

**“THE MALACCA DILEMMA” —
COUNTERING CHINA’S “STRING OF PEARLS”
WITH LAND-BASED AIRPOWER**

**BY
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APPROVAL

The undersigned certify that Major Spinetta's thesis meets masters-level standards of research, argumentation, and expression.

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DISCLAIMER

The conclusions and opinions expressed in this document are those of the author. They do not reflect the official position of the US Government, Department of Defense, the United States Air Force, or Air University.

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ABSTRACT

China is strengthening diplomatic ties and building naval bases along the sea lanes from the Middle East. This “String of Pearls” strategy is designed to protect its energy security, negate US influence in the region, and project power overseas. China is rapidly building a blue-water navy, developing advanced missile technology, and stockpiling undersea mines to counter US Navy capabilities, especially in the event of a conflict over Taiwan. To counter China’s growing naval power, the United States can exploit a critical vulnerability—China’s dependence on sea lines of communication. Eighty percent of China’s oil imports pass through the Strait of Malacca; the Chinese leadership calls this strategic weakness the “Malacca Dilemma.” In conjunction with naval forces, land-based airpower offers a promising way to control key maritime chokepoints and trade routes. Land-based airpower proved a decisive maritime force in the war against Japanese shipping during World War II. China, like Japan at the start of WWII, is a rising Asiatic power with similar resource aspirations. Historical evidence suggests land-based airpower can control the littorals and cut China’s “String of Pearls.” Unfortunately, Air Force maritime capabilities have atrophied. *Countersea* will remain an underdeveloped Air Force mission until it is elevated from a collateral mission. In order for the US armed forces to develop a joint maritime force, the Air Force needs to embrace, fund, and train for maritime operations. Additionally, the United States should strengthen strategic partnerships within the region and create a web of austere, forward-operating bases.

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INTRODUCTION

Two days after Pearl Harbor, Japanese land-based bombers and torpedo planes sank the British battleship Prince of Wales and the battle cruiser Repulse. The Prince of Wales went down in minutes, while the Repulse managed to float for fifty minutes before following its sister ship to the bottom. Eight hundred and forty sailors died, but the loss of life is not what shocked the naval world—the battle marked the first time capital ships were sunk by air attack while operating on the high seas.

The British force commander, Admiral Tom Phillips was among those who perished in the attack. Admiral Phillips' belief in battleship superiority was so strong that he made no effort to arrange for air cover. Ironically, he had once counseled a junior officer that aviation was “poppycock” and steered him away from the profession because it would “ruin his career.”¹

In stark contrast, the Japanese started WWII convinced that victory in the Pacific would depend on control of the air. They understood that surface objectives, both on land and at sea, were vulnerable to air attack. The Japanese failed, however, to appreciate the full scope and complexity of the air effort required to protect their shipping.

Land-based airpower, in conjunction with naval assets, crippled Japanese shipping and was perhaps the most decisive factor in the collapse of the Japanese economy and the logistical system supporting the Japanese military.²

China, like Japan at the start of WWII, is a rising Asiatic power with similar resource aspirations. China is aggressively seeking to secure the raw materials necessary to fuel its economy. As part of its

¹ James Stokesbury, *A Short History of Air Power* (New York, NY: William Morrow and Company, 1986), 215.

² United States Strategic Bombing Survey, Transportation Division, *The War Against Japanese Transportation*, vol. 54 (Washington, DC: GPO, 1947), 6.

“String of Pearls” strategy, China is strengthening diplomatic ties and building naval bases along the sea lanes to the Middle East.

Additionally, China is improving its naval capabilities in an effort to deny the United States access to the region, to negate US influence, and to intimidate neighbors into political accommodation. China is rapidly building a blue-water navy, developing advanced missile technology, deploying new submarines, and stockpiling undersea mines in an effort to challenge US maritime hegemony in the region.

Land-based airpower, in conjunction with naval assets, offers a promising way for the United States to counter China’s “String of Pearls” and maintain an advantage in the maritime domain. Land-based airpower can help control the littorals.

This thesis identifies the importance of maritime interdiction and argues that the US Air Force can play a vital role in the development of a joint maritime capability. Unfortunately, Air Force maritime capabilities have atrophied since WWII. To remedy this shortfall, the Joint Chiefs of Staff should designate maritime interdiction as a primary Air Force mission; the Air Force must embrace, train, and fund maritime operations; and the United States should strengthen strategic partnerships in the region to ensure access and basing.

Chapter 1 describes China’s “String of Pearls” strategy, details its skyrocketing military spending, and identifies Chinese actions that are cause for US concern. The Chinese government continues to direct large increases in China’s defense budget, cozy up to odious regimes in an effort to secure energy resources, and repeatedly demonstrates a penchant for settling territorial disputes with violence. After gauging the threat posed by Chinese military expansion, chapter 1 explains why the United States should take action.

Chapter 2 explains how Alfred Thayer Mahan’s ideas are influencing Chinese maritime strategy, assesses the adequacy of US naval assets to respond to the growing Chinese maritime threat, and

develops a theoretical concept to take advantage of shortcomings in the Chinese approach. The chapter proposes an operating concept that leverages principles of naval strategy outlined by Julian Corbett updated to include airpower. Airpower provides a means to asymmetrically exploit China's dependence on maritime lines of communication. The Chinese military focuses on targeting and defending against attacks from the US surface fleet, particularly US aircraft carriers. Chinese commercial vessels and their navy, however, remain vulnerable to air operations. In the process of analyzing ways to exploit Chinese vulnerabilities, Chapter 2 discusses the advantages and limitations of both land-based and sea-based airpower and highlights the implications for strategy.

Chapter 3 provides a historical case study for analyzing land-based airpower's effectiveness in sinking ships and controlling the littorals. It draws insights from the American experience in the Pacific theater during WWII. Although conventional wisdom holds that carrier-based aviation contributed more to the maritime interdiction effort in the Pacific theater than land-based aircraft, historical evidence suggests otherwise. Land-based airpower proved to be a decisive maritime force.

The remaining two chapters propose a recommended course of action. Chapter 4 provides the requirements for the United States to develop joint maritime capabilities and concludes that the United States needs to create a web of austere, forward operating bases in the region. Chapter 5 suggests options the United States may pursue in order to secure basing and access. It identifies promising diplomatic avenues while focusing on constructive engagement as a means to build strategic partnerships. Rather than an ad hoc approach to securing basing rights, the United States should pursue a systematic approach that capitalizes on enduring friendships, renews strategic ties, and explores new partnerships. Although bombers can fly from bases outside the theater,

being denied access to regional airfields complicates planning, challenges tanker resources, and reduces the potential for sortie generation.

China's challenge to US Navy supremacy means the current division of labor between the US Navy and Air Force may no longer be adequate to protect US national interests. Employing land-based airpower jointly with naval assets to counter the Chinese maritime threat forces the Chinese military to respond to a host of operational problems rather than just a few. Additionally, land-based airpower extends the reach of US power projection, supplements defensive capabilities, and improves intelligence gathering and surveillance. Improved information fidelity serves as a force multiplier that allows commanders to exercise economy of force and to position forces optimally.

The US Air Force has much to contribute in the maritime domain. The US Air Force is primarily focused on air-to-ground operations. But, the sea-strike mission is no less important. US Air Force aircrews must train for a maritime mission to be effective in that domain.

The intent of this paper is not to suggest that war with China is inevitable. Rather, it suggests the best way for the United States and its allies to deter conflict is through a position of strength. Hideaki Kaneda, a retired Vice Admiral of Japan's Self-Defense Forces, issued a call to action for his compatriots: "All of Asia must wake up to the arrival of Chinese-style aggressive 'sea power.' Japan, in particular, must reformulate its national maritime strategy with this in mind. Japan, America and other traditional maritime countries must also once again treat 'sea power' in Asia as a key component of their ability to defend their own national interests."³ Similarly, this paper seeks to "wake up" US policymakers and military leaders and enlighten the debate over the appropriate response to China's growing military power. Instead of

³ Hideaki Kaneda, Retired Vice Admiral of Japan's Self-Defense Forces, "The Rise of Chinese Sea Power," *Project Syndicate* 2005, <http://www.project-syndicate.org/commentary/kaneda7/English> (accessed 1 March 2006).

responding to a Chinese naval threat by employing more US naval assets, this thesis argues it may make more sense to leverage the advantage the United States enjoys in the air.

CHAPTER 1

CHINA'S "STRING OF PEARLS"

Political power grows out of the barrel of a gun.

