinski had referred to as 'comprehensive control', which is to say control as the focusing concept that governs, and gives purpose to, the overall direction of war and the coordination of all forces and resources of the community, Eccles provided what may be a more useful conception in 'continuing control'. Like Wylie, Eccles was concerned with the tendency of strategists, both in abstract theorizing and war planning, to focus overwhelmingly on destruction as an end unto itself. This manifested in what he referred to as 'weapons strategies', those that reflexively tend to hone in on a specific weapon or system of weapons (belonging either to the strategist or the adversary).[18] The result of this, Eccles argued, is that the strategist tends to pattern his thinking to the capability of the weapon, rather than maintaining an agnostic appreciation of the dictates of policy. For Eccles, the benefit of phrasing this concept was 'continuing control' was that it, "naturally leads to a re-examination and better

[11] Clausewitz, *On War,* Book VIII, Chapter IV
[12] Clausewitz, *On War*, Book I, Chapter I
[13] Wylie, *Military Strategy*, p. 47
[14] Wylie, *Military Strategy*, p. 88
[15] Wylie, *Military Strategy*, p. 72
[16] Herbert Rosinski, 'The Structure of Military Strategy' (November, 1956), pp. 7-9
[17] Rosinski, 'The Structure of Military Strategy' (November, 1956), pp. 8-9
[18] See Henry Eccles comments on: Herbert Rosinski, 'New Thoughts on Strategy' (September 1955)

understanding of the objectives whose attainment is the purpose of the attempt to exercise control." Eccles went on to suggest that:

> The concept of continuing control prepares the mind for shifting its emphasis from weapon to weapon or from tool to tool in accordance with a changing situation or with the changing capabilities and use or application of the weapons or weapon systems involved. Thus, [Rosinski's concept of strategy as "comprehensive control"] naturally leads to the intellectual concept of flexibility.[19]

Eccles conception here is, by his own admission, deliberately simplified and capable of considerable expansion. Given his emphasis on flexibility as this central principal, a sort of governing virtue of strategic thinking, both the concept and wording should be viewed in a broad light.[20] Like Rosinski, Eccles intended to develop a comprehensive theory that applied up and down the various levels of war and across the various domains of war. To that end, his call for flexibility in the use or application of weapons and weapons systems, I would argue, should be viewed not just within the case of a specific service. It should be viewed instead, as speaking to the flexible way in which the services themselves are brought to bear in the execution of a given strategy.

Keeping in mind Rosinski's argument that the theory of control functions both as a field strategy, and in the sense of strategy as the overall direction of war, this idea should be applied at both levels. The idea of employing weapons and weapons systems towards continuing control at the level of a field strategy should, at the level of overall direction, be viewed as the flexible application of the service's roles, missions, and specific weapons systems. Therefore this should be read in the sense of what we today call "joint warfighting".

The theory of control, I believe, is both sufficiently broad and coherent to serve as a means of strategic reasoning in an era where the conduct of war is highly complex. Complex not only in terms of its organisational challenges from inter-service, to inter-agency, and multi-national; but also the challenges of its conduct from insurgency, to operational-access, to conventional, and even so called 'Phase 0' or 'Gray Wars'. All of which can be understood and discussed in terms of their central essence: the assertion or denial of some degree of control. It is because of this that the theory of control provides a sound basis for strategic reasoning, one capable of improving the way we approach, analyse and communicate strategic understanding across a range of domains, services, and organizational structures.

[19] Ibid
[20] Ibid

PANEL 5: MARITIME WARFARE

"VIRTUAL ATTRITION" AND VICTORY IN MARITIME WARFARE

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The proliferation of "anti-access" threats such as submarines, anti-ship cruise and ballistic missiles, and long-range surveillance systems is today the overriding preoccupation of those who develop maritime strategy, build naval weapons, and organize, train, and equip the fleet. The concepts these communities pursue rely to a great degree on destroying or killing the enemy and its weapons. This decisive and logical approach, however, is not a sustainable one against today's threats and may actually detract from naval forces achieving their objectives. Instead, maritime forces may be better served if they simply avoid threats, impose costs on their adversaries, and accomplish the task at hand.

An enemy force can be taken out of the fight in two main ways. It can be destroyed or killed, which could be called "actual attrition," or it can be marginalized or rendered ineffective, which could be called "virtual attrition." The former requires enemy targets be found and classified precisely, and engaged with a weapon able to locate the target and overcome target countermeasures and maneuvers. This sets a pretty high bar for reconnaissance and command and control capabilities, weapon seekers, and weapon guidance and control systems.

In contrast, virtual attrition may be achievable with a much less expensive and sophisticated set of capabilities. Offensively, it involves friendly forces suppressing enemy operations until the enemy's window of opportunity to conduct them passes. Defensively, virtual attrition can be achieved by compelling the enemy to conduct many more attacks than are necessary because of friendly force disposition, or due to providing the enemy a false of degraded targeting information.

Some historical examples

The Allies success in anti-submarine warfare (ASW) during the Battle of the Atlantic is an excellent example of virtual attrition in action. In the first year of World War II, less than a dozen Axis submarines were on patrol at any given time in the Atlantic Ocean. Despite their small numbers, they imposed hundreds of thousands of tons of shipping losses on the Allies attempting to resupply England. These losses grew only modestly as the number of Axis submarines on patrol grew to more than 100 in 1941, indicating less productivity per submarine. And starting in mid-1942, overall shipping losses per month actually decreased, with a few spikes due to specific operational situations. Submarine losses, however, were less than about 10 per month throughout the battle until late 1944. Something other than submarine losses was causing the U-boat offensive to falter.

That something else was virtual attrition. Allied ASW efforts, while not resulting in many submarine kills, were preventing submarines from getting into position for an effective attack. When they missed their window of opportunity, U-boats were marginalized from the fight until another convoy came along, and the process would repeat. This dynamic took advantage of a submarine's limited speed, self defenses, and sensor capability. Notably, submarines today still have these limitations relative to the surface ships and aircraft arrayed against them.

Another example is in air defense, although ashore rather than at sea. During the Vietnam War, North Vietnamese troops imposed virtual attrition on attacking U.S. aircraft with the introduction of the SA-2 air defense system. This surface-to-air missile system was provided by the Soviet Union and made operational by the time of Operation Rolling Thunder in 1965. Previous to the SA-2's introduction, U.S. strike aircraft only had to worry about anti-aircraft artillery (AAA) (sometimes radar-guided) and MiG interceptor aircraft. Those were negated by flying above the range of AAA guns and bringing fighter escorts to counter the MiGs.

The SA-2 added a new set of threats. It could engage aircraft above the altitude of AAA, taking away the sanctuary American aircraft had enjoyed above 10,000 feet. It was also guided by the ground-based

radar all the way to the target, making chaff and flares launched by the target aircraft less effective. Even though the first generation of SA-2's had a less than 10 percent probability of killing an aircraft, U.S. air forces had to respect the threat it posed. As a result, by the end of Operation Rolling Thunder in 1968, half the aircraft in U.S. strike packages were devoted to electronic warfare and defensive counterair missions. Most of these aircraft were converted fighters or fighter-bombers, so the SA-2 was able to essentially reduce the number of strike aircraft in U.S. air forces by one-half.

Implications for future warfare

There are several ways U.S. forces could exploit virtual attrition in future conflicts. For example, the anti-access networks of potential U.S. adversaries such as China or Russia depend on "reconnaissance strike complexes" consisting of surveillance systems and long-range precision guided weapons. Because they depend on "fire and forget" capabilities, these complexes are vulnerable to counter-targeting operations such as electronic warfare, concealment, decoy, and deception. These efforts will compel the enemy to use more weapons than desired as they attack false targets, attempt to overwhelm jammers, and launch multiple weapon at targets with large areas of uncertainty.

Enemy reconnaissance strike complexes are also susceptible to suppression attacks by U.S. and allied forces. Missile launchers, including those on ships and aircraft, make themselves vulnerable to counterattack when they conduct launch operations. Rapid counterbattery attacks by U.S. naval forces could prevent these launchers from preparing for another engagement, even if they do not destroy or damage the launcher. Once discovered, launchers can then be harassed such that they are unable to sustain significant fires.

A particularly naval example of suppression attacks is in ASW. As in World War II, U.S. surface and air forces today could significantly reduce the effectiveness of enemy submarines by using overt ASW sensors, such as low frequency active sonar, and inexpensive standoff weapons such as anti-submarine rockets. Overt sensors will make submarine commanders less willing to approach the area in which the sensor is operating, out of concern for being detected. And being attacked with a standoff ASW weapon, even if unsuccessful, will cause a submarine to leave the area because is confirms the submarine was detected by ASW forces, and the submarine lacks the speed and self defense capabilities to "stand and fight" as a surface combatant might.

These new concepts could enable naval forces to reduce the ability of the enemy to be effective without actually attriting its forces. Instead, these efforts marginalize the enemy and remove them temporarily from the fight. Other examples will be explored in the presentation as well, but in general this approach offers the potential to improve naval warfighting by focusing capability development on those operations that actually accomplish objectives, rather than simply kill the enemy.

