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14. ABSTRACT Recent literature discussing the movement of U.S. forces to Guam largely focuses on the strategic advantages the island offers: specifically, its status as sovereign U.S. territory and its ability to relieve political pressures associated with the extensive U.S. military footprint on Okinawa. There are few discussions of the operational advantages and disadvantages of moving significant amounts of U.S. forces to Guam, especially in the context of a conflict between the United States and the People's Republic of China. An evaluation of Guam's geography and Chinese military philosophy, capabilities, and published discussions reveals that Apra Harbor, the only maritime egress point for the island, is quite vulnerable to offensive mining by PRC submarine. The paper discusses how this determination is made and discusses and rejects solutions available with given force infrastructure. The paper concludes that strategic leaders, having decided to maintain U.S. commitments in the region, need to provide the operational commander additional forces to provide for Guam's defense.				
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Vulnerabilities

by

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The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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4 May 2009

No Virtue Like Efficacy: Considering Guam's Operational Vulnerabilities

Recent literature discussing the movement of U.S. forces to Guam largely focuses on the strategic advantages the island offers: specifically, its status as sovereign U.S. territory and its ability to relieve political pressures associated with the extensive U.S. military footprint on Okinawa. There are few discussions of the operational advantages and disadvantages of moving significant amounts of U.S. forces to Guam, especially in the context of a conflict between the United States and the People's Republic of China. An evaluation of Guam's geography and Chinese military philosophy, capabilities, and published discussions reveals that Apra Harbor, the only maritime egress point for the island, is quite vulnerable to offensive mining by PRC submarine. The paper discusses how this determination is made and discusses and rejects solutions available with given force infrastructure. The paper concludes that strategic leaders, having decided to maintain U.S. commitments in the region, need to provide the operational commander additional forces to provide for Guam's defense.

After a half-century on the island of Okinawa, the United States is in the process of moving a sizable portion of its western Pacific Marine Corps (USMC) force structure to the island of Guam. The plan involves the relocation a portion of the Third Marine Expeditionary Force (III MEF) to Guam by 2014 in an effort to decrease the U.S. military's footprint on Okinawa.

The decision by the United States to move a portion of its USMC force from Okinawa to Guam was made largely for political reasons. Faced with increasing local opposition to the presence of U.S. military forces in Okinawa, the Japanese government as early as 2001 began to seek changes in U.S. force structure. Much of the opposition to the presence of U.S. service members in Japan originated over criminal activity by U.S. military personnel. Significant Okinawan opposition to continued U.S. military presence on the island crystallized in the wake of a 1995 incident where three U.S. service members raped a 12-year-old Okinawan girl.¹ Further criminal incidents by U.S. military personnel instilled the idea among many Okinawans that there was little chance that criminal activity by U.S. military personnel would be reduced, much less eliminated.² A 2004 Okinawa government report stated: "there has been more than 5,076 cases of crime caused by the SOFA status people since the reversion of Okinawa to mainland Japan. This number includes 531 cases of brutal crimes and 955 cases of assaults." The report concludes that the mere presence of U.S. military personnel is disconcerting to the Okinawa public: "Thus, there is fear amongst the pepole [*sic*] of Okinawa as to whether or not security for their daily lives can be maintained and whether their property can be preserved."³ The same report illustrated the resulting local attitude towards the bases: "Many Okinawans have had a strong desire for the reduction and realignment of the U.S. military bases because they affect the development of the prefecture and the lives of prefectural pepole [*sic*] in many ways.

Under such circumstances, the rape of a schoolgirl by U.S. military soldiers in 1995 fueled public opinion against military bases from within the country and from abroad.”⁴

The U.S. and Japanese governments addressed these concerns as part of a larger discussion of the nature of U.S. military bases in Japan. The result was an October 2005 agreement entitled "U.S.-Japan Alliance: Transformation and Realignment for the Future." This document called in part for the relocation of much of the U.S. Marine Corps force structure from Okinawa and Guam. Specifically, the agreement provided that “Approximately 8,000 III Marine Expeditionary Force (MEF) personnel and their approximately 9,000 dependents will relocate from Okinawa to Guam by 2014, in a manner that maintains unit integrity. Units to relocate will include: III MEF Command Element, 3d Marine Division Headquarters, 3d Marine Logistics Group (formerly known as Force Service Support Group) Headquarters, 1st Marine Air Wing Headquarters, and 12th Marine Regiment Headquarters.”⁵ Japan agreed to provide the United States approximate \$6-billion towards the redeployment of forces to Guam.⁶ The new Obama administration acted in February 2009 to formalize the agreement with the Japanese government. As part of a signing ceremony with Japanese Foreign Minister Hirofumi Nakasone, U.S. Secretary of State Hillary Clinton stated “The realignment reflects the commitment we have to modernize our military posture in the Pacific.”⁷

Why Guam?