— Mao Zedong

The United States welcomes the rise of a peaceful and prosperous China. But, skyrocketing Chinese military spending focused on building regional power projection capabilities seems to indicate China's intentions are less than pacific. China's heavy emphasis on *militarism* offers cause for concern, especially since its regional ambition and foreign policy may lead to conflict with the United States.¹

China's foreign policy includes two regional goals in direct opposition to US interests. First, China intends to replace the United States as the chief power broker in East Asia. Second, China seeks to "regain" territories that Beijing feels falls within its sovereignty, to include Taiwan and numerous islands in the South China Sea.² In support of these aims, China has established strategic relationships and built bases along the sea lanes from the Middle East to the Chinese coast—a "String of Pearls" to support regional power projection.

China has adopted a "String of Pearls" strategy not only to protect Chinese oil imports, but also to serve broader security objectives.³ China's "String of Pearls" strategy increasingly allows it to challenge US naval hegemony in the South China Sea and the Indian Ocean, to deny the United States access to the region, to negate US influence, and to intimidate neighbors into political accommodation.

¹ *Militarism* is defined as the political inclination to build a strong military force and a willingness to use or threaten the use of that force to promote national interests. China's explicit threat to use force against Taiwan if it declares independence and its implied threat to use force to support other foreign policy objectives influences regional dynamics.

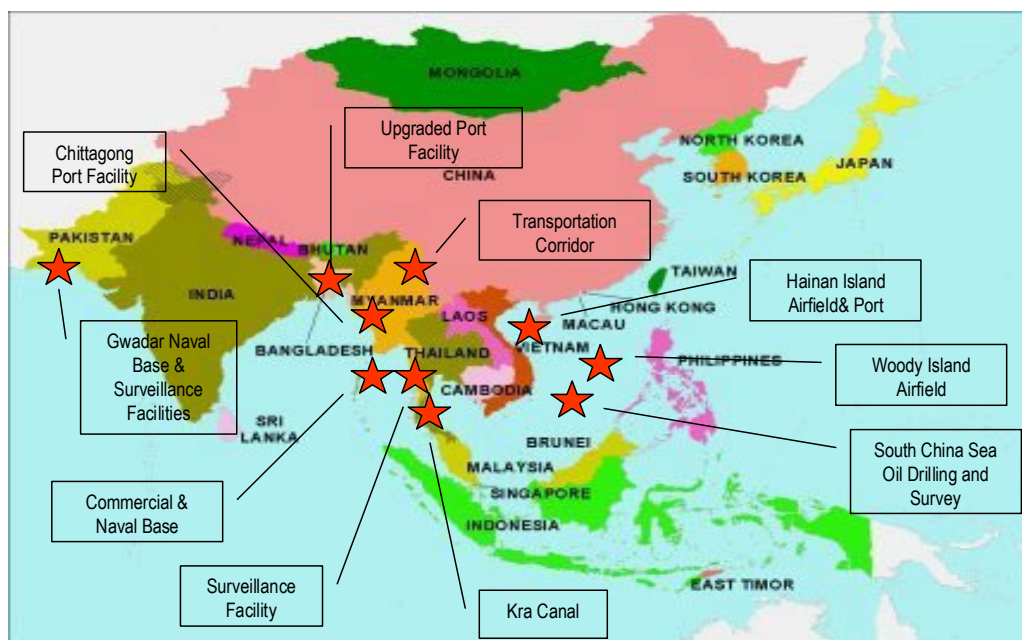
² Ross Terrill, "China is No Superpower," *Wall Street Journal*, 27 October 2005, available at <http://nbnbnb.blog.com/383687> (accessed 22 March 2006).

³ Juli MacDonald, Amy Donahue, and Bethany Danyluk, *Energy Futures in Asia*, Booz Allen Hamilton report sponsored by the Director of Net Assessment, November 2004, 15.

China's fervent embrace of the "String of Pearls" strategy leverages diplomatic ties with strategically situated countries in order to strengthen its military posture. Figure 1 depicts the geographical extent of Chinese activities. China is constructing and upgrading ports and naval bases in Pakistan, Bangladesh, and Myanmar and has opened a series of surveillance outposts on islands belonging to the latter. China is also building a transportation corridor that links China's Yunnan Province to the Bay of Bengal through Myanmar. China enjoys a de facto military alliance with Myanmar and supports its dictatorial regime with billions of dollars in military assistance. Additionally, China signed a military agreement with Cambodia, built a railway to help link southern China to the sea through Cambodia, and is considering a plan to build a \$20 billion canal in Thailand.⁴ Because these sites are close to oil routes from the Middle East, they provide China with prime eavesdropping locations, enable it to monitor regional shipping and US naval presence, and serve as power projection hubs.

⁴ Bill Gertz, "China Builds Up Strategic Sea Lanes," *Washington Times*, 18 January 2005, <http://www.washingtontimes.com/national/20050117-115550-1929r.htm> (accessed 22 March 2006).

Figure 1. China's "String of Pearls"



Source: Adapted from Juli MacDonald, Amy Donahue, and Bethany Danyluk, *Energy Futures in Asia*, Booz Allen Hamilton report sponsored by the Director of Net Assessment, November 2004, 17.

China is strengthening its ability to project air and sea power. In the South China Sea, the Chinese military expanded airstrip facilities on Woody Island and Hainan Island (reference Figure 1). In addition to enlarging ports to support large combat ships, China began fortifying the air bases and extending the runways on the Spratly and Parcel Islands to accommodate long-range bombers, literally creating unsinkable aircraft carriers in the middle of the South China Sea. Furthermore, China is rapidly building a blue-water navy, developing advanced missile technology, deploying new submarines, and stockpiling undersea mines to counter US Navy capabilities.

China's Skyrocketing Military Spending

China's military budget continues to increase at an alarming rate. The Chinese government has announced double-digit increases in military spending nearly every year for more than fifteen years. In 2005, the official Chinese military budget rose 12.6 percent to 247.7 billion yuan (almost \$30 billion). Hoping to dampen American concern, Chinese

officials note military spending, as a percentage of GNP, has remained relatively constant after adjusting for inflation. Despite these assurances, the pace and scope of China's military build-up places the regional military balance at risk.

The rapid rate of growth in Chinese military spending threatens Asia's stability. Other regional powers risk a relative loss of power unless they match Chinese military spending. According to Chinese government figures, China outspends all of its neighbors with the exception of Russia. By its own account, China has the third largest military budget in the world—as discussed later, there is reason to believe it ranks even higher—and China's army is the largest in the world with 2.2 million soldiers.⁵ Apart from its nuclear forces, China does not have the ability to threaten the continental United States, but China is improving its capability to threaten allies and US interests in the region.

The official Chinese military budget is a fraction of US military spending, but the disparity is not as great as it may seem. First, official figures greatly belie the true extent of their military spending, although the lack of Chinese budget transparency makes actual spending difficult to determine. Second, China's robust economic expansion will continue to allow China's military budget to expand at an alarming rate, potentially narrowing the spending gap with the United States.

The True Extent of Chinese Military Spending

China's official military budget vastly underestimates its actual military spending. Inadequate accounting complicates calculations required to make the official Chinese budget comparable to US spending.

⁵ For a discussion of forces see the *Directory of PRC Military Personalities* — a summary is available at <http://www.fas.org/nuke/guide/china/agency/pla-orbat.htm> (accessed 22 March 2006). The People's Liberation Army (PLA) consists of approximately 75 army maneuver divisions, of which 20 percent are "rapid reaction" units. Although not all of its 2.2 million soldiers have modern armament and equipment, an estimated 700,000 troops undergo high-intensity military training and maintain a high-degree of readiness. The People's Armed Police (PAP), a paramilitary force with about 1.3 million personnel, supplements the PLA. The PAP tends to absorb demobilized PLA troops. For example, the PAP grew by 500,000 troops during demobilizations in the 1980s.

The US Arms Control and Disarmament Agency estimates Chinese military expenditures at a level seven to eight times higher than the publicly disclosed figure. Costs are hidden under administrative expenses, and costs for outlays associated with shared programs are allocated to other state organizations. Official Chinese military spending does not include funding for paramilitary organizations, research and development programs, and weapon purchases from foreign governments. Additionally, official statistics fail to include government subsidies to the military-industrial complex, financing of military entities excluded from the official budget, and certain revenues.⁶ After correcting for differences in accounting procedures, China ranks as the second largest defense spender in the world.