PANEL 5: MARITIME WARFARE

COMMANDING TOMORROW'S CONTESTED ZONE: OPERATIONALIZING CS21 IN THE LITTORALS

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This short paper will focus on the strategic importance of the littorals, a topic frequently overlooked. Instead, too often the global commons is accorded strategic status and overemphasized. Command of the global commons, is a key enabling element of our larger national strategy. It is important to be able to gain control where and when needed, and it should be a critical mission for maritime forces.[1] But this use of the sea, space, and air is NOT the end game of our strategy—it is simply an enabler to achieve larger strategic objectives in maintaining international order and access to allies, partners and critical resources. Once opened, we must leverage our control of the commons to achieve assigned objectives in the risky littorals and the complex terrain and urbanized political centers where political power and centers of gravity will congregate. This is where the back half of the A2/AD challenge is too often overlooked. Countering the area denial threat is already here and also a growing challenge, in a world in which cheap but lethally effective counters can proliferate even faster and much cheaper than modern, long-range anti-access technologies. It is not an end unto itself, despite thinly veiled attempts to portray it as such.[2]

While we need to secure control of those commons when we need to, reflecting our Mahanian roots, we should not lose sight of the Corbettian notion of exploiting that access for strategic and operational maneuver in the *Contested Zones*.[3] These zones include the complex and congested littorals where the majority of the world's population, economic activity, energy distribution networks and political power is centered.[4] The requirement to maneuver over the global commons and into these littoral environments has been and remains the real extant challenge for U.S. military strategy. Our Nation accrues a number of strategic advantages from its relatively robust amphibious projection capacity.[5] At the end of the day, we must ensure our adversaries are not granted impunity in the contested zones where their area denial systems and exploitation of the dense complex terrain of the littoral environment presents challenges at the operational level in ground expeditionary operations.

I was asked to apply my research on adaptation to the challenge of preparing for littoral warfare. In order to satisfy the chair's direction, I arranged my presentation in four parts. In the first section, I will define and then redefine what is meant today by adaptation. I will then briefly discuss the foundational attributes of the U.S. Marine Corps, which I consign responsibility for its remarkable degree of adaptability. In the third portion, the paper transitions to a discussion about the adaptations made by the Marine Corps represented in the concepts of Operational Maneuver from the Sea and Distributed Operations. In my final section, I delineate a few areas where the Corps can continue to adapt in order achieve the requisite capabilities for the United States to excel in littoral warfare in the 21st Century.

Adaptation Defined

The current state of the literature today defines adaptation narrowly. Adaptation is not synonymous with innovation or change. Innovation theories are almost entirely focused on major innovative leaps which generally occur during peacetime when states and their military institutions have the time and resources to

[1] Sam J. Tangredi, Anti-Access Warfare: Countering A2/AD Strategies, Annapolis, MD: Naval Institute Press, 2013.
[2] Barry R. Posen, "Command of the Commons: The Military Foundation of U.S. Hegemony," *International Security*, Vol. 28, No. 1, Summer 2003, pp. 5-46.
[3] Something once stressed in Robert Schmidle and F. G. Hoffman, "Commanding the Contested Zones," *Proceedings*, Nov. 2004.
[4] Ralph Peters, "Our Soldiers, Their Cities," *Parameters*, Spring 2000, pp. 43-50. See also David Kilcullen, *Out of the Mountains*, New York: Oxford Univ. Press, 2014.
[5] F. G. Hoffman, "21st Century Power Projection," *Marine Corps Gazette* December, 2011.

explore new technologies and innovative concepts. Innovation studies have focused on rare but significant shifts requiring both a new "theory of victory" and the creation or change of a primary combat arm.[6]

Most theorists, starting with Theo Farrell, head of War Studies at King's College London, define adaptation as something that occurs in wartime. Farrell defined adaptation as a "Change to strategy, force generation, and or military plans and operations that is undertaken in response to operational challenges and campaign pressures."[7] This notion of force generation includes weapons and new equipment, and the supporting doctrine. This definition captures the reaction/response character of adaptation that dominates the literature.

Adaptation was shorted during the RMA movement, as it was focused on creating new victory mechanisms and new domains. But now, there is a surge of detailed studies about military organizations learning and changing based on operational experience. This includes books by Meir Finkel, Wick Murray, James Russell, Janine Davidson, and Chad Serena. [8] This rich body of literature has generated a greater appreciation for wartime change and the incorporation of inputs from real operational experience generated at the edge of the organization at the tactical level.

In my research "*Adaptation is the alteration of existing competencies at either the institutional or operational level to enhance performance based on perceived gaps or deficiencies generated by combat experience during wartime.*"[9] This involves recognizing or perceiving gaps in performance and the search for alterations. A number of adjustments and adaptations may be aggregated into a new organizational competency that constitutes an innovation for that organization. Adaptation is a dynamic process involving the acquisition of knowledge, the utilization of that knowledge to create altered capacity, and the sharing of that learning to other units to integrate and institutionalize the better operational praxis across the institution.[10] Additionally, this definition, per previous scholarship by Grissom incorporates "enhanced organizational performance."[11] The change continuum and definition also accepts Farrell and Terriff's conception that a bundle of adaptations can lead to the evolution of an aggregate of skills and methods that constitute an innovation.[12]

However, now my definition requires adaptation. We can drop the 'during wartime' element to include the alteration of core competencies of the institution in response to *anticipated changes in* adversary capabilities or environmental conditions. The rationale for such a definitional change is relevant to studying the Marine Corps which has often excelled at anticipatory adaptation in peacetime, reflecting its constant evolution of tactics and operational practice within its fundamental mission and core competency of amphibious operations. Going back to the 1930s and an equally rich period of history in the 1990s, the Marines have a noted ability to learn from the experiences of others, and to recognize the need to adapt competencies that the Nation requires of them well before the next crisis.

Space precludes explaining the attributes that buttress this institutional adaptability of the Corps, but it is sufficient to underscore that the Marine culture or ethos is a major element as well as its leadership philosophy.[13] In *First to Fight,* General Krulak, describes adaptation as "a way of life for the Marines."[14] Commanders articulate a mission and their intent as how this objective contributes to the larger objective.

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[6] Stephen P. Rosen, *Winning the Next War, Innovation and the Modern Military*, Ithaca, NY: Cornell Univ. Press, 1991, 20–21.
[7] Farrell, "Introduction," to Theo Farrell, Frans Osinga and James Russell, eds., *Military Adaptation in Afghanistan*, Stanford, CA: Stanford Security Studies, 2013, p. 2.
[8] Meir Finkel, *On Flexibility, Recovery from Technological and Doctrinal Surprise on the Battlefield*, Stanford, CA: Stanford Security Studies, 2011; Williamson Murray, Military Adaptation in War, With Fear of Change, New York: Cambridge Univ. Press, 2012; James A. Russell, *Innovation, Transformation, and War, Counterinsurgency Operations in Anbar and Ninewa Provinces, Iraq*, Stanford, CA: Stanford Security Studies, 2011; Chad Serena, *A Revolution in Military Adaptation,* Washington, DC: Georgetown Univ. Press, 2012, pp. 104–119; Janine Davidson, *Lifting the Fog of Peace, How Americans Learned to Fight Modern War,* Ann Arbor: Michigan Univ. Press, 2010.
[9] F. G. Hoffman, *Learning Under Fire, Military Change in Wartime*, PhD thesis, King's College London, 2015.
[10] Adapted from Anthony Dibella, Edwin Nevis and Janet Gould, "Understanding Organizational Learning Capability," *Journal of Management Studies*, 33: 3, October 1996, 363.
[11] Adam Grissom, "The Future of Military Innovation Studies," *Journal of Strategic Studies*, 29:5, October 2006, 905–934.
[12] Farrell and Terriff, *Military Change*, 6.
[13] U.S. Marine Corps, MCDP 1 *Warfighting*, Quantico, 1997.
[14] Victor Krulak, *First to Fight*, Annapolis, MD: Naval Institute Press, 1996, 111.

Subordinates take in the "what" and why, and are left to their own devices to conceive the "how."[15] What doctrine the Corps does publish extols the value of "adaptability to respond effectively without a great deal of preparation time to a broad variety of circumstances.[16] Overall, the Marine culture is suited to organizational learning and adaptation. It is not a perfect system.[17] But a penchant for 'can do' pragmatism, coupled with an institutional bias for action abets continuous inquiry and adaptation in peacetime and during war.

Operational Maneuver and Distributed Operations

Adaptation in littoral and expeditionary operations has been a continuous process within the Marine Corps for the last 25 years, despite pressures to execute contingencies across the conflict spectrum. The most critical manifestation was the publication of *Operational Maneuver from the Sea (OMFTS)* in 1996, and its supporting concept, *Ship-to-Objective Maneuver* (STOM). These concepts evidence a great deal of accurate anticipation about the future operating environment we now take for granted. The Marines have evolved the initial concepts of OMFTS and STOM by incorporating distributed operations and distributed maneuver.

Perhaps the most critical adaptation that has been made in the last decade was the eventual recognition by the Marine Corps senior leadership about the operational impact of the A2/AD threat as it evolved over the last two decades. The Marine Corps should be credited with recognizing the potential emergence of A2/AD challenges, particularly the impact of precision munitions back in the 1990s when they realized that amphibious operations would have to a) start from greater standoff and b) avoid operational pauses at the beach head, which could easily be targeted. These considerations were not recognized by most forecasters except by Marine planners back in the 1990s, and they drove the critical development of new operational concepts and materiel solutions like the V-22 and the Advanced Amphibious Assault Vehicle which was supposed to launch from 25 miles offshore and transit through the littorals and seamlessly pass deep into the littoral operating area without days of assembling combat power and necessary logistics support. These were recognized as operational weaknesses that could be exploited, and this recognition occurred years before anyone coined the A2/AD acronym.

One can also see further adaptation in the decade long development of Distributed Operations entail netted units physically dispersed and operating over an extended battlespace.[18] This was a concept developed by a small cell working for the Commandant that was then deliberately and simultaneously placed in the professional journals of the Naval Services to abet professional debate and discourse over the implications of these concepts.[19] Some of the responses were predictable but they were also professional and productive.[20] Distributed Operations are characterized by decentralization, multi-dimensionality, simultaneity, and continuous pressure over the adversary's entire system to preclude his ability to reconstitute or adjust. Distributed Operations are conducted by squad- to battalion-sized units operating as part of a Marine Air-Ground Task Force (MAGTF). Units trained and equipped to perform Distributed Operations can make a contribution across the full range of military operations from Stability and Support Operations to Joint forcible entry missions.