The United States government offered several justifications for selecting Guam as the location for Marines being relocated from Okinawa. Under a section entitled *Why Guam?*, the U.S government’s Joint Guam Program Office website offered several answers to that question. Justifications included a needed dispersal of forces in the Western Pacific, the need to reduce

force structure in Japan in support of the strategic alliance with Japan, Guam's relatively low population and low population density, and Guam's strategic location relative to possible threats in the Western Pacific. The article concludes with a brief, but telling, final justification: "...as a U.S. territory, Guam poses no limitation on freedom of action."⁸

When asked in an interview about the advantages of Guam as a base, former Commanding Officer of Naval Base Guam, Captain Robert A. McNaught reiterated the argument that the island's primary advantage lied in its political status. By being sovereign U.S. territory, Captain McNaught indicated that U.S. forces could operate unconstrained from the political requirements of host countries, either in training or during actual conflicts. Operating from Guam freed the operational commander from having to develop branch plans accounting for the possibility that a lack of host-nation support may preclude the use of U.S. forces based there.⁹

Both Captain McNaught and the U.S. government's Joint Guam Program Office largely describe Guam's military advantages in terms of strategic advantages. Certainly the maintenance of the alliance with Japan is in the best strategic interests of the United States. The ability of operate militarily without affecting that alliance is quite advantageous to the United States. But advantages at the strategic level do not necessarily produce advantages at the operational level of war. Instead, decisions made for valid strategic or political reasons often burden the operational commander. For example, recent U.S. military operations have taken place in the context of a coalition environment. The U.S. political leadership has mandated coalition warfare in an effort to establish political legitimacy for the operation.¹⁰ Such legitimacy clearly offers political and strategic advantages, but presents many difficulties for the operational commander.¹¹ Guam functions similarly; the United States gains strategically from its use but its geographic

characteristics place burdens on the operational commander that previous bases such as Okinawa did not.

Geographic characteristics of Guam

As previously discussed, Guam's selection as a major base of operations for the United States in the western Pacific region was made for political reasons. It has several characteristics that, from a purely military perspective, make it inferior to Okinawa. Guam is relatively isolated from other U.S. military facilities in the Western Pacific. Figure 1 illustrates Guam's distance from major western Pacific locations. While Guam is centrally located in the western Pacific, it is not immediately proximate to any other major U.S. military facility. Operationally, this affects the factors of space and time. The nearest major U.S. naval facility to Guam is Sasebo at a distance of approximately 1400 nautical miles. At 15 knots, it would take a vessel about four days to transit to Guam from Sasebo. Taiwan is about the same distance from Guam as Sasebo, while Okinawa is slightly closer, requiring only a three day transit at 15 knots.¹² In comparison, a 15 knot transit from Sasebo to Okinawa would take only 1 day, and would involve relatively sheltered waters as opposed to an open-ocean transit. Likewise, a transit from Yokosuka to Guam requires over 3 days of open-ocean steaming, while a transit from Yokosuka to Okinawa would require only 2 days, again relatively close to the Japanese coast.¹³ U.S. lines of operations in a conflict with the PRC are much longer than they are from bases in Japan. Therefore, the operational commander must increase the amount of space he must defend and increase the time he must defend it, relative to an Okinawan base of operations. Also, the use of Guam in conjunction with the existing U.S. bases in Japan requires the operational commander to protect lines of communication between Guam and Japan in addition to protecting lines of operation emanating from Guam.



Figure 1 Distance from Guam to various Pacific locations (Adapted from Andrew S. Erickson and Justin D. Mikolay, "A Place and a Base: Guam and the American Presence in East Asia," *Naval War College Newport Papers* 26, (February 2006): 69.

Guam measures unfavorably relative to Okinawa in other geographic factors. Most obviously, Guam lacks Okinawa's multiple egress points. Guam's sole harbor is located on its western coast. Apra Harbor is a natural deep-water port formed by the Orote Peninsula on the south and Cabras Island on the north. There is a man-made breakwater that extends west from Cabras Island to form the northern boundary of the harbor. The harbor entrance is approximately

500 feet wide and the channel depth at the entrance is approximately 100 feet.¹⁴ Figure 2 illustrates the relatively narrow approach to the island. There are no other harbors on the island; Apra Harbor serves as both the commercial port for the island as well as the harbor for the island's naval base.



Figure 2 Apra Harbor entrance (Reprinted from Personnel Support Detachment , Yokosuka Japan website <http://www.psapac.navy.mil/psdguam/apraair.jpg>)

This compares quite unfavorably relative to Okinawa. Okinawa has at least two major port facilities for the transport of military equipment on and off the island (White Beach and Naha port facilities). As a result, there is no single point where Okinawa can be isolated militarily. Apra Harbor is Guam's single point of failure. The harbor's narrow entrance makes it quite susceptible to being closed by some hostile act. An obvious method would involve the use of submarine launched mines at the harbor entrance.

The use of a submarine to attack a harbor is not without precedent. The best example involved the German U-Boat *U-47* and its attack on the British naval base at Scapa Flow on 14 October 1939. In this case, *U-47* entered Scapa Flow and torpedoed two ships, including the

battleship HMS *Royal Oak*. As a result, the Royal Navy was forced to disperse its fleet to secondary anchorages until Scapa Flow could be positively defended from further U-boat attack.¹⁵

Certainly this is an imperfect analogy; it seems quite unlikely that a hostile submarine would enter Apra Harbor. But that is not the point. The Scapa Flow u-boat attack illustrates that a creative, resourceful enemy can seek to counter the dominant naval power by using submarines to turn a base, a position of strength, into a vulnerability to be exploited. Guam's single harbor provides a hostile submarine force with a tradition of unconventional tactics an opportunity to transform Apra Harbor into a critical vulnerability that can be exploited to indirectly attack United States forces located there.