⁶ Global Security, "China's Defense Budget: China's 'Official' Budget," <http://www.globalsecurity.org/military/world/china/budget.htm> (accessed 1 March 2006). The following is an excerpt from the above article that explains in more detail costs not reflected in official Chinese military spending figures:

Budgeted functions are hidden under construction, administrative expenses, and under state organizations such as the Commission on Science, Technology and Industry for National Defense, which mix PLA and other state activities. Further sources of income outside the national defense budget include official local and regional government expenses for local army contributions, pensions, militia upkeep and off-budget income from PLA commercial enterprises and defense industries, as well as income from international arms sales and unit-level production (e.g., farming) . . .

Most defense modernization spending occurs outside the PLA budget. Imported weapon systems are financed by separate hard-currency allocations from the State Council and are not charged against the PLA budget. The PLA pays for domestically produced Chinese equipment, which makes up about half of the modernization effort, but it pays only the incremental cost of manufacturing one system and none of the substantial R&D or startup costs. Such costs appear in the budget of the state-owned industry that produces the equipment, including substantial hard-currency costs for foreign technology and assistance.

The PLA receives funding from numerous, extra-budgetary sources. These sources include special allocations for procurement, at least partially derived from arms sales profits; sales of military unit services (e.g., construction) and products (e.g., farm produce) and other traditional PLA self-sufficiency activities; earnings from PLA enterprises remaining after divestment, which still produce civilian services and products; and, defense-related allocations in other ministries (e.g., state science and technology budgets and agencies at the provincial and local levels). In addition, China's proliferation of weapons of mass destruction (WMD)-associated technology and conventional munitions may help subsidize certain force modernization programs. Tracking these sources complicates the process of identifying and assessing defense budgetary trends.

Beijing's publicly announced budget does not include military spending contained in off-budget funding and revenue. As with the Soviet military budget, the official Chinese defense budget apparently covers salaries, but does not cover the research, development and acquisition of new weapons and equipment, which is funded through the budgets of the responsible ministries. The official budget does not include the cost of the People's Armed Police, nor does it include soldiers' pensions. The official budget also excludes proceeds from international arms sales and from business operations owned by the military.

Using purchasing price parity (PPP) methodology to compare US and Chinese military expenditures further narrows the nominal spending gap. Adjusting for PPP is essential to permit a direct comparison of Chinese and American defense spending figures. In July 2005, China changed its fixed exchange rate policy to allow the yuan to narrowly float against a basket of currencies. But, the Chinese yuan remains artificially low in value relative to the US dollar. Consequently, a straight conversion of military costs using the official rate underestimates the true value of Chinese expenditures. PPP calculations consider the cost of an item in China versus the cost of an equivalent item in the US to derive an exchange rate that equalizes purchasing power. This head-to-head comparison is important because “two-thirds of China's expenditures are for items, ranging from salaries to weapons systems, that cost a fraction of their equivalent American value.”⁷

Rapid Chinese Economic Expansion Funds Military Spending

China's rapid economic expansion will continue to allow it to accelerate the modernization of its army, navy, air force, and strategic nuclear forces. Since 1979, the year Deng Xiaoping started to introduce free market reforms within the Chinese economy, China's real gross domestic product (GDP) has grown at an average rate of 9.5 percent a year.⁸ Even if it cannot maintain this astronomical rate of growth, China is poised to close the economic gap with the United States. Richard Haas, the former head of the State Department's policy planning staff, predicts China will likely reach economic parity with the United States in less than three decades.⁹ The Economist Intelligence Unit (EIU)—citing demographic changes, a maturation of the industrial and technology base, and persistent financial inefficiencies—forecasts lower GDP growth

⁷ Global Security, “China's Defense Budget: China's ‘Official’ Budget,” <http://www.globalsecurity.org/military/world/china/budget.htm> (accessed 1 March 2006).

⁸ Desmond Lachman, “Threat from China May Be Empty,” *Australian Financial Review*, 4 July 2005, available at http://www.aei.org/publications/pubID.22794,filter.all/pub_detail.asp.

⁹ Richard Haas, “What to do about China,” *US News & World Report*, 20 June 2005, <http://www.usnews.com/usnews/opinion/articles/050620/20chinaessay.htm> (accessed 6 March 2006).

than Haas. But, EIU analysts still expect China to achieve substantial relative gains in GDP.¹⁰ Rapid economic growth allows the Chinese leadership to accelerate military modernization and plans to further develop power projection capabilities. In the final analysis, China appears committed to using its increasing wealth to fund military expansion.

Malevolent Intentions?

When judging whether China poses a threat to US interests, one must assess Chinese intentions as well as capabilities. Analyzing how Beijing plans to use its newfound military strength is as important as measuring the growth of its military capacity.¹¹ Because US policymakers are not privy to Chinese Communist Party (CCP) discussions and policy deliberations, intentions are more difficult to discern. Although official government pronouncements are often opaque, Beijing's diplomacy remains consistent with Deng Xiaoping's 1991 guidance to CCP leaders to "hide our capacities and bide our time."¹² Chinese actions seem to indicate malevolent rather than benevolent intentions.¹³

China's military build-up has progressed beyond what is warranted to protect its sovereignty and territorial integrity. The Defense Department's 2005 annual report to Congress on Chinese military power notes that China does not face a direct threat from another nation, yet it continues to invest heavily in military programs designed to improve

¹⁰ Department of Defense, *Annual Report to Congress: The Military Power of the People's Republic of China* (Washington, DC: Office of the Secretary of Defense, 19 July 2005), 20. The EIU predicts China's economy will expand to almost \$6.4 trillion by 2025. For comparison purposes, in 2025 Russia's GDP is projected to be \$1.5 trillion, Japan's \$6.3 trillion, and the U.S., \$22.3 trillion.

¹¹ Xiaoming Zhang, *Red Wings over the Yalu* (College Station, TX: Texas A&M University Press, 2002), 214.

¹² Yoichi Funabashi, "China's 'Peaceful Ascendancy'," *Yale Global Online*, 19 December 2003, <http://yaleglobal.yale.edu/display.article?id=3061> (accessed 9 April 2006).

¹³ In this context, the term *malevolent* refers to China's pursuit of objectives inimical to the interests of the United States.

power projection.¹⁴ At the Asian Security Conference in Singapore on June 4, 2004, Secretary of Defense Donald Rumsfeld rebuked Chinese officials and asked, "Since no nation threatens China, one must wonder: Why this growing investment? Why these continuing large and expanding arms purchases?"¹⁵ China's military build-up continues unabated despite a diminished fear of a major land war after the collapse of its major potential adversary, the Soviet Union.

US-Chinese relations were improving from a low after the downing of an American EP-3 surveillance plane and the detention of its crew in 2001, but recent events have undermined the credibility of China's stated desire for cooperation.¹⁶ In recent years, China took specific diplomatic and military actions to intimidate its neighbors. The Chinese government passed an "Anti-Secession" law providing the "legal" foundation to justify the use of force in the event Taiwan declares independence, released a Defense White Paper that intensified hostile rhetoric and characterized the cross-Straits situation as "grim," and conducted two large-scale amphibious exercises.¹⁷ Additionally, China fought to exclude the United States from an East Asia summit meeting in Malaysia in an attempt to neuter US influence. In 2005, the Chinese government gave tacit approval to hostile remarks by a People's Liberation Army general who threatened to employ nuclear weapons against hundreds of US cities if the United States came to Taiwan's

¹⁴ Department of Defense, *Annual Report to Congress: The Military Power of the People's Republic of China* (Washington, DC: Office of the Secretary of Defense, 19 July 2005), 13.

¹⁵ Robert Burns, "Rumsfeld to Make First Visit to China," *Washington Post*, 15 October 2005, <http://www.washingtonpost.com/wp-dyn/content/article/2005/10/15/AR2005101500664.html> (accessed 1 January 2006). An Associated Press article, "Rumsfeld: China buildup a threat to Asia" (4 June 2005) (available at <http://www.msnbc.msn.com/id/8091198>, accessed 1 March 2006), also features this quote.

¹⁶ Max Boot, "Project for a New Chinese Century: Beijing plans for National Greatness," *The Weekly Standard*, 10 October 2003, <http://www.weeklystandard.com/Content/Public/Articles/000/000/006/149ugqci.asp> (accessed 22 January 2006). A Chinese fighter collided with an American EP-3 during an intercept off China's coast. The mid-air collision forced the damaged EP-3 to make an emergency landing on Chinese soil. In addition to the EP-3 incident, an American B-2 mistakenly bombed the Chinese embassy in Belgrade during OPERATION ALLIED FORCE in 1999. The Pentagon blamed the error on outdated maps, but Chinese officials protested the attack and accused the United States of deliberately bombing their embassy.