This concept is consistent with both current trends in conflict and the enduring aspects of the operational art. It is particularly oriented on the acute requirements for greater agility, decentralization, and multi-dimensionality in future conflict.[21] Distributed Operations seek to achieve the high degree of

[15] See Mission Command Concept paper, Quantico, VA.
[16] U.S. Marine Corps, MCDP 3, *Expeditionary Operations*, Quantico, VA: Marine Corps Combat Development Command, 1998, 43–44.
[17] Terriff, "Warriors and Innovators," 235.
[18] *Ship to Objective Maneuver*, Quantico, VA: Marine Corps Combat Development Command, May 16, 2011.
[19] As suggested by CDR Benjamin J. Armstrong, USN, *21st Century Sims: Innovation, Education, and Leadership for the Modern Era*, Annapolis, MD: Naval Institute Press, 2015, 14.
[20] COL Robert Dobson, USMC (ret.), "Distributed Operations Hurdles," *Marine Corps Gazette*, October, 2004.
[21] Robert H. Scales, Jr. *Yellow Smoke: The Future of Land Warfare For America's Military*, Baltimore, MD: Rowan and Littlefield, 2002; and Richard Sinnreich and Williamson Murray, "Joint Warfighting in the 21st Century," 2002, Alexandria, VA: Institute for Defense Analysis, pp. 10-12.

operational tempo and fluidity inherent to maneuver warfare. Such operations avoid linear, sequential and predictable operations, and extensive reliance on attrition.

By increasing the ability to simultaneously attack in many directions with all forms of fires and maneuver, distributed operations create *continuous pressure* on the opponent. The resulting relative tempo prevents the opponent from adapting or readjusting his force posture or from effectively reconstituting capabilities. Continuous pressure degrades the enemy's overall combat effectiveness, produces paralysis or induces systemic collapse. The ultimate aim of any commander is to "implant a picture of defeat in his opponent's mind."[22] Continuous pressure, over the breadth of the battlespace, from multiple lines of attack, is how the Corps seeks to inject this dim chance for success into the opponent's mind.

The combination of these characteristics blinds and disorients the opponent, and produces a sudden psychological dislocation when the opponent realizes that his options and assets are declining at an accelerating rate.

The latest iteration of Marine service concepts, in *Expeditionary Force 21* (EF 21), sustains the original thrust behind distributed operations, particularly in emphasis on the amphibious set of missions.[23] This service vision supports the *Cooperative Strategy* need to:

> Conduct sea control and power projection in a more distributed fashion in littoral environments. This includes employing forward deployed and surge expeditionary forces that are task-organized into a cohesive amphibious force in order to provide scalable options to defeat land-based threats, deny enemy use of key terrain, or establish expeditionary advance bases and oceanic outposts as described in EF 21.[24]

However, while the Marines got locked into a good solution set for the problem of the 1990s, the technological developments required for that solution did not keep pace with emerging threats. Stand-off ranges for amphibious operations, stated at 25 miles, were challenged by projected threat abilities to identify and strike at the landing force with super-sonic missiles. The requirement for self-deployment and seamless transition to maneuver ashore gave the AAAV/EFV dual requirements for water and land operations from a single vehicle that drove up both system complexity and costs. The resulting hybrid solution, a large vehicle that could plane on the surface at speeds of 25 MPH, was sub optimized for the increasingly lethal area denial threat. The program offered an expensive solution to a critical national capability, but at $12-15M a copy with extensive O&M costs, it was not seen as cost effective. Even more daunting was the limited force protection the vehicle offered, a $15M target for a $150 EFP. Eventually, the Marines have realized that they must continue to search for an operationally relevant capability that better deals with the ground side of the equation. The Amphibious Combat Vehicle program reflects this critical adaptation, as the continued search for creative solutions to support hi-speed and self-deploying vehicles.[25] Marine concepts underscore the greater need for standoff distances of 65 nm, the need for distributed maneuver thru multiple penetration points, and critical need for a combination of connectors to gain positional advantage in the complex littoral terrain.[26]

Distributed STOVL Operations

In parallel with this new technology, the Marines are adapting their doctrine and tactics to maximize aviation support to the MAGTF via a concept known as Distributed STOVL Ops or DSO.[27] The

[22] Richard E. Simpkin, *Race to the Swift: Thoughts on Twenty-First Century Warfare,* London: Brassey's, 1994, p. 227.
[23] *Expeditionary Force 21, Forward and Ready: Now and in the Future,* Washington, DC: Headquarters, Marine Corps, March 4, 2014.
[24] Department of the Navy, A Cooperative Strategy for 21st Century Seapower: Forward, Engaged, Ready, Washington DC, March, 2015, p. 32.
[25] General Joseph Dunford, Testimony before the Senate Armed Service Committee, Washington, DC, Feb. 2015.
[26] EF 21, p. 22.
[27] This section relies heavily upon the description provided in LtGen Jon Davis, USMC, "Forward to the Fight," Marine Corps Gazette, May 2015, pp. 20-42.

capability inherent in a STOVL jet allows the Marines to operate in pretty limited or adverse conditions and from remote locations where few airfields are available for conventional aircraft. The F-35B supports doctrinal maneuver warfare and operational needs for close air support in austere conditions, and it does so in the locations our Marines need them the most. The ability to operate from runways of less than 3,000 feet provides a more than three-fold increase in the number of airfields worldwide that STOVL aircraft can use. STOVL aircraft can operate from expeditionary airfields constructed from airfield matting or on no airfield infrastructure such as developed roads or even large parking lots. Naturally, the Marines have used this flexibility to a degree with the AV-8B Harrier and thus are adapting a skill set within a changed environment.

The foundation of future STOVL operations is the F-35B Joint Strike Fighter executing DSO to exploit the agility and multi-faceted capabilities of the 5th Generation jet. DSO is a task-organized MAGTF operation employing STOVL aircraft in a distributed force posture, independent of fixed infrastructure, but just on a temporary basis. The transitory use of DSO sites mitigates the antiaccess/area denial (A2/AD) threat, increasing the sites the opponent has to reconn, reducing the effectiveness of preplanned targeting, expanding the possible sites they must strike with G-RAMM systems, and cutting the number of assets at risk in each location.

DSO increases early Phase I deterrence efforts and greatly increases sortie generation rates throughout a conflict. The critical component of DSO is having F-35B aircraft launched from a sea or land base to conduct multiple missions, with gas, bullets and bombs provided at mobile forward arming and refueling points (M-FARPs) located closer to or within the operating area. The planes can return to their seabased platforms or use a field on land. In this way, the M-FARPs achieve protection incrementally by dispersion, mobility, and deception, while the aircraft operate and rearm outside the threat engagement zone. This is certainly not a new competency but it is an extension under new circumstances and thus a major adaptation.[28]

If one needed to wrap up the stream of adaptation over the past generation within the Marine Corps, I would summarize it as "the end of the Tarawa Syndrome." The Marines realize that "hitting the beach" is passé but that expeditionary excellence is not. Creating a large beach may be old fashioned but creating and defending a lodgment as part of a larger joint campaign may not be.[29] Adaptation, to both new opportunities and to evolving threats has been the order of the decade, despite the necessary application of the Marine Corps in two protracted counterinsurgencies.

Additional Amphibious Adaptations

The Marines need to extend their work to adapt to 21st Century challenges, and the following section details areas where particular payoff can be garnered. [30]

Robotics and Unmanned Systems

The Marine Corps is not new to UAS, having been the first U.S. military service to acquire Remotely Piloted Vehicles for intelligence and surveillance tasks in the 1980s from Israel. The MCWL has maintained an active experimental effort in small and micro-UAVs for decades, and the Marines have been at the forefront of the use of both unmanned ground vehicles for detecting mines and in the use of UAVs for logistics.[31] That said, much more can be done in the employment of UAVs for long loiter fire support to distributed ground units as captured in operating concepts going back for over a decade now. The Marines

[28] See Bill Sweetman, "Marines Shift F-35 Deployment Plans," Ares, accessed at http://aviationweek.com/blog/marines-shift-f-35-deployment-plans.
[29] Robert O. Work and F. G. Hoffman, "Hitting the Beach: Future Amphibious Capabilities," *Naval Institute Proceedings,* Nov. 2010.
[30] Office of Naval Research, *Naval S&T Strategy: Innovations for the Future Force,* Washington, DC: Department of the Navy, Jan. 15 2015.
[31] Marc Wohlsen, "Delivery Drones Aleady Exist," *Wired,* Jan. 6, 2014, at http://www.wired.com/2014/01/delivery-drones-already-exist/

may have been the first to employ UAS, at the direction of civilian leaders. But they emphasized intelligence and logistics over fire support.

Additionally, there is a lot of potential in UUV for countering mines in shallow waters, and there is an additional rich vein of unexploited combat power in unmanned combat breaching systems. For example, many existing Amphibious Tractors could be converted to Autonomous or Remotely Operated Assault Breaches. The first wave that hits the beach in a truly contested landing in the next war should be completely unmanned, but capable of conducted beach reconnaissance, mine clearing, and suppressive fires. [32]

There is also a lot of potentially in applying Marine lessons in UAV Logistics to robotic surface vehicles to deliver combat service support from shipping directly to the landing area. A swarming logistics train is a feasible concept.[33]

Exo-Skeleton Capabilities

A natural transition from purely unmanned system is the employment of human performance augmentation from exo-skeleton technologies.[34] The use of lower body exo sets could be a huge advantage to ground units in certain operational contexts. I can think of two major scenarios where this technology could be immediately useful; in reconnaissance teams and in urban operations.