Shutting the door

In the event of a conflict with the PRC, the United States will find a large portion of its relevant force structure located on Guam. All non-aviation assets will have to depart Guam via Apra Harbor for them to be militarily useful. These forces could easily find themselves "bottled in" if Apra Harbor were closed. By closing Apra Harbor, the PRC could in one action delay or prevent a sizable portion of the III MEF forces from movement to their objective. Likewise, logistical resources on the island would not be able to be transported off-island to where they are needed.

As previously discussed, Apra Harbor appears to be quite vulnerable to an unorthodox attack by submarine. The PRC has demonstrated the ability to deploy its submarines into the western Pacific and operate them in the vicinity of Guam. In November 2004, a Chinese *Han*-class SSN was observed to transit into the western Pacific. Reports indicated that it operated in

the vicinity of Guam before transiting towards Okinawa.¹⁶ Similar reports suggest that the submarine operated off the west coast of Guam and did not proceed east of the Marianas Islands.¹⁷

The PRC clearly has the means to deploy a submarine to Guam. As more military infrastructure is moved to Guam, it becomes increasingly obvious as to why the PRC would seek to conduct an operational fire at Guam designed to delay or prevent the United States military from effectively operating in the western Pacific. Bases can serve either an offensive or defensive purpose; those relatively near the area of operations are typically categorized as offensive in nature. Guam falls into this category relative to the PRC.¹⁸ As a base of operations, lines of communication flow from the continental United States and Hawaii to Guam and, in the event of a conflict with the PRC, lines of operations would flow from Guam. Vego states that a naval base is best when “it commands good and secure communications by land and sea.”¹⁹ Obviously Guam lacks any land routes of communications, so its lines of communications are primarily by sea. Guam’s sea lines of communication must flow into Apra Harbor just as lines of operation flow out from it. As the United States would be operating from exterior lines in a conflict with the PRC, eliminating Guam as a base of operations would first cut U.S. lines of communications and lines of operations in the western Pacific. Without Guam, reestablished lines would be significantly lengthened and the available areas from which the U.S. could operate in the region would be drastically reduced. In doing so, the PRC would effectively decrease the amount of U.S. forces that could operate against it and limit the primary advantage of exterior lines, namely the freedom of maneuver.²⁰

Such an unorthodox use (by western standards) of their submarine force is actually quite in keeping with the Chinese military tradition. Ralph Sawyer notes that the concept of

unorthodox warfare is quite common in the Chinese military tradition, dating back at least to the writings Sun-Tzu.²¹ Sawyer asserts that the Chinese concept of *chi* roughly translates to “unorthodox” when used in terms of military strategy and is consistently found in both ancient and modern Chinese military philosophy.²² Sawyer notes that Mao Zedong promoted the study of the ancient Chinese folktale *Shui-hu Chuan* which tells the story of outnumbered bandits who must avoid direct confrontation with their opponents by using unpredictable measures directed at the enemy’s periphery. Sawyer notes that one of the lessons of *Shui-hu Chuan* is “...constricted and watery ground should always be chosen to leverage the power of the disadvantaged and dictate the terms of the engagement in accord with the fundamental concept of recognizing configurations of terrain and appropriately exploiting highly specific topographical features that will disrupt the enemy’s synchronization, sever their communications, and isolate units for defeat in detail.”²³ Sawyer further notes that it is quite common in the PRC to apply Mao’s tactics and military thinking to “...larger theaters, provided only that the battlefield can be suitably chosen and shaped.”²⁴

Mao also understood warfare as a political struggle as much as a strictly military one. Lacking conventional military strength during the civil war against the Nationalist government, Mao turned to guerilla tactics that emphasized the ability to trade time for force through the use of political power to motivate guerilla fighters and their supporters. In other words, Mao emphasized the value of non-traditional tactics that minimized the need for extensive conventional forces and provided opportunities for surprise attacks. While the Western military tradition emphasized the importance of quick victory and a return to peacetime conditions, Mao advocated an approach to warfare where space and time are used as weapons against a traditionally superior opponent.²⁵

Mao's concept of using non-traditional methods that allow for the favorable application of space and time seem quite appropriate in the context of a conflict between the United States and the PRC over Taiwan. In the event of an attempt to depose the Republic of China government in Taiwan, PRC strategy likely would involve two simultaneous campaigns – one to defeat Taiwan and one to delay or prevent United States intervention.²⁶ The PRC has only to delay United States military intervention long enough to “convince Taipei that waiting for help is futile, that capitulation and negotiation – on Beijing's terms – are the only reasonable option.”²⁷