¹⁷ Department of Defense, *Annual Report to Congress*, 3.

defense.¹⁸ Additionally, China added 100 short-range ballistic missiles to its arsenal facing Taiwan, held large military exercises with Russia, and pressured Central Asian republics to evict US military forces involved in the global war against Islamic extremism from bases in the region.

The United States has not been the only target of Chinese efforts. China continued attempts to bully Japan. Flexing its military might, China deployed a fleet of 5 combat ships near a disputed gas field in the East China Sea and provocatively sailed a nuclear submarine in Japanese territorial waters. The Chinese government wanted to signal its willingness to use force in support of its foreign policy and intimidate Japanese policymakers.¹⁹ The Chinese government also allowed anti-Japanese riots and stone-throwing protesters to attack the Japanese embassy in Beijing and seventeen other major Chinese cities.²⁰

Keeping Bad Company

China continues to “cozy up to odious regimes.”²¹ Although China played a constructive role in the Six-Party Talks addressing North Korean nuclear proliferation,²² China clearly stated that it does not support

¹⁸ Richard Russell, “What if . . . China Attacks Taiwan!” *Parameters*, Autumn 2001, <http://carlisle-www.army.mil/usawc/Parameters/01autumn/Russell.htm> (accessed 22 December 2005). Joseph Kahn, “Chinese General Threatens Use of A-Bombs if U.S. Intrudes,” *NY Times*, 15 July 2005, <http://www.nytimes.com/2005/07/15/international/asia/15china.html?ex=1279080000&en=0203de5ac4399e20&ei=5088&partner=rssnyt&emc=rss> (accessed 28 March 2006). General Zhu Chenghu’s remarks are consistent with previous Chinese threats to use nuclear weapons if the United States intervenes militarily to defend Taiwan. In 1995, the Chinese military’s deputy chief of staff made a statement similar to General Chenghu’s remarks. He said that China was prepared to sacrifice millions of people in a nuclear exchange if the United States intervened to defend Taiwan. The official implied that Chinese nuclear capabilities would hold the United States in check when he said, “You will not sacrifice Los Angeles to protect Taiwan.”

¹⁹ Norimitsu Onishi and Howard French, “China Deploys Ships to Area Japan Claims,” *San Francisco Chronicle*, 11 September 2005, <http://www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2005/09/11/MNGDGELU7M1.DTL> (accessed 24 March 2006).

²⁰ “China Rejects Calls for Apology,” *BBC News*, 17 April 2005, <http://news.bbc.co.uk/2/hi/asia-pacific/4453055.stm> (accessed 18 April 2006).

²¹ Max Boot, “Project for a New Chinese Century,” <http://www.weeklystandard.com/Content/Public/Articles/000/000/006/149ugqci.asp>.

²² Joseph DeTrani, Special Envoy for Six-Party Talks, “Six-Party Talks and China’s Role as an Intermediary in the Process,” remarks to the US-China Economic Security Review Commission, Washington, DC, 10 March 2005, <http://www.state.gov/p/eap/rls/rm/2005/43247.htm> (accessed 1 April 2006). The US State Department applauded “China’s efforts to create the conditions for a constructive

efforts in the UN Security Council designed to stop Iran from acquiring nuclear weapons.²³ China helped Iran and Pakistan violate the Treaty on the Non-proliferation of Nuclear Weapons by providing advanced missile and nuclear-related technology and constructing several reactors.²⁴ In an effort to secure access to resources, particularly oil, China has befriended dictators with appalling records on human rights in countries like Sudan and Myanmar. Increasingly, China is seeking influence in the Western Hemisphere and is building ties with Hugo Chavez's regime in Venezuela.²⁵

A History of Settling Disputes with Violence

China has repeatedly demonstrated a penchant for settling territorial disputes with violence. As China's military power grows, China's leaders may be tempted to resort to force or coercion more quickly to press a diplomatic advantage, advance security interests, or resolve disputes.²⁶ "China tends to incline towards power rather than negotiation," says Dr. Lee Jae-Hyung, a retired Korean Army Colonel and expert in international politics. "Given its past courses of action towards many island disputes, it seems likely that China will eventually resort to force against its opponents on a piecemeal basis."²⁷

Table 1 lists Chinese military clashes involving territorial disputes with Vietnam and the Philippines.

multilateral discussion with the DPRK," citing China's influence bringing North Korea back to the negotiating table when talks stalled.

²³ Max Boot, "Project for a New Chinese Century,"

<http://www.weeklystandard.com/Content/Public/Articles/000/000/006/149ugqci.asp>. Critical of the State Department's assessment (see previous footnote), Max Boot responded that "China only exerted enough leverage to broker a replay of the 1994 Agreed Framework under which Kim Jong Il gets more foreign aid--including a 'civilian nuclear reactor'--in return for the promise, but not the reality, of nuclear disarmament."

²⁴ Max Boot, "Project for a New Chinese Century,"

<http://www.weeklystandard.com/Content/Public/Articles/000/000/006/149ugqci.asp>.

²⁵ Max Boot, "Project for a New Chinese Century,"

<http://www.weeklystandard.com/Content/Public/Articles/000/000/006/149ugqci.asp>.

²⁶ Department of Defense, *Annual Report to Congress*, 14.

²⁷ Lee Jae-Hyung, "China's Expanding Maritime Ambitions in the Western Pacific and the Indian Ocean," *Contemporary Southeast Asia* 24, no. 3 (December 2002), 558 and 559.

Table 1. Chinese Military Clashes in the South China Sea

Countries	Military Clashes
China and Vietnam	<ol style="list-style-type: none"> 1. China seized the Paracel Islands (1974). 2. The Chinese navy attacked Vietnamese naval forces at Johnson Reef in the Spratly Islands (1988). China pummeled a Vietnamese flotilla, killed over 70 Vietnamese sailors, and occupied some islands in the Spratlys. 3. Vietnam accused China of drilling for oil in Vietnamese waters in the Gulf of Tonkin and accused China of landing troops on Da Luc Reef. In response, China seized 20 Vietnamese ships transporting goods from Hong Kong (1992). 4. China and Vietnam clashed over oil exploration rights (1994).
China and Philippines	<ol style="list-style-type: none"> 1. China occupied Philippine-claimed Mischief Reef (1995). 2. Three Chinese naval ships engaged in a 90-minute gun battle with the Philippine navy near Campones Island (1996). 3. China and the Philippines clashed near Scarborough Shoal over fishing rights (1997). China sent three warships to survey islands occupied by Philippine forces – the Panata and Kota Islands. 4. Philippine warships sunk two Chinese fishing boats (1999).

Sources: Lee Jae-Hyung, “China’s Expanding Maritime Ambitions in the Western Pacific and the Indian Ocean,” *Contemporary Southeast Asia* 24, no. 3 (December 2002), 559. Global Security, “Military Clashes in the South China Sea,” <http://www.globalsecurity.org/military/world/war/spratly-clash.htm> (accessed 1 March 2006)

The Chinese have not hesitated to use military action, particularly when territorial claims reinforce the possibility of gaining military advantage through the acquisition of strategic outposts. Following the US military’s withdrawal from Philippine bases in 1995, China seized Mischief Reef, an islet located within the 200-mile exclusion

economic zone, and constructed permanent military facilities there in order to assert control over regional waterways.

Since 2000, China has mostly refrained from military action (i.e., the use of direct force), but responses in support of Chinese territorial claims and resource rights have produced multiple crises with its neighbors.²⁸ Although China has made progress settling long-standing territorial disputes with Russia, Vietnam, India, and countries in Central Asia, it maintains overlapping territorial claims with Japan, Vietnam, the Philippines, Malaysia, Brunei, and India.²⁹

With regard to Japan, China has made repeated incursions into Japanese territorial waters and the country's economic zones in order to warn its neighbor in unusually blunt terms that any interference with Beijing's designs over disputed territory will be met with force.³⁰ Tensions between China and Japan over the enforcement of territorial claims and the exploitation of disputed natural resources could erupt in a conflict with wide regional repercussions.³¹ Japan's unilateral declaration of an exclusive economic zone in the East China Sea, the site of intensive hydrocarbon prospecting, may spark military confrontation.

Energy as a Driver of China's National Security Policy ³²

No longer inward looking, China shifted its foreign policy focus towards achieving regional dominance, bolstering national prestige, ensuring diplomatic ascension, and safeguarding economic interests. With regard to the last, economic considerations are intimately

²⁸ Department of Defense, *Annual Report to Congress*, 14.