Strategic Reconnaissance Teams capable of deep interdiction operations with heavier loads, over longer periods of time, and over rough terrain. Using the load bearing capacity of the emerging Lower Extremity model, a strategic reconnaissance team could be inserted much further from its objective area to preclude detection during insertion. With the additional endurance and mobility afforded by the system the team could travel further and farther, without tiring the team when it arrives at a hide site. A special operations unit could carry more mission equipment or more rapidly transit an austere area or complex terrain than is possible today. With the inherent load capacity of the system, the team could lengthen mission performance periods, enhance mission capability with added systems, and preclude the need for additional logistics resupply that might compromise the team's position.

Another option is the design and fielding of *urban combat teams* capable of bringing heavy weapons, more munitions, and self-powered breaching or surveillance systems to city fighting. Exoskeleton clad teams could bring more firepower, greater mobility enhancing systems, and highly advanced force protection/body armor systems to bear than current infantry units. Exo-skeleton-clad teams could use the power of the system's energy pack to operate weapons for creating holes in walls, clearing rooms, or employing scalable lethal and less than lethal fires. Such teams could include designated team members with different versions of the suit for various roles with an urban fighting unit. Some members could use the technology to carry significantly increased forms of body armor. Other team members could be heavy weapons operators, or breachers, and others could carry additional munitions for the gunners. The capacity of such teams to rapidly penetrate into urban gaps, employ firepower, and maintain the momentum of the attack may preclude the traditional difficulties of dangerous and predictable room clearing. The Battle for Fallujah might have been an entirely different affairs with exoskeleton supported fighters.[35]

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[32] J. Noel Williams, Amphibious Maneuver Warfare 2.0" Naval Insitutte Proceedings, Nov. 2012; J. Noel Williams, "A Fleet for the Unmanned Era," *Naval Institute Proceedings,* Nov. 2014.

[33] Robert Brizzolara, "The Swarm: Autonomous Boats Take on Navy Missions," in *Naval Science and Technology Future Force,* Winter 2015.

[34] Jeffrey L Eby "It Is Time for the *Exoskeleton,"* Marine Corps Gazette, Sept. 2005; pp. 33-35; C. Travis Reese, "Exoskeleton Enhancements for Marines: Tactical-level Technology for an Operational Consequence," M.A. thesis, Quantico, VA: School of Advanced Warfighting, 2010.

[35] See John F. Sattler, "The Battle for Fallujah," *Marine Corps Gazette,* 2005; Bing West, *No True Glory: A Frontline Account of the Battle for Fallujah,* New York*:* Bantam Books, 2005.

Expeditionary Power

Another area where the Marines have excelled in adaptation is in exploring expeditionary power sources. This line of operational experimentation has delivered results, especially in Afghanistan to date. Technological developments in this field will produce more power, greater flexibility in operations, and lessen the load on tactical units in maneuver. All naval forces will benefit ultimately from advances in power generation, but the tip of the tactical spear should not be overlooked. One can envision better power sources improving C2, intelligence, and logistic burdens, but we should not overlook potential advances in firepower as well. We can expect further advances in this area which will hopefully increase combat effectiveness and efficiency, while minimizing the exposure of human and material resources in support tasks and sustainment.[36]

Counter-G-RAMM

Finally, future Marine Air-Ground Task Forces may no longer have complete air superiority against cheap, low flying drones and other Guided-Rocket, Artillery, Missiles and Mortars. Tomorrow's improvised explosive devices may not be strewn along the ground, instead they could be IEMs or Intelligent Explosive Munitions delivered by small drones with target recognition technologies. They may also be highly precise fires placed on Marine units. Such forces may need to both control their signatures and generate decoys and have layered defenses against such systems.[37]

Conclusion

In wrapping up, it should be evident that our national security interests require us to do more than "command the commons." The Joint warfighting community recognized the importance of these operations when it put forward the Joint Concept for Entry Operations.[38] The establishment of sea control as the foundation for power projection is a priority, and the strategic advantages of exploiting sea-based maneuver must be preserved and extended to our projected security environment.[39] Tomorrow's threats are larger, more adaptive, and have greater access to technology than in the past. [40]

Our assumptions about uncontested access to critical domains are now outdated. We no longer have a monopoly over access to this great highways of the oceans and we need to break down what Tangredi called "the great walls" that seek to put our strategic freedom of action at risk.[41] Thus, we need to counter the emergent anti-access problem as suggested in the extensions beyond Air-Sea Battle.[42] We should not forget that the purpose of maneuvering thru the commons was eventually to be able to successfully maneuver into and achieve assigned political objectives in the risky *Contested Zones*. Our policy masters will eventually expect us to contest for control over those dense physical spaces where populations live, financial institutions have assets, political governance is situated, and where transportation, telecommunications and energy networks converge. To advance and secure our nation's interests, we must master the chaos and ambiguity of the Contested Zones in the littorals. That is where future fights will be won or lost, and now is the time to begin *adapting* to that reality.

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[36] As suggested in *Cooperative Strategy for 21st Century Seapower*, p. 29. See also Michael Gallagher, USMC Acquisition Initiatives in Tactical Electric Power USMC Acquisition Initiatives in Tactical Electric Power, NDIA conference, briefing slides, 3 May 2011 accessed at http://www.dtic.mil/ndia/2011power/GeneralSession_Gallagher.pdf.

[37] Dakota Wood, "Caught on a Lee Shore," *The American Interest* 6 (1) Sept. 2010 ;T.X. Hammes, "The Future of Warfare: Small, Many, Smart vs. Few & Exquisite?, *War on the Rocks*, July 16, 2014.

[38] Martin Dempsey, *Joint Concept for Entry Operations*, Washington, DC: Joint Staff/J7, April 7, 2014.

[39] General Al Gray and LtGen George Flynn, USMC (ret.) "Naval Maneuver Warfare Linking Sea Control and Power Projection," *Occasional Paper*, Arlington, VA: Potomac Institute for Policy Studies, August 25, 2015.

[40] F. Hoffman and G. P. Garrett, "The Great Revamp, 11 Trends Shaping Future Conflict," *War on the Rocks,* Oct. 8, 2014.

[41] Tangredi, pp. 231–252.

[42] Harry J Kazianis, "Air-Sea Battle's Next Step: JAM-GC on Deck," *National Interest*, accessed at http://nationalinterest.org/feature/air-sea-battles-next-step-jam-gc-deck-14440; Terry Morris, et al., "Securing Operational Access: Evolving the Air-Sea Battle Concept," *National Interest*, March-April 2015.

PANEL 5: MARITIME WARFARE

FUTURE MARITIME FORCES: UNMANNED, AUTONOMOUS, AND LETHAL

Dr. William F. Bundy
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Vice Admiral Thomas Rowden is leading the U.S. Navy Surface Force towards a transformation into an offense fighting force through the development and realization of the *Distributed Lethality* concept. His vision is to deploy a surface force that has offensive capability in every ship in the Navy. Vice Admiral Rowden's vision is to create and maintain credible combat power as a strategic deterrence to aggression throughout the global maritime domain.

Distributed lethality represents a significant operational concept that will ultimately extend across the U.S. Navy combat force. This of course is an evolving capability based on ships that are in the fleet today and those that are expected to follow through the shipbuilding program over the next 30 years.

At the same time, the Deputy Assistant Secretary the Navy for Unmanned Systems, Frank Kelly, is advancing a program to develop unmanned air, surface and undersea vehicles with the possibility of those vehicles being deployed as semi- and fully-autonomous assets. Unmanned systems have the potential to deliver capabilities that are now delivered by major combatants, aircraft and submarines.

The combination of Distributed Lethality and unmanned systems has the potential for revolutionizing maritime warfare. Imagine if you will the arrival of USS BAINBRIDGE DDG 2001 in the South China Sea to execute a routine maritime patrol in July 2045.

On Patrol in the South China Sea - July 2045

USS BAINBRIDGE DDG 2001 is underway in the South China Sea on maritime security patrol. BAINBRIDGE's mission is sea surveillance and maritime security operations that are designed to maintain free access to the maritime commons. Operating 90 miles south of Fiery Cross Island, a People's Republic of China maritime security base, BAINBRIDGE has deployed three unmanned combat patrol surface vessels, an unmanned aircraft patrol consisting of three armed airships, and two unmanned submarines to extend the surveillance coverage of the ship.

In mission control, operators are monitoring communications and data links from their fully-autonomous ships and aircraft that have been programmed to conduct maritime patrols under mission orders and decision-making control functions that are bounded by prudent navigation, territorial restrictions and rules of engagement. BAINBRIDGE's unmanned patrols have the technology to sense the environment, detect and track aircraft and vessels, and report their operating pictures to BAINBRIDGE via system-to-system networks that create an overall operating picture of the battlespace.

BAINBRIDGE's patrol ships and aircraft have been assigned areas to conduct surveillance and are expected to execute mission orders that direct their actions based on the current security environment. Rather than remotely control BAINBRIDGE's unmanned air and surface patrols, advances in intelligent agent-technology have produced assurances that each of the ships and aircraft will operate within the rules of safe flight and navigation as well as laws that respect territorial limits and exercise freedom of navigation. Intelligent agent-technology combined with sensor and decision-making capabilities enable BAINBRIDGE's patrols to operate in semi-autonomous and fully-autonomous modes of operation.

Developing, testing and employing intelligent control systems in unmanned ships and aircraft will be a major step forward in the acceptance of fully-autonomous fleet elements. In the past, ships and maritime patrols were commanded solely by humans. Those captains and flight leaders were required to exercise initiative and judgment in executing their missions. They were all educated, trained and experienced in their positions as operational leader. They often made subjective decisions based on incomplete information and tensions that involved executing the mission while avoiding risk and possible untoward incidents or collateral damage in combat situations.

The challenge between now and 2045 is to develop technology that will advance artificial intelligence to a point where commanders can be assured that autonomous systems will make "decisions" that conform to safety of flight and navigation and ultimately the laws of armed conflict. This is a vision of course, but a vision that seems within reach for the Navy. Deploying unmanned fully-autonomous ships, aircraft and submarines across the maritime domain would revolutionize maritime warfare.