Therefore, the PRC likely does not envision a direct, conventional war with the United States. Instead, PRC military leaders, drawing on their cultural tradition of martial *chi* and Mao's influential experiences during the Chinese civil war, may seek to use their submarine force in an unorthodox manner to sufficiently delay the United States response to their Taiwan conflict long enough to present their conquest of Taiwan as a *fait accompli*. PRC military planners likely view the ideal circumstance as a quick strike against Taiwan coupled with an unorthodox attack on a U.S. critical vulnerability that results in the United States never becoming actively involved in the conflict.²⁸

Given Guam's central position in the Western Pacific, how better to delay the U.S. military response to a PRC attack on Taiwan than by shutting the only door to a critical United States base of operations in the region? A submarine-launched mobile attack on Apra Harbor easily fits into the Chinese military tradition of unorthodox tactics that are designed to sever the opponent's lines of communication and disrupt their traditional advantages. As opposed to a missile barrage, the mining of the Apra Harbor indirectly attacks the United States critical strength located on Guam without entering into direct, protracted conflict with their traditionally stronger opponent. Therefore, it is a logical conclusion that the probability of a PRC submarine

attack on Apra Harbor is sufficiently likely as to require the operational commander to account for Guam's maritime defense prior to the onset of hostilities.

In addition to being able to deploy a submarine to Guam, the PRC apparently has the technical capability to mine Apra Harbor via submarine. The PRC is believed to have developed a submarine launched mobile mine (SLMM) using its existing Yu-1 torpedo design. The design is actually quite simple: a torpedo carries an explosive warhead to a predetermined location. Once at the location, the torpedo simply shuts down and the triggering mechanism activates, transforming the torpedo into a tradition bottom-influence mine.²⁹ Jane's estimates that a traditional Yu-1, when operated at 41 knots, has a maximum operational range of 4.5 nautical miles. The SLMM version of the Yu-1 likely would have a much greater range since there would be no requirement for it to operate anywhere near 41 knots. The traditional Yu-1 torpedo carries a 400 kg (880 pound) warhead and can be carried by most PRC submarines, including the *Han*-class. Jane's estimates that the *Han*-class possesses 6 torpedo tubes and is capable of 14 reloads, which suggests that one *Han*-class SSN could deploy as many as 20 mines into the mouth of Apra Harbor.³⁰

Moving from Capability to Intent

In the event of a U.S./PRC conflict, the probability of a PRC operational fire directed against Guam only increases when PRC military publications are considered. PRC military analysts have concluded that Guam is vulnerable to attack:

The U.S. military has still not established a defense system of anti-aircraft, anti-missile, and other defense systems on Guam – [there exists] only a pittance of coastal patrol forces. Once there are hostilities, Guam's defense can only rely on the U.S. Navy's sea-based missile defense system and Air Force joint operations. Consequently, in wartime, Guam's defense is still a problem; also, because it is in a special position surrounded on four sides by ocean at the intersection of three major international sea lanes, it is

impossible to defend effectively. If the other side's long-range ballistic missiles, submarine-launched cruise missiles, long-range bombers or maritime special forces operations units, etc., can break through Guam's peripheral warning and defense, [to] *destroy or seriously damage its naval port*, airfield, munitions warehouse, and communications system, [then] the entire operational system of America in the Pacific Theater can become ineffective, its sustained warfare capability can greatly fall short of requirements [and] *its resolution and dynamics of military intervention would have to change*.³¹ [emphasis added]

Furthermore, Chinese sources suggest that the PRC views the U.S. submarine fleet as a major factor in the United States' ability to intervene in a PRC/Taiwan scenario, especially those submarines stationed at Guam.³² PRC military analysts speak of "restraining" (as opposed to neutralizing, destroying, etc.) the combat power of U.S. submarines because they are "difficult to discover and counterattack" while underway.³³ These comments were made in an article describing PRC military mine capabilities. Therefore, it is likely that the PRC views offensive mining as an effective method to neutralize the U.S. submarine force as they will likely be unable to detect or attack U.S. submarines once they reach open ocean.

The PRC appears to understand that the conditions required to meet their operational objective in a conflict with the United States will involve neutralizing its lines of operations in the Western Pacific, that the way to accomplish this is to indirectly attack its vulnerable base of operations, and it has the means to exploit this vulnerability by conducting operational fires on Apra Harbor using submarine launched mobile mines that will allow the PRC to exploit that vulnerability. Therefore it is reasonable to conclude that in the event of a conflict between the United States and the PRC, an attack on Guam's harbor by PRC submarine is probable.

Counterarguments Discussed

Previous articles have identified Apra Harbor's vulnerability. One article advocated the construction of a second harbor to provide redundant points of egress off the island.³⁴ One of

Okinawa's significant advantages relative to Guam was its multiple egress points in the form of two harbors. Would it be feasible to construct a second harbor at Guam? The answer is almost certainly not. The estimated cost associated with improving the current Guam infrastructure is currently predicted to be \$15-billion of which only \$6-billion will be provided by the Japanese government.³⁵ Given the current financial condition of the U.S. government, it seems quite unlikely that a project as expensive as the construction of a second harbor would be funded. Additionally, it is difficult to see how already extensive environmental impact reviews would facilitate such a construction project.³⁶ While the construction of a second harbor certainly would mitigate Apra Harbor's weakness, it is virtually impossible to envision the U.S. government's willingness to devote the resources or political capital to such an endeavor.