²⁹ N. Ganesan, "ASEAN's Relations with Major External Powers," *Contemporary Southeast Asia* 22 (2000), available at <http://www.questia.com/PM.qst?a=o&se=gglsc&d=5002364041> (accessed 7 April 2006). In 2002, the "Declaration on the Conduct of Parties in the South China Sea" eased tensions in the Spratlys, but the declaration is not a legally binding code of conduct. In 2004, China and Russia agreed to divide ownership of islands in the Amur, Ussuri, and Argun Rivers. Additionally, China ratified a maritime boundary and fisheries agreements. In 2005, China and India drafted principles to resolve boundary disputes and started talks over Kashmir, site of the world's largest and most militarized territorial dispute.

³⁰ Linus Hagström and Johan Lagerkvist, "Sino-Japanese cold war," *Axess Magazine*, vol. 1, 2005, http://www.axess.se/english/2005/01/outlook_hagstrom.php (accessed 22 March 2006).

³¹ Department of Defense, *Annual Report to Congress*, 9.

³² MacDonald et al., *Energy Futures in Asia*, 12.

intertwined with Chinese security strategy. As such, energy concerns loom large in Chinese foreign policy calculations.

China's desire to secure energy imports to fuel its economy remains a prime driver of its security policy. China's demand for energy grew by more than 30 percent in 2003, and Chinese automobile ownership increased 80 percent during the past four years. China is the second largest consumer of oil in the world and the third largest importer of oil. Importing 60 percent of its oil from the Middle East, China is heavily dependent on foreign oil, particularly Middle Eastern sources.³³

As China's economy expands, its dependence on foreign oil will increase, exacerbating pressures to secure energy resources. In the near term, China is projected to remain the fastest growing energy consumer in the world. Oil industry experts expect Chinese imports to rise from 6 million barrels in 2004 to 16-20 million barrels per day in 2020. If this projection proves accurate, China will have to import eighty percent of its total oil consumption. Even if both China's economy and oil consumption grows at a rate below expectations, many experts agree that China "faces acute and unavoidable energy vulnerabilities."³⁴

The specter of an impending energy crisis is not remote; China is already experiencing oil shortages. In 2004, 24 of China's 31 provinces experienced power cuts as demand surpassed energy grid capacities. The Chinese government introduced energy rationing in industrial centers near Guangzhou and Shanghai, ordered six thousand factories to take a one-week break or operate at non-peak hours, and mandated shopping malls in Beijing reduce their air conditioning by one-third to conserve energy.³⁵

³³ Sudha Ramachandran, "China's Pearl in Pakistan's Waters," *Asia Times*, 4 March 2005, http://www.atimes.com/atimes/South_Asia/GC04Df06.html . (accessed 22 March 2006).

³⁴ Will Ollard, "The Search for Sustainability: Consequences of China's Growing Energy Demand," *Asia Intelligence Special Report*, ed. David Line, November 2004, 2.

³⁵ Ollard, "The Search for Sustainability," 2.

The Chinese government recognizes “a growing reliance on Middle Eastern suppliers for stable energy supplies is problematic and must be mitigated through a comprehensive diversification strategy.”³⁶ But, its diversification strategy has made little progress. China lost bids to buy stakes in oil fields outside the Middle East, such as its July 2005 failed attempt to buy UNOCAL.³⁷ Similarly, a deal to build a land pipeline from Russia to China collapsed after Japan entered the competition and offered more money to reroute the pipeline. Because regional energy grids in Southeast Asia have been built in a piecemeal fashion, Chinese efforts to connect grids and facilitate regional energy interdependence have produced only marginal benefits.

China’s dependence on sea lanes to import oil is a critical strategic vulnerability. Almost all of the oil that China imports passes through maritime chokepoints and hence, is susceptible to disruption. Eighty percent of China’s oil imports pass through the Strait of Malacca. In a 2003 speech to the Chinese Communist Party leadership, President Hu Jintao identified this dependence on sea lanes as a critical vulnerability and directed national security officials to figure out a solution for the “Malacca Dilemma.”

Predictably, China is allocating substantial resources to its military, buying sophisticated weapons, and seeking to expand its influence in the Western Pacific and Indian Ocean based on fears that the United States will exploit this economic vulnerability in a potential conflict.

A Strategic Crossroads

China’s aggressive strategy to challenge US maritime superiority suggests *traditionalists* who view national security as a zero-sum game with the United States are triumphing over *integrationists* who favor

³⁶ MacDonald et al., *Energy Futures in Asia*, 27.

³⁷ “China to Have Chance to Buy US Oil Assets,” *Daily Times*, 18 September 2005, http://www.dailytimes.com.pk/default.asp?page=story_18-9-2005_pg5_34 (accessed 12 April 2006).

cooperation. Traditionalists view security issues more narrowly through a military filter, whereas integrationists emphasize cooperation and interdependence.³⁸

Traditionalists and integrationists advocate different methods of securing access to energy imports. Traditionalists support a policy of direct physical control. They advocate the resolution of territorial disputes with force if necessary and encourage Chinese companies to acquire equity in foreign natural resources.³⁹ In contrast, integrationists argue China “must expand ties to foreign supplies through diverse market arrangements, encourage foreign suppliers to pursue ‘linking’ projects in China, expand cooperation with the International Energy Agency to better anticipate and respond to international energy crises, and increase reliance on markets.”⁴⁰ Although China seems to be pursuing elements of both the traditionalist and integrationist approaches, its weight of effort and magnitude of military spending suggests the government is prioritizing a military approach over cooperation.

China is at a strategic crossroads. China’s break-neck military build-up has given it the capability to increasingly threaten its neighbors and US regional influence.⁴¹ The government can either choose a martial path to an expanded sphere of influence, or it can broaden its definition of security and focus on economic growth through commercial rather than military means. Based on recent antagonistic actions, it is far from a forgone conclusion that the *integrationists* will eventually triumph in

³⁸ MacDonald et al., *Energy Futures in Asia*, 12-13.

³⁹ China’s July 2005 failed attempt to buy UNOCAL is an example of a Chinese attempt to acquire equity in foreign natural resources.

⁴⁰ MacDonald et al., *Energy Futures in Asia*, 13.

⁴¹ According to the 2005 Department of Defense annual report to Congress on Chinese military power, PLA expeditionary forces include three airborne divisions, two amphibious infantry divisions, two marine brigades, about seven special operations groups, and one regimental-size reconnaissance element. China’s naval forces include 64 major surface combatants, some 55 attack submarines, and more than 40 medium and heavy amphibious lift vessels. China has deployed some 650-730 mobile CSS-6 and CSS-7 short-range ballistic missiles to garrisons opposite Taiwan and has more than 700 aircraft within un-refueled operational range of Taiwan.

the policy debate and China will embark upon a path of benign competition.

Ideological differences with the United States increase the risk that China will choose a martial path. Additionally, the 2005 Department of Defense annual report to Congress on Chinese military power identifies other factors that could lead to conflict. These include:

- Nationalistic fervor bred by expanding economic power and political influence
- Structural economic weakness and inefficiencies that undermine economic growth
- An inability to accommodate the forces of an open, transparent market economy
- A government that is still adapting to great power roles
- An expanding military-industrial complex that proliferates advanced weapons.⁴²

The interactions of complex political, economic, and social forces within China and their influence on Chinese strategic behavior are difficult to predict. For example, economic stagnation could aggravate domestic political problems for Communist Party leaders, leading Beijing to reduce military spending. Conversely, Chinese leaders could shift investments to the military in a bid to sustain domestic support through nationalistic assertions abroad.⁴³ An economic downturn and demographic change may catalyze the government to focus on internal rather than external threats to regime survival. Alternatively, an economic downturn may cause Chinese leaders to advocate the acquisition by force of natural resources to fuel their economy. The unpredictability of Taiwanese politics may provoke China to act militarily despite a willingness of certain factions within the Chinese government to negotiate a settlement. The point is that US action will not be the sole

⁴² Department of Defense, *Annual Report to Congress*, 8.

⁴³ Department of Defense, *Annual Report to Congress*, 8-9.

determinant or driver of Chinese foreign policy. The United States needs to be prepared for the contingency that China follows a less than friendly path.