Advancing Maritime Unmanned Systems

During a recent conference on maritime unmanned systems, experts including scientists, technologists, Navy program managers and war fighters presented arguments for employment of unmanned remotely-controlled, semi-autonomous and fully-autonomous air, surface and undersea vehicles. There was optimism during the conference with a note of caution concerning the limits to which commanders would be assured that "machines" would exercise the necessary behaviors to meet missions beyond simple surveillance and reconnaissance. The idea of unmanned systems with the capability of performing detect-to-engage operations was a point a repeated discussion.

The acceptance of semi-autonomous and fully-autonomous fleet elements is predicated on the reliability, surety and successful testing of sensor to processor to control functions in unmanned ships and aircraft. The persistent question was would unmanned systems adhere to safe navigation, safety of flight and the laws of armed conflict while executing "assigned" maritime missions ordered by operators and commanders.

The Department of Defense has published guidance on the design, development, construction and intended operation of unmanned systems. That guidance requires system controls and functions that enable commanders and operators to maintain control of unmanned systems through the range of military operations.

Our question for discussion is: Can innovative thinkers in our defense or federal laboratories, industry research and development centers, and/or warfare centers create unmanned systems that can operate as part of the fleet and deliver on the vision of autonomous operations?

This is an urgent question and necessary quest because our competitors are catching up with us on the evolution of unmanned systems. Just recently, an article published in the *National Interest* magazine reported on Russian efforts to advance underwater spy drones. Dave Majumdar reported:

> *Russia is developing a family of unmanned surface and underwater vehicles, a high-ranking official in that country's navy said this week. While the U.S. Navy has been developing naval drones for more than a decade, this is the first indication that Moscow is working on similar capabilities.*
>
> *"Work will be continued in 2016 to develop unmanned boats that can be based both on ships and on the shore," Vice Adm. Alexander Fedotenkov, deputy commander-in-chief of the Russian Navy told the TASS news agency on Jan. 21.*
>
> (Russia vs. America: The Race for Underwater Spy Drones, Dave Majumdar, the National Interest, Jan 21, 2016)

Our U.S. Navy fleet evolution and structure question points to the need to continue and possibly accelerate research and development on unmanned systems less we allow near-peer competitors to close the gap and take away our existing advantage.

PANEL 5: MARITIME WARFARE

THE PRISM OF CLASSICAL NAVAL STRATEGY: ANOTHER PERSPECTIVE ON JAM-GC AND 21ST CENTURY OPERATIONAL CONCEPTS

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In March 2015 the Chief of Naval Operations, in cooperation with the Commandants of the Marine Corps and Coast Guard, released the sea services' new strategic document *The Cooperative Strategy for 21st Century Seapower*. The document encourages sailors, marines, guardsmen, and navalists to understand strategy and to think strategically. However, despite that direction, the dialogue that has loomed largest in the naval sphere over the past several years has not been strategy at all, but instead debate about an operational concept. First as Air-Sea Battle, and now as the Joint Concept for Access and Maneuver in the Global Commons or JAM-GC, this operational thinking has been the center of naval discourse, with a multitude of writings, panels, and lectures from its developers, supporters, and opponents. In the back and forth we have been introduced to Offshore Control and Joint Operational Access as well.[1]

How the United States military and allied navies counter attempts at Anti-Access and Area-Denial has very important tactical and operational ramifications for the future of the force. However, it is also important to place the dialogue on operational concepts and operational thinking within strategic context. Strategy is about making choices and designing efforts to achieve national objectives. Debate that attempts to derive a consensus on a single operational concept removes choices, and removes the ability to participate in the art of naval strategy. Therefore, it is important that we make an effort to place analysis of counter-A2AD operating concepts within a larger discussion of strategy, one rooted in the classical concepts of naval warfare.

The Framework of Naval Strategy

The underlying ideas behind concepts like JAM-GC, Offshore Control, and Joint Operational Access, when examined through lens of strategy, can help us avoid the funhouse mirror of budget policy and administrative maneuvering in the Pentagon. Yet, even with the volume of writing on naval operations in the last decade, articles have tended to lack a genuine engagement with the concepts and structures in the classical naval theory. A careful reading of many of the articles on this subject, and a detailed consideration of their footnotes, frequently offers readers the conclusion that this dialogue has been divorced from the actual thinking, writing, and theory of naval strategy.[2]

As Bernard Brodie once wrote, "contrary to popular belief, there is nothing especially esoteric about the basic principles of warfare."[3] From the works of Mahan, Corbett, and Castex, and elucidation of others like Brodie and Rosinski, we have the foundational idea that naval warfare begins with the question of command of the sea. But command of the sea is generally insufficient except in the most theoretical form of naval war. The classical strategists all agreed that while it may be possible, and was the best case scenario, it was unlikely that establishing command would be enough to force the political objective desired. The enemy gets a vote, and rarely gives up easily. As a result, there had to be a next step in a naval strategy, a step where the control that command of sea offered was exercised. To put it as simply as possible, the exercise of this control is achieved by using the "3 B's" or blockade, bombardment, or putting boots on the ground. This is what led Corbett to his famous but often misrepresented dictum that "in no case can we exercise control by battleships alone."[4]

[1] Joseph Dunford, Jonathan Greenert, Paul Zukunft, "A Cooperative Strategy for 21st Century Seapower," (Washington D.C.: Department of the Navy, 2015).
[2] Fontenot Greg and Benson Kevin, "Way of War or the Latest 'Fad'? A critique of AirSea Battle", *Infinity Journal*, Vol. 2, No. 4, Fall 2012, pp. 22-25. Nathan K. Finney, "Air-Sea Battle as a Military Contribution to Strategy Development", *Infinity Journal*, Vol. 2, No. 4, Fall 2012, pp. 8-11. Terry S. Morris, Martha Van Driel, Bill Dries, Jason Perdew, Richard Schulz, and Kristin Jacobson, "Securing Operational Access: Evolving the Air-Sea Battle Concept," *The National Interest Online*, 11 February 2015.
[3] Bernard Brodie, *A Layman's Guide to Naval Strategy* (Princeton, NJ: Princeton University Press, 1943), p. 13.
[4] Julian S. Corbett, *Some Principles of Maritime Strategy* (1911, Annapolis, MD: Naval Institute Press, 1988), p. 114.

Today's discussions tend to ignore these foundations entirely. However, when the lens of classical naval strategy is used to view the challenge of obtaining a strategic outcome in an A2AD environment, the operational concepts highlighted over the past two or three years begin to fall into place. When reduced to the basics, is not JAM-GC a discussion of establishing command of the sea in a modern A2AD environment? By extension, Offshore Control is our 21st century concept of an East Asian blockade, the CSBA vision of AirSea Battle has a certain focus on bombardment, and Expeditionary Force 21 and Joint Operational Access Concept are about putting boots on the ground. By placing these operational concepts within a framework that starts with strategy, instead of tactics and technology, we gain a different view.[5]

Strategic Practice v. Operational Planning

Establishing command of the sea and exercising the control allowed by that command through blockade, bombardment, or putting boots on the ground, is a simplified way of looking at the basics of naval strategy. Admittedly, from this brief discussion these principles appear sequential but that is not actually the case. They are simply building blocks of naval warfare and can be put together in an almost infinite number of ways. Mahan described the conduct of war as an art, writing: "art, out of materials which it finds about it, [it] creates new forms in endless variety...according to the genius of the artist and the temper of materials with which he is dealing."[6]

Understanding how to combine these elements of naval warfare is the central task of naval strategy. Each has its own temporal and geographic elements in play as well as a moving scale of totality. Despite what recent writing on naval affairs tells us, the individual operational parts should not be considered strategies by themselves or in isolation. Instead, if a navy's fleet and resources are its means these should be the ways in which a strategist employs them in order to achieve the political ends desired by the conflict. Thus, localized command of the sea may be all that a naval force can accomplish, but it also may be sufficient to achieve the operational objectives desired, or needed, for the political result. Command might also only be established for a very specific period of time. As John Hattendorf has written, "there are gradations that range from an abstract ideal to that which is practical, possible, or merely desirable...control is to be general or limited, absolute or merely governing, widespread or local, permanent or temporary."[7]

What tends to be lost when we focus on the individual operational concepts, or the specific tactical challenges of an A2AD network, is a larger strategic view. We must remember that the scaling of the principles of naval warfare, and their combination into a method by which the naval strategist hopes to achieve his nation's goals, is the heart of the task, not just the tactical employment of technology for kinetic effect. These are some of the fundamentals we should be discussing when considering the doctrinal and operational writing of maritime affairs in the 21st century.[8]

Using Another Lens

As Captain Haynes ably demonstrated in his recent book *Toward a New Maritime Strategy*, we navalists tend to be very comfortable engaging in the discussion of how new technologies and new tactics fit into new operational concepts but that doesn't mean we extend that comfort to strategy.[9] We recognize how multiple tactics and multiple technologies can be combined for synergy into an effective operational ideal. But taking the next step, viewing strategy in a similar way and exercising the art of combining different operational concepts to achieve the nation's objectives, we tend to falter. We must always include this element of the discussion. Just as we always look "downward" to the development of new weapons and technology, our discussions must also look "upward" to how they contribute to strategy. Use of and understanding of the established frameworks of naval strategy will help us take the bearings we need to better chart our course.

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[5] T.X. Hammes, "Offshore Control: A Proposed Strategy," *Infinity Journal*, Vol. 2, No. 2, Spring 2012, pp. 10-14. Jan Van Tol, et al, "Air Sea Battle: A Point-of-Departure Operational Concept," (Washington D.C.: The Center for Strategic and Budgetary Assessments, 2010). U.S. Marine Corps, "Expeditionary Force 21: Forward and Ready, Now and in the Future," (Washington, D.C.: Department of the Navy, 2014).