Significant amounts of military logistics are located on Guam and would be called upon to facilitate combat operations in the event of a conflict with the PRC. Additionally, the relocation of III MEF to Guam places a significant amount of active combat power on the island. Neither the logistical supplies (primarily ammunition) nor the war fighting equipment associated with III MEF could be efficiently moved off-island except by sea. If Apra Harbor were closed, then the only other effective method to egress the island *en masse* would involve amphibious transport from the beach. U.S. Marines are generally capable of amphibious movement. However, the U.S. experience at Guam in 1944 suggests that such an evolution would be difficult at best.

U.S. forces faced significant obstacles during the amphibious invasion of Guam in 1944. Most notably, Guam is surrounded by a wide-fringing reef that could only be crossed by tracked amphibious vehicles. The invasion process involved the transfer of personnel and equipment from larger landing craft to smaller LVTs which then conveyed them to the beach. The beaches

selected for the invasion were located just north and south of Apra Harbor.³⁷ Today the northern beach is the site of multiple tourist hotels; the southern beach is also relatively developed – neither location is today likely suitable for the wholesale transport of equipment via amphibious boat to waiting transport ships.³⁸ Furthermore these beaches, the most ideal for the amphibious movement off the island, presented the Marines in 1944 several challenges. “The chief obstacle to the troops of the Third Marine Division (in 1944) was terrain. Their beachhead was shallow in depth and was ringed with high cliffs which made maneuver difficult.”³⁹ That same terrain exists today on Guam.

Given the geographic constraints on Guam, it seems quite unlikely that even with the necessary amphibious craft and waiting amphibious shipping that sufficient quantities of logistics and equipment could be moved off-island via amphibious transport to effectively bypass a closed Apra Harbor.

Options for the Operational Protection of Guam

The operational commander would likely seek to mitigate the operational risk to Guam tactically. One possible mitigation would be to defend against a PRC SSN operating in close vicinity of Guam through an aggressive anti-submarine warfare (ASW) effort. Defensive options would include either the use of a U.S. SSN in a defensive role in the vicinity of the island or the use of P-3s from Andersen Air Force Base to patrol the adjacent seas. But neither of these options can be implemented without affecting their offensive efficacy in a PRC-Taiwan scenario. Currently there are only three SSNs stationed at Guam and they are likely to be allocated for forward-deployed assignments. Therefore, a submarine from Hawaii would have to be deployed to Guam: a 7-day transit at best. In the meantime, would the operational commander risk

deploying ships from Apra Harbor? The transit of an ASW-capable ship from Yokosuka, as previously discussed, would take approximately three days; perhaps in just over 48 hours if the ship operated at a relatively high rate of speed. But that ship likely would consume most of its fuel in a rapid transit to Guam and would require refueling, which could only be conducted at an unavailable Apra Harbor. Current assets are unlikely to be able to provide a timely resolution to a mined Apra Harbor.

Another possible option would be to deploy U.S. mine countermeasure (MCM) assets to Guam to sweep Apra Harbor for mines once they are discovered. However, the factors of time and space work against this plan. There are currently two MCM ships located in the Seventh Fleet area of responsibility, both forward deployed from Sasebo. Assuming a transit speed of 7 knots, the transit from Sasebo to Guam would take over eight days. During that transit, both MCMs would be vulnerable to attack and require the operational commander to provide for their defense. An eight day delay in operations into and out of Apra Harbor could delay a U.S. response long enough to render it ineffective. Even if not allocated in any offensive operational plans, the reliance on Sasebo-based MCMs to respond to a mine threat would appear to be an ineffective tactic in response to a mine field at Guam.

Because of the factors of time and space, it seems reasonable to conclude that, given the current force structure on Guam, the operational commander would have to deploy defensive assets to Guam before the onset of hostilities with the PRC for them to be tactically effective.

Conclusions

In a 2002 article, Colonel Jerry M. Rivera, USA identified Guam as “America’s Forward Fortress in the Pacific.”⁴⁰ The word “fortress” implies a position of strength that is largely

impervious to effective military attack. But this label is inappropriate for two reasons: first, Guam functions as an *offensive* base of operations and is not designed to be a fixed fortification to protect the United States from attack. Second, Guam is obviously not impervious to attack. If Guam is a fortress, then it is one with a drawbridge that could easily found to be stuck in the up position. Colonel Rivera's recommendation to move most United States military infrastructure to Guam reveals a lack of careful thought on the military efficacy of the island. Much like the political leadership that negotiated the transfer of much of III MEF from Okinawa to Guam, Colonel Rivera views Guam's advantages largely in national/strategic and political terms relative to the freedom of action that the United States would enjoy on Guam due to it being sovereign U.S. territory.⁴¹ Certainly this presents the United States with many strategic advantages, but it places significant burdens on the operational commander relative to the function of operational protection. These limitations, while not debilitating, certainly should give pause to any recommendation for the United States to "move all of its personnel, weapons, aircraft, ships, equipment, and logistics to Guam and the Marianas."⁴²

Recommendation

The United States has chosen to maintain an extensive military presence in the Western Pacific in part to respond to the perceived PRC military challenge in the region. Political and strategic leaders have made a commitment to maintaining U.S. military presence in the region while also acting to shore up military alliances with regional countries, especially Japan. Because the decision to maintain U.S. military forces in the region and to base many of them on Guam are inherently strategic in nature, it will be up to the strategic and political leadership of the United States to provide the operational commander with the ability to protect Guam.