The Need for US Action

The stakes are high; the United States cannot cede control of the region's strategic waterways without incurring immeasurable risk to vital US interests. First, failure to respond to China's "String of Pearls" strategy threatens US power projection capability. Emphasizing preparations to fight and win short-duration, high-intensity conflicts, China hopes to negate the United States' ability to intervene in the region, especially during a conflict with Taiwan. The US military cannot perform its primary missions—peacetime engagement, deterrence and conflict prevention, and fighting and winning the nation's wars—unless it maintains the ability to deploy forces in a timely and effective manner. China enjoys the enduring advantage of proximity and interior lines of communication in Asia.⁴⁴ The United States must overcome the tyranny of distance to project power and to protect the region's sea lines of communication. In a China-Taiwan conflict, delaying or harassing a US carrier task force may create conditions sufficient for PRC victory.

Unimpeded access through the South China Sea is strategically important not only in the event of conflict in the region, but also as a route to the Persian Gulf. Sixty-four percent of the known global oil reserves are concentrated in the Middle East. Surrendering maritime control to China would effectively give it a vote in US foreign policy. Even if China did not actively oppose US forces transiting through strategic chokepoints, it could impose significant time delays and costs. For example, a naval battle group proceeding from Yokosuka, Japan to Bahrain forced to sail around Australia would require an additional 15 days of transit. The extra fuel costs alone would amount to almost \$10

⁴⁴ Harold Brown, Joseph Prueher, and Adam Segal, *Chinese Military Power* (New York, NY: Council on Foreign Relations, 2003), 3.

million.⁴⁵ More critical than the monetary cost, the loss of speed and responsiveness may prove difficult to overcome.⁴⁶

Second, failure to respond to China's "String of Pearls" strategy would jeopardize freedom of navigation through chokepoints that are critically important to global economic interests. One quarter of the world's trade passes through the Strait of Malacca. Over 1,100 fully laden supertankers, many with only a meter or two of clearance between their keels and the channel bottom, pass eastbound through the Strait each year.⁴⁷ If China succeeds in gaining control of the Strait, then half of the world's merchant fleet would be required to seek alternative routes. This situation would result in huge economic losses, delays in shipping, and generate a substantial increase in the requirement for vessel capacity. If the Chinese threaten to close the Strait of Malacca and merchant ships are re-routed, commercial transportation costs will increase by 60 percent.⁴⁸

More importantly, China would be able to harm the economies of close allies, most notably Japan and South Korea. Threats to exert control over sea lanes would have an enormous impact, giving Beijing tremendous bargaining leverage. Japan and South Korea rely on US naval power to help protect the transit of their goods to market and the

⁴⁵ Reynolds Peele, "The Importance of Maritime Chokepoints," *Parameters*, Summer 1997, <http://carlisle-www.army.mil/usawc/Parameters/97summer/peele.htm> (accessed 22 March 2006). This assumes an average speed of 15 knots for a six-ship battle group.

⁴⁶ Rowan Scarborough, "China Company Grabs Power over Panama Canal," *Washington Times*, 12 August 1999, available at <http://www.conservativeusa.org/panama-washtimes.htm> (accessed 14 March 2006). Incidentally, China's methodical approach targeting US military strategic mobility has not been limited to Asia. For example, the Chinese government indirectly controls the Panama Canal. In 1997, Hutchison Whampoa, a company based in Hong Kong, purchased the rights to port facilities on both the Pacific and Atlantic terminals of the Panama Canal and secured a 25-50 year contract to run operations. Hutchinson Whampoa has ties to China's leadership and its armed forces. Effectively, US commercial and naval ships are at the mercy of Chinese-controlled pilots and could be denied passage through the canal. In a letter to the Secretary of Defense, Senator Trent Lott objected to Chinese ownership of canal facilities. He argued, "The Chinese Communist Party will gain an intelligence information advantage by controlling this strategic chokepoint. It appears that we have given away the farm without a shot being fired."

⁴⁷ John Noer, "Southeast Asian Chokepoints: Keeping Sea Lines of Communications Open," *Strategic Forum*, December 1996, http://www.ndu.edu/inss/strforum/SF_98/forum98.html (accessed 28 February 2006).

⁴⁸ Jae-Hyung, "China's Expanding Maritime Ambitions," 563.

flow of resources. Seventy percent of Japan's trade passes through the Strait of Malacca. The Japanese and South Korean economies are heavily dependent on the free passage of commercial traffic through the Strait of Malacca, yet neither country has the naval forces necessary to adequately protect its long-haul commercial shipping in the region. Not only does it benefit the United States to protect the vital interests of its close allies, the United States is bound by treaty to secure Japanese and South Korean sea lines of communication.⁴⁹

An American failure to protect Japanese and South Korean interests would weaken strategic alliances and encourage those nations to take their own defensive measures, potentially setting the conditions for a spiraling arms race. Ross Terrill, a national security expert at Harvard's Asia Center says, "A Japan that saw China eclipse the U.S. -- its major ally and whose primacy in East Asia explains six decades of Japanese restraint -- would surely challenge China."⁵⁰ If a regional arms race does not come to fruition and Japan chooses a conciliatory approach, then Japan may be forced into political accommodation as a result of overt Chinese threats or soft power influence.

Developing a Hedge Strategy

A Chinese national security strategist closely tied to the People's Liberation Army stated, "When a nation embarks upon a process of shifting from an 'inward-leaning economy' to an 'outward-leaning economy,' the arena of national security concerns begins to move to the oceans. Consequently, people start to pay attention to sea power. This is

⁴⁹ Japanese Ministry of Foreign Affairs, "Guidelines for US-Japan Defense Cooperation," April 2005, <http://www.mofa.go.jp/region/n-america/us/security/guideline2.html> (accessed 22 March 2006). See also William Cohen, Secretary of Defense, "The United States Security Strategy for The East Asia-Pacific Region" (speech to the Commonwealth Club of California), 21 July 1997, available at <http://www.defenselink.mil/pubs/easr98> (accessed 22 March 2006).

⁵⁰ Ross Terrill, "China is No Superpower," available at <http://nbnbnb.blog.com/383687>.

a phenomenon in history that occurs so frequently that it has almost become a rule rather than an exception.”⁵¹

In an *Atlantic Monthly* article, “How We Would Fight China,” Robert Kaplan predicts a future conflict as the Chinese navy increasingly seeks to project power and control the region’s sea lanes. He warns, “Given the stakes, and given what history teaches us about the conflicts that emerge when great powers all pursue legitimate interests, the result is likely to be the defining military conflict of the twenty-first century: if not a big war with China, then a series of Cold War-style standoffs that stretch out over years and decades.”⁵²

Many political scientists argue it’s a question of “when,” not “if” US-China relations sour (i.e., relations are defined by more than benign competition). As a result, some neo-conservatives advocate the United States follow a strategy that seeks to prevent or at least moderate China’s rise. Max Boot chides the Pentagon for failing to recognize China’s nefarious plotting and accuses “Chinese strategists, in the best tradition of Sun Tzu, [of] working on crafty schemes to topple the American hegemon.”⁵³ In response, Richard Haas, president of the Council on Foreign Relations, points out, “One problem with this thinking is that the rise and fall of countries is largely beyond the ability of the United States or any other outsider to control. The performance of states is mostly the result of demographics, culture, natural resources, educational systems, economic policy, political stability, and foreign policy. It is not clear the

⁵¹ Ni Lexiong, “Sea Power and China’s Development,” *The Liberation Daily*, 17 April 2005, translated for the US-China Economic and Security Review Commission, http://www.uscc.gov/researchpapers/translated_articles/2005/05_07_18_Sea_Power_and_Chinas_Development.htm (accessed 22 March 2006).

⁵² Robert Kaplan, “How We Would Fight China,” *The Atlantic Monthly*, June 2005, <http://www.theatlantic.com/doc/prem/200506/kaplan> (accessed 22 March 2006).

⁵³ Max Boot, “China’s Stealth War on the US,” *Los Angeles Times*, 20 July 2005, available at <http://www.tiea.us/8185.htm> (accessed 8 March 2006).

United States could prevent China's rise even if it wanted to.”⁵⁴ Either way, strained relations between the two countries are likely.

While war with China is not inevitable, it would be a serious mistake for the United States not to protect its vital interests and create a hedge against the risk of some sort of conflict—military and/or diplomatic. China stands at a strategic crossroads, and the United States must be prepared to respond to the uncertainties of any Chinese course of action. The dispute over Taiwan is an obvious flashpoint, but countering Chinese soft power requires strategic considerations beyond preparing against direct military confrontation. The United States must be prepared to fully engage China, but also capable of responding to potential Chinese attempts to attain regional hegemony through force or intimidation.