[6] Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land* (1911, Westport, CT: Greenwood Press, 1975), p. 299.

[7] John B. Hattendorf, *Naval History and Maritime Strategy: Collected Essays* (Malabar, FL: Krieger Publishing, 2000), p. 236.

[8] Brodie, p. 14.

[9] Peter Haynes, *Toward a New Maritime Strategy* (Annapolis, MD: Naval Institute Press, 2015).

PANEL 6: HUMANITARIAN ASSISTANCE AND DISASTER RELIEF

ADVANCING THE U.S. SEA SERVICES' CAPACITY TO RESPOND TO URBAN HUMANITARIAN DISASTERS AND COMPLEX EMERGENCIES

Dr. Michael D. Lappi
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The role of the United States Sea Services during Humanitarian Assistance and Disaster Response (HADR) events will become a critical component of international relief efforts in an era of increasing global warming and coastal urbanization. Core amphibious operational capabilities and the ability to remain fully self-supporting during prolonged crises will provide an unparalleled opportunity to influence lifesaving efforts on a global scale. However, the ability to fully utilize the immense capability of the U.S. Navy, Marine Corps, and Coast Guard team requires continued emphasis on coordination with civilian counterparts as well as a renewed appreciation for the mastery of the core guiding principles required during these complex relief operations. With millions of lives potentially in the balance, it is imperative for the Sea Services to expand education, training, and partnership focused exercises and simulations in order to fully realize the potential of the fleet.

Coastal urbanization is a critical vulnerability throughout the globe and comprises a significant region of risk encompassed by U.S. Sea Service operations. Littoral and amphibious operations to address the emergent needs of these areas has been demonstrated in recent years to be not a matter of determining "if" it will happen, but a question of "when" it will happen. Operations within these coastal regions can be considered most hazardous in countries already plagued with poor infrastructure, growing population, and sparse job opportunities. Migration towards coastal regions typically supporting port or other seafaring activities can dramatically impact the natural protections afforded by marshland and rugged vegetation as areas are cleared for housing, subsistence activities, or port development. These dramatic perturbations in the natural ecosystem can be further enhanced by failures to manage human waste and free flowing waterways. In this setting, urbanization can result in concentric ecosystems of poverty, poor education, criminal activity, and decaying societal values unless fully managed by a competent and effective national system of governance. Without this strong national leadership, the focus on infrastructure development and maintenance as well as the protection of the population become secondary to the daily management of crises. Even small perturbations in weather, environment, disease management, or an infrequent catastrophic event can cripple the patchwork support network of the community. Without this marginal support, humanitarian activities become mired in community level chaos as dysfunctional organizations and counter-productive management interrupt the flow of recovery personnel and supplies. It is within this potentially cataclysmic region that the U.S. Sea Services will be expected to execute sustained and highly efficient operations.

Key to the creation of a competent and highly resourceful U.S. Sea Service response is the development of an educational system fully prepared to meet the leadership and operational demands of this dynamic environment. Embracing the spirit of the Oslo Guidelines and in particular the concept of "resource of last resort," U.S. military leaders must fully comprehend the impact of employing military personnel, equipment, and capabilities into existing humanitarian community actions during crisis response efforts. While military operations can easily overrun a region, it is the measured employment of critical assets in coordination with civilian responders that will dramatically impact the overall response. Areas of particular emphasis for educational endeavors include security cooperation, coordination and integration of logistics (including integrated airlift capability), heavy equipment and construction operations, internally displaced personnel and refugee management, the revolution in information communications technologies used to assess and manage crises, Sphere Standards, and the basics of the UN cluster systems.

Equally important to comprehensive education is the implementation of intense training programs that emphasize the critical military capabilities that cannot be easily replicated by civilian organizations. Core training leading to expertise in mass casualty response, high intensity and sustained logistics, and

more effective command and control functions provide the opportunity to create the framework for concurrent or follow-on life saving operations. These functions, while practiced outside of strictly military organizations, are ingrained in military operations and married to the stress and horrors of battle that can also be expected during critical or catastrophic disaster and complex emergency response events. More importantly, the presence of experienced military personnel that consider these operations as an accepted duty and responsibility will provide an opportunity for daily mentorship to junior personnel and the backbone of a sustained community. Collectively, this cadre of experts develops a persistent and resilient force capable of adapting to the intense variability of rescue operations.

Finally, education and training programs, while of vital importance to HADR operations, are of secondary importance to the necessity for partnership with the humanitarian relief community. The benefits of inclusive education and training programs that consider the value of partnerships, and develops the network, relationships, and camaraderie required for sustained operations is the true future opportunity for success. A deeper understanding for the people, processes, and governing thought within the humanitarian community creates the foundation of an integrated and intelligent relief system that is significantly more responsive, flexible, and agile than current efforts. These partnerships can and should be nurtured through routine and periodic exchange programs, combined exercises, and collective planning activities that allow organizations with differing cultures and structures to learn to work together.

Conclusion

Despite the fact that HADR is currently prioritized twelfth out of twelve U.S. military missions in the 2014 Quadrennial Defense Review, it is the one crisis mission area that we definitively know will be executed on a routine basis. The relatively low cost of increasing and improving current education, training, and partnership opportunities is a critical investment in the future success of the U.S. Sea Services. Greater attention to these areas will ensure the professional execution of these critical lifesaving missions in increasingly complex urban environments as well as during complex emergencies for decades to come.

PANEL 6: HUMANITARIAN ASSISTANCE AND DISASTER RELIEF

THE URBAN DILEMMA IN CIVIL-MILITARY HUMANITARIAN COORDINATION

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The humanitarian sector faces new challenges and opportunities due to urbanization, new manifestations of violence and their accompanying protection mandates and a growing number of stakeholders. Militaries coordinating in humanitarian response must also adapt to this new environment.

The trend that cannot be ignored or reversed and will clearly define the environment for future humanitarian activities and thus, military coordination, is that of urbanization. Military operations in support of humanitarian missions will increasingly take place in cities. Rapid urbanization means that the urban population with grow to over 66% by 2050 while the rural population shrinks[1]. At present, 3 million people move to cities every week[2]. These urban centers also concentrate risks and hazards to crisis compounding the likelihood of urban based crisis and response. Humanitarian crises also drive displacement into cities as the portion of refugees now living in urban areas is over 59% and growing[3]. As such, the ground in which militaries engaged in supporting humanitarian missions is shifting into increasingly complex environments with a multitude of challenges.

Conflict induced humanitarian crises that trigger military coordination make urban crises even more likely. Power is still reliant on territorial control and cities represent the most valuable territory in modern states. Cities may become the central battleground as both seats of power and conflict over power. As violence is no longer the monopoly of the state and their militaries (bound by international humanitarian law), the growing number and variety of actors (unbound by international humanitarian law) in urban crises that can influence security will make missions more complex.

Most importantly, urban crises involve a wider variety of civil actors beyond the traditional international aid agencies, state authorities and national militaries. These new urban landscapes have a multitude of stakeholders that may need to be engaged in coordination efforts or at least addressed as a powerbroker or threat to the mission. They include local municipal authorities that now often lead and coordinate the response, community based organizations as well as local charities that may participate in a bulk of the effort on the ground, the private sector supplying a broader range of goods and services, militarized police and private security forces that have been present before the crisis and extremely violent and competing gangs with de facto territorial control. Understanding who these actors are, their role, power relations, capacity and legitimacy can be difficult and requires a deeper understanding of context. Humanitarian organizations themselves find this process challenging when arriving to an urban crisis and do not yet have industry wide formalized methods of rapidly assessing these multitude of stakeholders.

The latest trend and recommendation for humanitarian action in urban crisis, codified within the Urban Charter to be released for the upcoming World Humanitarian Summit, is to promote area-based programming (ABP). This type of humanitarian operation emphasizes a more localized and holistic approach to crisis response with a detailed understanding of the local context to drive operations that are community-based to ensure appropriateness and sustainability. This approach requires a more inclusive approach than the current cluster system allows by taking into account the wider array of civil society actors and stakeholders. Militaries supporting humanitarian missions or providing peacekeeping and security for such operations must also face this range of actors.

Additionally, the geography and density of these growing urban landscapers make them operationally challenging. Many of these rapidly growing cities are marked by large urban slums that make up over

[1] United Nations. *World Urbanization Prospects 2014:* United Nations Publications, 2014.
[2] International Organization of Migration. *World Migration Report 2015*. IOM, 2015. Available at https://www.iom.int/world-migration-report-2015
[3] Crawford, N, J Cosgrave, S Haysom and N Walicki (2015), Protracted displacement: uncertain paths to self-reliance in exile, Overseas Development Institute, London.

50% of cities in some cases. At baseline urban slums prove very difficult, if not impossible, to police. They are often completely unmapped areas - difficult to traverse, marked by narrow alleys and footpaths without any formal roads, signs or lighting and remain largely unfamiliar to non-residents. Even police in many of these cities do not venture into these areas due to their unfamiliarity and gang control.

The urban violence that marks many cities is also an emerging challenge even in "non-conflict" disasters (e.g. an earthquake in San Pedro Sula, Honduras) as baseline rates of violence resemble or surpass declared wars and local capacity or willingness to address it remains weak[4]. The German Intelligence Agency, in their document on "Ungovernable Megacities," asserted, "Mumbai, Mexico City and Jakarta are only partially able to carry out their original core responsibilities of protecting their population from violence and destabilization.[5]" Taking on a protection mission into such a scenario for the local population or the humanitarian actors themselves presents a new challenge for militaries. Safety for humanitarian staff is difficult to ensure as the situation on the ground can be fluid with information (and rumors) spreading rapidly and territorial control often in flux.