In his book *War & Change in World Politics*, Robert Gilpin notes that “The fundamental task of the challenged dominant state is to solve ... the fundamental problem of foreign policy – the balancing of commitments and resources.”⁴³ The challenged power has essentially two choices; either to “increase resources devoted to maintaining its commitments”⁴⁴ or “to reduce its commitments in a way that does not damage its international position.”⁴⁵ By choosing to increase force structure on Guam and groom its alliances in the region, the United States seems intent to maintain its commitments in the region. Accordingly, the United States would then need to increase the resources available to the operational commander to do so.

Additional resources would allow the operational commander to provide operational protection of Guam by using increased force to balance deficiencies in space and time. Specifically, additional maritime resources would allow the operational commander to allocated specific assets to defensive roles while ensuring sufficient force to achieve offensive operational objectives. Some of the additional assets would undoubtedly need to be based at Guam to account for the factor of space so that the time/speed/distance issues do not limit defensive options.

Specifically, Guam likely requires additional ASW assets in the form of SSNs and maritime patrol aircraft. Given current defense spending limitations, these assets would most easily be made available by moving assets from Atlantic bases – perhaps the extra SSNs could come from existing force structure in Groton. The details of redeploying specific maritime forces to the Western Pacific are beyond the scope of this paper. Suffice it to say that Guam needs extra naval units for defensive purposes.

Notes

¹Onishi, Norimitsu. “Japan Focuses Anger on U.S. In Rape Arrest Of a Marine.” *New York Times*, 13 February 2008, late edition, sec. A.

² Editorial, “U.S. govt must reinforce discipline at bases,” *The Daily Yomiuri*, 14 February 2008, pg. 4.

³ Okinawa Prefecture, “U.S. Military Bases in Okinawa: Impact on the Lives of the Okinawan People (Incidents, Accidents and Environmental Issues)”, <http://www3.pref.okinawa.jp/site/view/contview.jsp?cateid=14&id=586&page=1> (accessed 1 April 2009)

⁴ Okinawa Prefecture, “U.S Military Bases in Okinawa: Toward the Resolution of Issues Concerning Military Bases”, <http://www3.pref.okinawa.jp/site/view/contview.jsp?cateid=14&id=638&page=1> (accessed 1 April 2009).

⁵ Japan Ministry of Defense, “Defense Policy: United States-Japan Roadmap for Realignment Implementation (May 1, 2006)”, http://www.mod.go.jp/e/d_policy/dp13.html (accessed 1 April 2009).

⁶ *ibid*

⁷ Hongo, Jun. “Japan, U.S. sign accord on forces,” *The Japan Times*, 18 February 2009.

⁸ Joint Guam Program Office “Why Guam”, <http://www.jgpo.navy.mil/index.php/about-jgpo/why-guam> (accessed 3 April 2009).

⁹ CAPT Robert A. McNaught, USN (Commanding Officer, NROTC Unit College of the Holy Cross, Worcester, MA), in discussion with the author, 15 April 2009.

¹⁰ Patricia Weitsman, “The High Price of Friendship,” *New York Times*, 31 August 2006, Late Edition - Final.

¹¹ Colonel Bart Howard, “Preparing Leaders for Multinational Operations,” *Army Magazine* 58, no. 3 (March 2008): 21–24.

¹² World Port Distance, “Interactive Calculator,” <http://www.distances.com/> (accessed 29 April 2009).

¹³ *ibid*

¹⁴ Information Security, “Apra Harbor”, <http://www.globalsecurity.org/military/facility/apra.htm> (accessed 18 April 2009).

¹⁵ Dan van der Vat, *Stealth At Sea: The History of the Submarine* (New York, NY: Houghton Mifflin Company, 1994), 168–73.

¹⁶ Peter A. Dutton, “International Law and the November 2004 ‘Han Incident’,” *Asian Security* 2, no. 2 (2006): 97-99.

¹⁷ Kyodo News Service, “Chinese sub said tracked by US off Guam before entering Japanese waters,” BBC Monitoring Asia Pacific, 16 November 2004.

¹⁸ Milan N. Vego, *Naval Strategy and Operations in Narrow Seas* (London: Frank Cass, 2003), 62-63.