The United States has little influence over the pace and scope of Chinese military spending, but it can strive to maintain a strategic advantage in the region to protect trade, preserve regional influence, and threaten China’s strategic vulnerabilities if required. China’s ultimate goal is to control strategic chokepoints in the South China Sea and Indian Ocean. China’s “String of Pearls” strategy supports efforts to exclude the United States from the region. To offset the ability of Beijing to leverage its emergent military capabilities, the United States needs a sustained and robust naval and air presence in the region to prevent China from having the option of threatening US and allied interests.

The United States should take steps to encourage a peaceful and prosperous China while pursuing a hedge strategy to reduce the risks associated with a China that chooses a belligerent attitude in the realm of foreign policy. Ross Terrill remarked, “The expansionist claims of Beijing are unique among today's powers. But the Chinese regime is a rational dictatorship that has, for the past quarter century, been patient

⁵⁴ Richard Haas, “What to do about China,”
<http://www.usnews.com/usnews/opinion/articles/050620/20chinaessay.htm>.

in fulfilling its goals. It surely realizes that others -- such as the U.S., Japan, Russia and India -- have a variety of reasons for denying China the opportunity to be a 21st century Middle Kingdom. If Beijing continues to be faced with a countervailing equilibrium that keeps the peace in East Asia, it will probably act prudently.”⁵⁵

The United States should dissuade China through a position of strength, working to restore the regional balance of power to combat China’s expanding military power. While defending American and allied interests, this approach offers a promising way to avoid a large-scale conflagration with China and peacefully manage the rise of this behemoth. The following chapter discusses how 19th century ideas linking command of the sea to national power are influencing China’s current approach, analyzes ways to take advantage of shortcomings in China’s strategy, and suggests a theory to guide US actions.

⁵⁵ Ross Terrill, “China is No Superpower,” available at <http://nbnbnb.blog.com/383687>.

CHAPTER 2

COUNTERING CHINA'S STRATEGY

Today, the United States is strong and powerful, because it has an unmatched sea power. It has been pointed out that America's path to wealth and strength was revealed by Alfred Mahan over one hundred years ago. Currently, China is rising, while our nation's economic structure is completing the epic shift from an inward-leaning to an outward-leaning one, the choice of a sea power strategy has become an urgent task.

— Ni Lexiong
Chinese Military Scholar and Strategist

Alfred Thayer Mahan's ideas are shaping Beijing's geopolitical calculations and maritime aspirations.¹ In *The Influence of Sea Power upon History, 1660–1783*, Alfred Thayer Mahan advanced the theory that maritime commerce, overseas possessions, and privileged access to foreign markets produce national wealth and greatness. Mercantilist nations achieved power through command of the sea; naval superiority secured production, transportation, colonies, and markets. Although China shows little interest in colonies, its economic development relies heavily on a new form of mercantilism.² China is the world's most prolific manufacturing center and largest consumer of minerals. To fuel economic growth, Chinese mercantilist policies seek to secure imports of raw materials and expand markets for its finished goods overseas.

Chinese mercantilism, particularly when it comes to energy, constitutes a source of tension with the United States. In congressional testimony, Dr. June Dreyer, the chief of the US-China Economic and Security Review Commission, notes: "There is a clear distinction between US and PRC approaches to securing oil supplies. Whereas the United States has shifted from an oil import strategy that was based upon controlling the oil at its source to one that is based upon global market

¹ James Holmes and Toshi Yoshihara, "The Influence of Mahan upon China's Maritime Strategy," *Comparative Strategy* 24 (March 2005), 23.

² William Hawkins, "China Pursues 'Manifest Destiny through Imperialism and Mercantilism,'" *American Economic Alert*, 3 February 2005, http://www.americaneconomicalert.org/view_art.asp?Prod_ID=1246 (accessed 22 March 2006).

supply and pricing, the PRC strategy is still focused upon owning the import oil at the point of production. Geopolitically, this could bring both countries' energy interests into conflict. The US strategy is to have plenty of oil available on the world market, while PRC wants to own the barrel that they import."³ When a nation's prosperity depends on ship-borne commerce and natural resources are limited, the pursuit of mercantilist policies fosters competition and threatens a naval contest.⁴

Based on China's dependence on sea lines of communication to import natural resources and transport finished goods to market, its economic development and maritime strategies are deeply intertwined. For this reason, Chinese leaders consider control of the oceans to be of vital importance for national power.

Mahan's Influence on Chinese Maritime Strategy

Chinese traditionalists embrace a Hobbesian notion of survival of the fittest and view national security as a zero-sum game with the United States. They believe in the Mahanian mantra that whoever controls the sea will prosper and win wars. Ni Lexiong, one of China's leading national security experts closely tied to the People's Liberation Army, asserts, "In recent decades, as the overseas trade section in our national economy has grown bigger and bigger, the question of a 'life-line at sea' has become more and more important."⁵ Mahan's influence features prominently in Chinese military discourse. Speaker after speaker, almost without exception, at a 2004 sea-lane security symposium in Beijing quoted the most bellicose-sounding Mahan precepts.⁶ China's

³ US House, Statement of Dr. June Teufel Dreyer, Commissioner for the US-China Economic and Security Review Commission: Hearings before the House International Relations Committee, Subcommittee on the Western Hemisphere, 6 April 2005, http://www.house.gov/international_relations/109/teu040605.pdf (accessed 22 March 2006). PRC is the abbreviation for the People's Republic of China.

⁴ Holmes and Yoshihara, "The Influence of Mahan upon China's Maritime Strategy," 25.

⁵ Ni Lexiong, "Sea Power and China's Development," *The Liberation Daily*, 17 April 2005, translated for the US-China Economic and Security Review Commission, http://www.uscc.gov/researchpapers/translated_articles/2005/05_07_18_Sea_Power_and_Chinas_Development.htm.

⁶ Holmes and Yoshihara, "The Influence of Mahan upon China's Maritime Strategy," 25. For instance, Wang Zaibang, vice president of the China Institute of Contemporary International Relations, led off a

increasing dependence on imported natural resources and fears provoked by Taiwan's rhetoric concerning independence have added a sense of urgency and a desire for a superior navy.

Questioning conventional wisdom that China is strictly a continental power, Chinese scholars proudly note that China once dominated Asian waters. At one time, China even assembled the largest fleet ever to sail on the ocean. Between 1405 and 1433, Admiral Zheng commanded the world's most powerful fleet, which consisted of at least 317 ships and 37,000 men. The number of ships in Zheng's fleet surpassed the combined fleets of all Europe. His flagship was a nine-masted vessel measuring 440 feet—nearly 1.5 times the length of a football field.⁷ However, Chinese naval prowess started to wane in the seventeenth century.

Chinese military officers and scholars point out that China has suffered immensely for allowing its maritime power to atrophy. Britain exploited China's relative maritime weakness in the 1800s and forced China to grant it special trading privilege and the exclusive use of coastal ports.⁸ Britain used its naval power to annex Chinese territory, to include Hong Kong in 1841. China had to wait more than one hundred and fifty years to regain sovereignty over the territory. In the First Sino-Japanese War (1894-1895), the Japanese fleet was four to six times

session on "Challenges on Sea-lane Security in the Asia Pacific: Categorization and Evaluation" by emphasizing Mahan's theories on decisive engagement.

⁷ "The Remarkable Ocean World: Zheng's Fleet," <http://www.oceansonline.com/zheng.htm> (accessed 16 March 2006).

⁸ US Department of State, "Cushing and Perry Open Asia," <http://www.state.gov/r/pa/ho/time/dwe/14324.htm> (accessed 1 March 2006). In 1844, the United States also sent a naval expedition to China to negotiate a treaty with China to open its ports. The Treaty of Wangxia granted to American merchants the same rights as British traders enjoyed based upon the "most-favored nation" principle. In another example of gunboat diplomacy, the United States sent Commodore Matthew Perry to Japan in 1853. Perry's flotilla of what the Japanese termed "black ships" threatened military action unless the Japanese allowed unfettered access to two trading ports, commercial relations, and a source of coal for American vessels.

bigger than that of the Chinese fleet.⁹ Japanese firepower obliterated Chinese naval opposition; China lost five war ships while the Japanese lost none. As part of the armistice terms, Japan forced China to cede control of Taiwan. Ni Lexiong concludes that pre-war spending to improve Chinese naval capabilities would have prevented a monetary loss equivalent to eighty times the amount spent.¹⁰

As a result of these experiences, Chinese military strategy has changed to reflect a greater understanding of the value of sea power. China abandoned its coastal defense strategy and adopted an increasingly aggressive offshore defense. China's "String of Pearls" strategy challenges US maritime superiority in the South China Sea and the Indian Ocean by developing a strong and powerful naval force to place the US Navy, particularly American aircraft carriers, at risk. Improved Chinese naval capabilities provide decision makers with both offensive and defensive options. China's methodical and accelerating naval buildup permits it to do more than simply protect its long-haul oil tankers. Chinese naval forces can threaten both US power projection capability and the oil lifeline of other energy consumers.