Moving forward, a new model of civil-military humanitarian coordination may be required. The principles guiding this will undoubtedly require closer communication. While humanitarian communication has become more open with mapping (e.g. crisis-mappers) and information sharing platforms. Military communication systems, by their very nature, are private. A new platform may be required that allows better communication at some level between civil society actors and the military. This may be limited to higher levels with the U.S. Agency for International Development's Office for Foreign Disaster Assistance or other international humanitarian architecture but a new platform will likely be required to share the detailed and context specific information required in urban crises and specifically area based programming. Humanitarian actors may also have to align closer to the military for the sake of security at the cost of some neutrality if hoping to reach beneficiaries in cities characterized by the type of urban violence described above. It may be that humanitarian and military actors work hand-in-hand in certain cases rather than in a supporting role. Finally, both humanitarian and military communities would be better served learning about and exploring coordination together with joint training and workshops, collaboration on research and innovating technology together. While the characteristics of new civ-mil relationships can be described, implementing a new operational framework is far off. Yet future crises will necessitate innovative approaches and evolve new patterns of civil-military cooperation on the ground that may run ahead of any pre-defined strategy. It is imperative to urgently explore new frameworks and methods for civil-military coordination to keep pace with the changing environment.

[4] Wainer, Andrew. *Worse than War, El Salvador's Youth Caught in Web of Violence.* The Hill blog. August 3, 2015. Available at http://thehill.com/blogs/congress-blog/foreign-policy/249969-worse-than-war-el-salvadors-youth-caught-in-web-of.
[5] Chirol. *Ungoverned Megacities*. ComingAnarchy.com. 3 Nov. 2007. Available at http://cominganarchy.com/2007/11/03/ungoverned-megacities.

STRATEGIC SURPRISE AND CLIMATE CHANGE SUPPORT STRATEGIES

Dr. Joseph DiRenzo III
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The lessons learned are many just in the past two decades.

In July 1997 it was the explosion of the Soufriere Hills *volcano* in *Montserrat,* West Indies; *in* 2006 it was Hurricane Katrina along America's Gulf Coast; in 2010 it was the Haitian Earthquake; and in 2013 it was Typhoon Haiyan, also known as Super Typhoon Yolanda. What do all these events have in common? Maritime units, from the U.S Coast Guard, the U.S. Navy and other NATO nations were deeply involved in providing humanitarian assistance/disaster relief (HA/DR) in an urban setting. Each is unique in that response was modified for the event itself. However, they collectively offer a perfect set of examples to look for patterns, successful response protocols.

The devastation incurred by each of these events is significant. Take Typhoon Haiyan for example, according to UNICEF, "Typhoon Haiyan, one of the most powerful tropical storms on record, caused tremendous damage when it made landfall in the Philippines in November 2013. More than 6,000 people were killed. Thousands of homes were destroyed. Over 14 million Filipinos, including nearly 6 million children, were affected".[1]

The predicted impact of future events will have on coastal urban areas will be exasperated by climate change, especially with the expected rise in sea levels. This rise is projected all over the world. Use the Norfolk Virginia area as an example, home to the Navy's largest homeport. According to the *Washington Post*, normal tides have risen 1 ½ feet over the past decade.[2] The same article re-enforced that by the end of the century the sea level would rise 5 ½ feet. The Post article also noted in a "worst case scenario" with rapid melting of the earth's glaciers and ice caps that the rise would be over 8 foot. Now, is this science exact – no. Are there major detractors in and out of academia – yes. But all the maritime forces within the United States and NATO would be foolish to simply avoid this issue.

In addition to the rise in sea levels populations have been flocking to the coastal zone to both live and work. This has added to the concern for one simple reason. As you increase a population along a seaboard, you increase the urbanization of that area. Look at the growth experienced along Long Island sound as just one example. According to the 2007 Intergovernmental Panel on Climate Change Working Group report, "Coastal population growth in many of the world's deltas, barrier islands and estuaries has led to widespread conversion of natural coastal landscapes to agriculture, aquaculture, silviculture, as well as industrial and residential uses." [3] It has been estimated that 23 percent of the world's population lives both within 100 km distance of the coast and <100 m above sea level, and population densities in coastal regions are about three times higher than the global average".[4] This shift will exacerbate a fundamental contingency planning consideration as maritime staffs consider threat vectors. More people will be concentrated in smaller areas. The challenge in a Humanitarian Assistance Disaster Response (HA/DR) response scenario just got even more difficult because as a rapid growth in the population occurs along the coast, coupled with a desire for more and more infrastructure and a rise in sea level you suddenly have "Perfect Storm Scenario" that when impacted by an significant event, such as an earthquake, requiring a maritime HA/DR response the result could be quite over-whelming. Due to the possibility of cascading events maritime forces should continue to refine their doctrine, strategy and Tactics, Techniques and

[1] UNICEF (2013) Hurricane Relief – Philippines Typhoon Haiyan, https://www.unicefusa.org/mission/emergencies/hurricanes/2013-philippines-typhoon-haiyan
[2] Lori Montgomery (2014, May 31), In Norfolk, evidence of climate change is in the streets at high tide The Washington Post, https://www.washingtonpost.com/business/economy/in-norfolk-evidence-of-climate-change-is-in-the-streets-at-high-tide/2014/05/31/fe3ae860-e71f-11e3-8f90-73e071f3d637_story.html
[3] Valiela, I., (2006): Global Coastal Change. Blackwell, Oxford, 368 pp.
[4] Small, C., and R.J. Nicholls, (2003) A global analysis of human settlement in coastal zones. J. Coastal Res., 19, 584-599.

Procedures (TTP) to account for these new realities. The response in an urban environment in 2050 will not be what it is today.

So what approach could be taken by contingency planners and tacticians alike to prepare for the "new reality"? What events or combination of events could trigger such a need for an HA/DR response? Can thinking about scenarios that comprise strategic surprise events be used to frame the planning process? Consider this scenario, which has been widely reported by the international media, the 2000 *BBC* story "Mega-tsunami: Wave of Destruction". [5] The *BBC* story reported about growing concern of a "geological time-bombs" around the world which once "triggered" would generate a significant tsunami like event. The report centered around the island of La Palma in the Canary Island, off north Africa and a future eruption would unleash a massive landside on the western side of the island.

Based on the *BBC's* reporting a major landslide event on La Palma would set up a tsunami which would "race across the Atlantic at the speed of an airliner". The report goes on to note that the tsunami's impact on Boston would be significant along with other locations along the east coast. This would trigger a significant response by U.S. Northern Command and the DoD….think Super Storm Sandy x10. Now apply this scenario to other parts of the world, because if you believe the BBC report, and I do, the impact will be significant. There are possible "strategic surprise events" around the world.

Additionally, armed with this information you need to ask yourself --- How well prepared are the maritime services to respond, especially in an urban environment? What lessons specifically from Typhoon Haiyan and the Haitian earthquake apply here? Has any agency, including NORTHCOM or other geographic combatant commanders considered this type of scenario as a strategic surprise? What role do the maritime forces play in a whole of government response?

What do I mean by a strategic Surprise?

In their essay "Ahead of The Curve: Anticipating Strategic Surprise," researchers Peter Schwartz and Doug Randall noted that a *strategic surprise* differ from a "run of the mill surprise" in that it produces significant organization and societal impacts, challenges conventional wisdom, and is hard to imagine.[6]

In the case of La Palma, using the variables above could thinking about this kind of HA/DR response in the context of a Strategic Surprise be valuable? First, would this type of event produce "significant organization and societal impacts" – the short answer is yes based on the literature. Second, does this scenario challenge conventional wisdom? Again…looking at the literature there is a great deal of skepticism that this would occur. Ok, debate within scientific research areas is expected. Yet, major news networks from National Public Radio to the BBC have discussed it. Additionally, peer reviewed articles have explored it.

The final strategic surprise component to consider is simply….is this scenario hard to imagine? Hmmm, lets look at history and a similar type event – Hurricane Katrina. Even armed with the information/results, nearly one year to the date, from a Table Top entitled "Hurricane Pam" key planners still did not believe that a Hurricane Katrina like event could occur especially with the associated HA/DR response. Isolated case? You be the judge if a La Palma type event is possible….and how the maritime forces of the United States would approach their response.

To begin to craft a response I want to go old school and consider joint doctrine. JP 3-29 (Foreign Humanitarian Assistance) published on 3 January 2014. Joint Pub 3-29 does a perfect job of describing the role played, "Because Department of Defense (DOD) will normally be in a supporting role during FHA contingency operations, the joint force commander (JFC) may not be responsible for determining the mission or specifying the participating agencies. Appropriate organization, command and control (C2), and, most important, an understanding of the objectives of the organizations involved are all means to build consensus and achieve unity of effort."

[5] BBC (2000) Mega-tsunami: Wave of Destruction. http://www.bbc.co.uk/science/horizon/2000/mega_tsunami_transcript.shtml
[6] Peter Schwartz and Doug Randall, (2007) "Ahead of the Curve: Anticipating Strategic Surprise," in Francis Fukuyama, ed., *Blindside: How To Anticipate Forcing Events and Wild Cards In Global Politics* (Baltimore: Brookings Institute Press, 93–108.

The unity of effort piece is key….but this has to extend well beyond the tactical level response. The real value is to look at the lessons learned from multiple events (such as Haiti from an urban perspective) and re-craft doctrine, campaign plans and standing "quick response cards" in the tenants of strategic surprise and then using modeling and simulation to "game out" scenarios to refine the products you have, developed.

As part of the development process, as products such as doctrine are revised leadership needs to ensure every effort is undertaken to reduce the group-think. How do you do that….by ensuring an "Arch Protagonist" is appointed to inject "disruptive think". This approach is invaluable in strategic doctrine development where the norm is established.