-
- ¹⁹ Ibid, 65.
- ²⁰ Ibid, 87.
- ²¹ Ralph D. Sawyer and Wei-chun Lee Sawyer, *The Tao of Deception: Unorthodox Warfare in Historic and Modern China* (New York, Basic Books, 2007), 342.
- ²² J. Boone Bartholomees, Jr., "The Tao of Deception: Unorthodox Warfare in Historic and Modern China Reviewed" *Parameters US Army War College Quarterly* 38, no. 1 (Spring 2008): 113–14.
- ²³ Ralph D. Sawyer and Wei-chun Lee Sawyer, *The Tao of Deception: Unorthodox Warfare in Historic and Modern China* (New York, Basic Books, 2007), 341.
- ²⁴ Ibid, 340.
- ²⁵ John Shy and Thomas W. Collier, "Revolutionary War," in *Makers of Modern Strategy: from Machiavelli to the Nuclear Age*, ed. Peter Paret et al. (Princeton, NJ: Princeton University Press, 1986), 839.
- ²⁶ Eric A. McVadon, "China's Maturing Navy" *Naval War College Review* 59, no 2 (Spring 2006): 101.
- ²⁷ Ibid, 99.
- ²⁸ Ibid, 99.
- ²⁹ Andrew Erickson, Lyle Goldstein, and William Murray, "China's Undersea Sentries: Sea Mines Constitute Key Elements of PLA Navy's ASW," *Undersea Warfare*, Winter 2007, Vol. 9, no 2.
- ³⁰ Commander Malcolm Fuller, RN, ed., *Jane's Naval Weapons Systems* Issue Forty-Eight (Surrey, UK: Jane's Information Group Limited, 2008), 476.
- ³¹ Han Jiangbo, "Guam: The 'Key Link' in the U.S. Military System to Control the Western Pacific," *Modern Navy* (December 2006): 33, quoted in Gabriel Collins, Andrew Erickson, Lyle Goldstein, and William Murray, "Chinese Evaluations of the U.S. Navy Submarine Force," *Naval War College Review* 61, no. 1 (Winter 2008): 72.
- ³² Gabriel Collins, Andrew Erickson, Lyle Goldstein, and William Murray, "Chinese Evaluations of the U.S. Navy Submarine Force," *Naval War College Review* 61, no. 1 (Winter 2008): 71-72.
- ³³ Lin Changcheng, "The Hidden Dragon in the Deep: The Present Situation and Development of PLA Mine Weaponry," *World Outlook* (May 2005): 9, quoted in Gabriel Collins, Andrew Erickson, Lyle Goldstein, and William Murray, "Chinese Evaluations of the U.S. Navy Submarine Force," *Naval War College Review* 61, no. 1 (Winter 2008): 70.
- ³⁴ Will Fortune, "The Double-Edged Sword of Guam" (research paper, Newport, RI: U.S. Naval War College, Joint Military Operations Department, 2008), 17.
- ³⁵ New York Newsday, "U.S. has big plan for tiny Guam," 4 January 2009, all editions, pg A27.
- ³⁶ U.S. Department of Defense, Department of the Navy, "Notice of Intent To Prepare an Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) for the Relocation of U.S. Marine Corps Forces to Guam, Enhancement of Infrastructure and Logistic Capabilities, Improvement of Pier/Waterfront Infrastructure for Transient U.S. Navy Nuclear Aircraft Carrier (CVN) at Naval Base Guam, and Placement of a U.S. Army Ballistic Missile Defense (BMD) Task Force in Guam," *Federal Register* 72, no. 44 (7 March 2007): 10186-87.
- ³⁷ Samuel Eliot Morison, *History of the United States Naval Operations in World War II: Volume VIII, New Guinea and the Marianas, March 1944-August 1944*. (Boston: Little, Brown and Company, 1953), 383.

³⁸ CAPT Robert A. McNaught, USN (Commanding Officer, NROTC Unit College of the Holy Cross, Worcester, MA), in discussion with the author, 15 April 2009.

³⁹ Jeter A. Isely and Philip A. Crowl, *The U.S. Marines and Amphibious War: Its Theory, and Its Practice in the Pacific* (Princeton, NJ: Princeton University Press, 1951), 376.

⁴⁰ Jerry M. Rivera, "Guam: America's Forward Fortress in Asia Pacific" (Strategy Research Project, Carlisle Barracks, PA: U.S. Army War College, 2002), 1.

⁴¹ Ibid, 16.

⁴² Ibid, 19.

⁴³ Robert Gilpin, *War & Change in World Politics* (Cambridge, UK: Cambridge University Press, 1981), 187.

⁴⁴ Ibid, 188.

⁴⁵ Ibid, 188.

Bibliography

- "Apra Harbor." GlobalSecurity.org. <http://www.globalsecurity.org/military/facility/apra.htm> (accessed 18 April 2009).
- Bartholomees, Jr., J. Boone. "The Tao of Deception: Unorthodox Warfare in Historic and Modern China Reviewed." *Parameters, US Army War College Quarterly* 38 (2008): 113-114.
- Boyd, John H.. *Harbor clearance operations in Guam following typhoons Karen and Olive, November 1962- July 1963*. Washington: US Bureau of Ships, 1964.
- Caryl, Christian. "America's Unsinkable Fleet; Why the U.S. military is pouring forces into a remote West Pacific island." *Newsweek (International Edition)*, 26 February 2007.
- Collins, Gabriel, Andrew Erickson, Lyle Goldstein, and William Murray. "Chinese Evaluations of the U.S. Navy Submarine Force." *Naval War College Review* 61 (2008): 68-86.
- Crowl, Philip A., and Jeter A. Isely. *The U.S. Marines and Amphibious War; Its Theory, and Its Practice in the Pacific*. Princeton: Princeton University Press, 1951.
- "Distance Calculator." World Ports Distances. <http://www.distances.com> (accessed 29 April 2009).
- Divis, Conrad B.. *Subic Bay naval complex : are there alternatives?*. Carlisle Barracks PA: US Army War College, 1992.
- Dutton, Peter A.. "International Law and the November 2004 'Han Incident'." *Asian Security* 2 (2006): 97-99.
- Erickson, Andrew, Lyle Goldstein, and William Murray. "China's Undersea Sentries: Sea Mines Constitute Key Elements of PLA Navy's ASW." *Undersea Warfare* 9 (2007), http://www.navy.mil/navydata/cno/n87/usw/issue_33/china.html.
- Forture, William. "The Double-Edged Sword of Guam." Research paper, Newport, RI: U.S. Naval War College, Joint Military Operations Department, 2008.
- Fuller, Malcolm. *Jane's Naval Weapons Systems Issue Forty-eight*. Surrey, UK: Jane's Information Group Limited, 2008.
- Gilpin, Robert. *War & Change in World Politics*. Cambridge, UK: Cambridge University Press, 1981.

-
- Hitchens, Christopher. *Letters to a Young Contrarian (Art of Mentoring)*. New York: Basic Books, 2005.
- Howard, Bart. "Preparing Leaders for Multinational Operations." *Army Magazine*, March 1, 2008.
- Jacobs, G. Keith. "Guam Becoming US Pacific Linchpin." *Asia-Pacific Defence Reporter* 29 (2003): 38-39.
- Jun, Hongo. "Japan, U.S. sign accord on forces." *Japan Times*, 18 February 2009.
- Karniol, Robert. "Japan agrees to share costs of US Marine Corps move." *Jane's Navy International*, 26 April 2006.
- Kyodo News Service. "Chinese sub said tracked by US off Guam before entering Japanese waters." *BBC Monitoring Asia Pacific*, 16 November 2004.
- Lord, Carnes. *Reposturing the force : U.S. overseas presence in the twenty-first century..* Newport RI: Naval War College Press, 2006.
- McNaught, Robert A. Interview by author. Personal. NROTC Unit College of the Holy Cross, Worcester MA, 15 April 2009.
- McVadon, Eric A. "China's Maturing Navy." *Naval War College Review* 59 (2006): 90-107.
- Merriam, Sharan B. *Qualitative Research and Case Study Applications in Education: Revised and Expanded from I Case Study Research in Education/I (Jossey Bass Education Series)*. San Francisco: Jossey-Bass, 1997.
- Morison, Samuel Eliot. *Leyte June 1944 - January 1945, History of United States Naval Operations in World War II Volume VIII*. Boston: Little, Brown and Company, 1958.
- Onishi, Norimitsu. "Japan Focuses Anger on U.S. In Rape Arrest Of a Marine." *New York Times*, 13 February 2008, A, Late edition.
- Paret, Peter. *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*. Princeton, NJ: Princeton University Press, 1986.
- Ray, Brian E. "Home porting subs overseas makes sense." *United States Naval Institute Proceedings* 128 (2002): 82.
- Rivera, Jerry M. "Guam: America's Forward Fortress in Asia Pacific" Strategy Research Project, Carlisle Barricks, PA, U.S. Army War College, 2005.
- Rubin, Debra K. "U.S. Navy About To Pump Up Guam Megabuild Contracting." *Engineering News-Record*, 14 July 2008.

Sawyer, Ralph D. *The Tao of Deception: Unorthodox Warfare in Historic and Modern China*. New York: Basic Books, 2007.

Trimble, Stephen. "Japan and US seal terms of alliance strategy." *Jane's Defence Weekly*, 5 May 2006.

"U.S Military Bases in Okinawa: Toward the Resolution of Issues Concerning Military Bases." Okinawa Prefecture. <http://www3.pref.okinawa.jp> (accessed 1 April 2009).

Daily Yomiuri. 14 February 2008. "U.S. govt must reinforce discipline at bases."

New York Newsday. 4 January 2009. "U.S. has big plan for tiny Guam."

US Government, Department of Defense, Department of the Navy. "U.S. Department of Defense, Department of the Navy, " Notice of Intent To Prepare an Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) for the Relocation of U.S. Marine Corps Forces to Guam, Enhancement of Infrastructure." *Federal Registrar* 72 (2007): 10186-10187.

"United States-Japan Roadmap for Realignment Implementation (1 May 2006)." Japan Ministry of Defense. http://www.mod.go.jp/e/d_policy/dp13.html (accessed 1 April 2009).

Van Der Vat, Dan. *Stealth at Sea: The History of the Submarine*. New York: Houghton Mifflin Company, 1994.

Vego, Milan N.. *Naval Strategy and Operations in Narrow Seas (Cass Series--Naval Policy and History, 5)*. New York: Routledge, 2003.

Weitsman, Patricia. "The High Price of Friendship." *New York Times*, 31 August 2006, Late edition.

"Why Guam." Joint Guam Program Office. <http://www.jgpo.navy.mil/index.php/about-jgpo/why-guam> (accessed 3 April 2009).