The final area that needs to be re-enforced is leverage every opportunity before an HA/DR event to get to know your partners – especially the agencies like USAID that coordinate aid and the Non-Government agencies. Notes JP 3-29:

> *Increasingly, the resources of the international business community are being utilized to mitigate human suffering associated with disasters. Businesses donate talent or in-kind goods and services to disaster relief and recovery operations in developing countries and wish to ensure that their help is delivered in a coordinated and effective manner. The same is true for foreign disaster response. Many large private-sector companies maintain disaster/crisis response teams that can respond and add value to USG operations by providing infrastructure and other supporting services. DOD mechanisms that plan for, train, and implement emergency responses to disasters should consider the private sector. This should be done through USAID OFDA, which maintains communication with UN agencies and other international organizations and private sector donors to ensure the USG complements rather than duplicates existing assistance programs. In addition to large transnational corporations, the private sector also includes the local, national, and other companies and organizations which should be considered and engaged through the country team, USAID, or other existing USG channels.*[7]

In conclusion, the world is changing. Our climate is indeed changing….its' "vital signs" highlight projected changes in sea level height and storm significance. Couple this with the destructive power of the La Palma volcano and the need for a well developed and trained HA/DR effort that can scale up and down, and work across both interagency but also internationally – with governments and NGOs alike. How can the Maritime Forces of the United States be ready for this type of issue…simply…look at what science is saying what the art of the possible --- what scenarios would create a possible HA/DR event..especially in an urban event…then use a strategic surprise framework to prepare for it. Understand who your partners are, what the hurdles are, what the authorities are upfront will make the response much easier to coordinate. This isn't anything new in HA/DR….but what is new is the partners involved…what if China or Russia rush a response to scene…are your plans flexible enough to work with them?

One final recommendation….after your strategy, doctrine and plans are revised to considered the unexpected….set up a group to critically review them….using disruptive thinking…look for the gaps by asking the *what if* questions. By doing so your overall response will be more resilient, and better prepared to handle a La Palma event. Strategic Surprise is coming and HA/DR planners looking at an urban environment need to embrace it – know your partners and think disruptively.

[7] Joint Publication (JP 3-29) (2014, January 3) Foreign Humanitarian Assistance. http://www.dtic.mil/doctrine/new_pubs/jp3_29.pdf

PANEL 6: HUMANITARIAN ASSISTANCE AND DISASTER RELIEF

IMPROVING CIVIL-MILITARY COORDINATION AND PROTECTING AID WORKERS

Ms. Julia Brooks
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A number of important developments and trends are forcing us to rethink humanitarian response in general, and civil-military engagement in particular. These include: the increased frequency and impact of natural disasters and complex emergencies, exacerbated by the effects of climate change; rapid urbanization and population growth, and with it, urban poverty, violence and instability;[1] and the increased involvement of international militaries in responding to these crises, alongside humanitarian actors.

To this list of trends, I'd like to add several more concerning ones: First, while large-scale killing in violent conflicts is decreasing, volatility and low-intensity conflicts are increasing.[2] Second, forced displacement is at record levels, with over 60 million people currently displaced around the globe, the majority of whom, 38 million, are not refugees but rather internally displaced.[3] If the population of forcibly displaced were a country, it would reportedly be the world's 24th largest.[4] Displacement is also contributing to urbanization in two ways: first, the majority of the world's refugees and displaced persons now end up in cities and towns, not refugee camps;[5] and second, as people remain longer in displacement, some of today's largest refugee camps – such as Dadaab camp in Kenya or Zaatari camp in Jordan – are likely to become tomorrow's cities.[6]

The third trend is growing disrespect for international law and humanitarian norms, and with it, a staggering increase – nearly four-fold – in the number of violent attacks against humanitarian aid workers over the last decade.[7] In many of the world's conflict zones – especially Afghanistan, Syria, South Sudan, Central African Republic and Pakistan – the Red Cross or blue shield, once designed to distinguish and protect humanitarians from attack, is increasingly becoming a bull's-eye. The urban dynamic is also important here, since discrimination in targeting becomes even more difficult in complex emergencies in big cities, given the density of population and complexity of actors. While some of these attacks against aid workers occur as a result of indiscriminate or mistaken targeting, the majority appear to be deliberate.[8]

Moreover, we know all too well that threats and attacks on humanitarian aid workers do not only emanate from non-state armed groups. Following the U.S. airstrike on its trauma center in Kunduz, Afghanistan on October 3rd of last year, for example, MSF facilities were hit by Saudi-led coalition airstrikes in Yemen on October 26th and December 2rd, and by airstrikes in Syria on November 21st and

[1] United Nations Office for the Coordination of Humanitarian Affairs, "OCHA in 2014 & 2015: Plan and Budget," accessed March 1, 2016, http://www.unocha.org/ochain/2014-15/field-activities.
[2] See Human Security Report Project, "Human Security Report 2013: The Decline in Global Violence: Evidence, Explanation, and Contestation" (Vancouver: Human Security Press, 2013), http://www.hsrgroup.org/docs/Publications/HSR2013/HSRP_Report_2013_140226_Web.pdf.
[3] "Global Overview 2015: People Internally Displaced by Conflict and Violence" (Internal Displacement Monitoring Centre, May 2015), http://www.internal-displacement.org/assets/library/Media/201505-Global-Overview-2015/20150506-global-overview-2015-en.pdf.
[4] "Forced Displacement: A Growing Global Crisis FAQs," *World Bank*, December 16, 2015, http://www.worldbank.org/en/topic/fragilityconflictviolence/brief/forced-displacement-a-growing-global-crisis-faqs.
[5] United Nations High Commissioner for Refugees, "Urban Refugees," accessed March 1, 2016, http://www.unhcr.org/pages/4b0e4cba6.html.
[6] "Refugee Camps Are the 'Cities of Tomorrow', Says Aid Expert," *Dezeen*, November 23, 2015, http://www.dezeen.com/2015/11/23/refugee-camps-cities-of-tomorrow-killian-kleinschmidt-interview-humanitarian-aid-expert/.
[7] "Aid Worker Security Report 2015: Figures at a Glance" (Humanitarian Outcomes), accessed January 11, 2016, https://aidworkersecurity.org/sites/default/files/HO_AidWorkerSecPreview_1015_G.PDF; for full dataset, see "The Aid Worker Security Database (AWSD)," *Humanitarian Outcomes*, accessed January 10, 2016, https://aidworkersecurity.org/.
[8] Abby Stoddard, Adele Harmer, and Kathleen Ryou, "Aid Worker Security Report 2014 - Unsafe Passage: Road Attacks and Their Impact on Humanitarian Operations" (Humanitarian Outcomes, August 2014), https://aidworkersecurity.org/sites/default/files/Aid%20Worker%20Security%20Report%202014.pdf.

28th.[9] And MSF is by no means the only organization to suffer from the recent incidents of violence against aid workers and facilities. As a result, some such aid organizations now consider conventional armed forces to pose a greater threat to the security of their staff than insurgent groups certain environments.

And while devastating in their own right, attacks against aid workers have had even more devastating consequences for the populations they serve, curtailing access and depriving vulnerable populations of life-saving assistance. The result is a critical challenge for civil-military coordination and the humanitarian sector: How to provide the best assistance possible to populations in need, marshaling all the resources at our disposal – both humanitarian and military – to respond to crises? How to create a "new model of civil-military humanitarian coordination", as many have appropriately called for, without jeopardizing the essential neutral, impartial, independent, and ultimately, humanitarian nature of emergency response, and with it, secure access for aid workers?

Many have already called for increased education and training, and these are critical. Military and humanitarian communities must get to know each other better, and participation in joint trainings and simulations is a great start. There is also a need for better means of communication and information sharing to ensure that this dialogue continues during operations, when it is needed most.[10] And more research is clearly needed to inform policy making, as much of it remains anecdotal or experiential today.

But militaries must also know when *not* to engage in humanitarian response. This also requires research, training and informed policy-making. We need to be wary of the militarization of humanitarian aid, as much as the humanitarianization of military operations. We need to recognize when the needs of vulnerable populations and affected communities are best served by civil-military cooperation, such as in certain large-scale natural disasters, and when they are best served by a clear separation between military and humanitarian action, such as in many conflicts and complex emergencies. This is important not just in terms of joint operations, where militaries engage alongside humanitarian actors. We must also question situations where militaries provide aid on their own, especially in the course of counterinsurgency or "hearts and minds" campaigns. Humanitarian agencies have frequently cited such operations as contributing to perceptions of them as legitimate targets of attack in countries like Afghanistan, now among the deadliest for aid workers.[11]

Improving civil-military coordination calls for us to work better together, and there are many circumstances in which that can make a real difference. Yet especially in conflicts and complex emergencies, protecting aid workers also calls for us to learn to work better apart. In some cases, this is because military involvement in humanitarian operations may pose an inherent risk to aid workers and beneficiary populations, especially when militaries are also belligerents in a conflict. In other cases, this is because experience demonstrates that both parties have not yet learned to work together effectively, and disregard for the implications of their actions are putting aid worker and civilian lives at risk.

[9] See Julia Brooks, "Amidst Kunduz and a Year of Violence, Protecting Humanitarian Staff," *Advanced Training Program on Humanitarian Action*, December 22, 2015, http://www.atha.se/blog/amidst-kunduz-and-year-violence-protecting-humanitarian-staff.
[10] David Polatty, "Overcoming Hurdles to Information Sharing and Technological Coordination in Civil-Military Engagement," *Advanced Training Program on Humanitarian Action*, April 6, 2015, http://www.atha.se/blog/overcoming-hurdles-information-sharing-and-technological-coordination-civil-military-engagement.
[11] Alex Whiting, "Attacks on Aid Workers Worldwide Hit Worst Levels on Record," *Reuters*, August 19, 2014, http://www.reuters.com/article/us-foundation-aid-attacks-idUSKBN0GJ07S20140819.

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