The Chinese Naval Threat

China's military, especially its navy, is no paper tiger. China spends one-third of its military budget on its navy. China maintains the largest navy in Asia, operating 69 submarines, 62 surface combatants, 56 amphibious ships, 39 mine warfare ships, 368 coastal patrol craft, and 3 replacement-at-sea oilers.¹¹ China's five-year plan prioritizes shipbuilding, which is expected to surpass Japanese and South Korean

⁹ Lexiong, "Sea Power and China's Development," http://www.uscc.gov/researchpapers/translated_articles/2005/05_07_18_Sea_Power_and_Chinas_Development.htm.

¹⁰ Lexiong, "Sea Power and China's Development," http://www.uscc.gov/researchpapers/translated_articles/2005/05_07_18_Sea_Power_and_Chinas_Development.htm.

¹¹ Harold Brown, Joseph Prueher, and Adam Segal, *Chinese Military Power* (New York, NY: Council on Foreign Relations, 2003), 44.

capabilities by 2010. At the present pace of expansion, the People's Liberation Army Navy (PLAN) will have the world's largest naval force by 2020.¹² PLAN force modernization priorities include the development of the following:

- A new generation of surface combatants with improved air defense, anti-submarine, and anti-ship capabilities
- Modern conventional and nuclear attack submarines with advanced torpedoes and cruise missile capabilities
- An improved naval air arm
- Greatly improved replenishment-at-sea capabilities.¹³

China is also exploring the use of ballistic missiles for anti-access and sea-denial missions.

The PLAN purchased modern, Russian-made SS-N-22/SUNBURN and SS-N-27/SIZZLER anti-ship cruise missiles (ASCMs) and accelerated the pace of indigenous ASCM research, development, and production. Armed with a 300 kg warhead, the SUNBURN skims the ocean at a top speed of Mach 2.5 and engages in radical evasive maneuvers as it nears the target. The missile "deeply worries US Naval planners" because they have been unable to develop effective countermeasures to a missile that is specifically designed to penetrate the defenses of carrier groups.¹⁴

In addition to missiles, China purchased technologically advanced ships from Russia. China took delivery of two Sovremenny-class destroyers, which are designed specifically to counter US-Aegis destroyers, for \$840 million and awaits delivery of two additional ships at a cost of \$1.4 billion.¹⁵ China also purchased Kilo-class submarines armed with wake-homing torpedoes.

¹² Hideaki Kaneda, Retired Vice Admiral of Japan's Self-Defense Forces, "The Rise of Chinese Sea Power," *Project Syndicate*, 2005, <http://www.project-syndicate.org/commentary/kaneda7/English> (accessed 1 March 2006).

¹³ Brown, Prueher, and Segal, *Chinese Military Power*, 28.

¹⁴ Holmes and Yoshihara, "The Influence of Mahan upon China's Maritime Strategy," 38.

¹⁵ Richard Fisher, "China Buys New Russian Destroyers," *The Jamestown Foundation China Brief* 2, no. 3 (31 January 2002),

Countering Mahan with Corbett and Airpower

Mahan's theories are powerful, but context and the means of achieving maritime influence have changed since he wrote his seminal work in 1890. To counter China's "String of Pearls" strategy, the United States should exploit weaknesses in China's Mahanian geopolitical approach. Specifically, the United States should counter China using Corbettian principles of naval strategy updated to include airpower.

Sir Julian Corbett, a British naval historian and geostrategist of the late 19th and early 20th centuries, advocated a fundamentally different approach to naval warfare than Alfred Mahan. Corbett placed less importance on decisive fleet battles and instead emphasized commerce prevention. He contended, "It is obvious that if the object of naval warfare is the control of communications, it must carry with it the right to forbid, if we can, the passage of both public and private property upon the sea . . . Such capture or destruction is the penalty which we impose upon our enemy for attempting to use the communications of which he does not hold the control."¹⁶

Corbett recognized that naval strategy is not an end in itself, but a means to an end. In a contemporary context, US forces must be of sufficient strength to deter China from starting a conflict and to prosecute it effectively if they do. Sea control is important to the extent that a country benefits from the use of sea lines of communications and the enemy suffers from being denied their use. For the United States, the main benefits of maintaining maritime hegemony in Asian waters include access for power projection, regional influence, secure routes of commerce, and freedom of action.¹⁷ US lethality in the maritime domain remains a prime factor in deterring a Chinese invasion of Taiwan. But,

http://www.jamestown.org/publications_details.php?volume_id=18&issue_id=643&article_id=4609 (accessed 16 April 2006).

¹⁶ Julian Corbett, *Some Principles of Maritime Strategy* (Annapolis, MD: Naval Institute Press, 1988), 95.

¹⁷ Power projection refers not only to the ability to strike, but also to the ability to deploy and sustain forces when required.

China's increasing ability to threaten US naval forces lessens the deterrence value of carrier task forces. As Robert Kaplan points out, "China is focusing on missiles and submarines as a way to humiliate [the United States] in specific encounters."¹⁸ Preventing hostile Chinese action requires bolstering the punishment element of US strategy. In other words, the US should improve its capabilities to inflict high costs on China in the event of conflict and be prepared to target China's strategic vulnerabilities.

Waterways are a center of gravity for China's economy. China's disparate regional growth increases its dependence on sea lanes. An *Asia Intelligence* report notes, "As might be expected in a physically large country where most of the economic growth is occurring in coastal regions and where there are constraints on infrastructure, water transportation is important in China and has been growing quickly . . . China's waterways accounted for 55% of all transportation in the country in 2003. The relative importance of the waterways has been increasing."¹⁹ China's reliance on waterways for transportation has increased 10 percent since 1990. Without oil imported via sea lanes primarily from the Middle East, the Chinese economy would suffer a serious and debilitating shock.

The United States can exploit China's dependence on sea lanes—a strategic weakness. The Defense Department's 2005 annual report to Congress on Chinese military power concludes, "For the foreseeable future, China will rely on overseas sources for oil and other strategic resources, meaning China will remain reliant upon maritime transportation to meet its energy demands."²⁰ Of the 3,000 seaports

¹⁸ Robert Kaplan, "How We Would Fight China," *The Atlantic Monthly*, June 2005, <http://www.theatlantic.com/doc/prem/200506/kaplan> (accessed 22 March 2006).

¹⁹ Will Ollard, "The Search For Sustainability: Consequences of China's Growing Energy Demand," *Asia Intelligence Special Report*, ed. David Line, November 2004, 4.

²⁰ Department of Defense, *Annual Report to Congress: The Military Power of the People's Republic of China* (Washington, DC: Office of the Secretary of Defense, 19 July 2005), 10. By 2015, Beijing plans to build a strategic petroleum reserve (SPR), but poor logistic and transportation networks will remain an

along its eastern coast, seven handle 90 percent of all sea imports and four act as the gateway for most oil imports. A report produced for the Office of Net Assessment in the Pentagon states, “These oil seaports are targets that can be easily neutralized or completely destroyed. . . . Their vulnerabilities are well known. Seaports are characterized by fixed facilities that have been well mapped and photographed, such as cranes, forklifts, oil pumps, control stations, and storage units, roads, railroads, and pipelines. [Furthermore] refineries and terminals represent vulnerable military targets.”²¹ Despite their vulnerability, attacking mainland ports and refineries may not be politically acceptable.

As an alternative to attacking mainland targets, the United States can use its naval fleet and airpower to patrol long-haul shipping routes, particularly near chokepoints, to threaten what the Chinese value—their economic development. Chinese government officials openly acknowledge that (1) their economy is dependent on imported oil; (2) more than eighty percent of their imported oil must pass through narrow straits to reach the Chinese coast; and (3) this is a glaring strategic vulnerability. The Chinese call their predicament the “Malacca Dilemma.” Chinese leaders recognize this vulnerability and have vastly improved China’s ability to attack US Navy ships and counter American naval superiority.

Instead of meeting a maritime threat with additional maritime forces, US strategists should consider how to economize force and leverage other military assets. *China Naval Modernization*, a 2005 Congressional Research Service report, warns that China already possesses a credible maritime anti-access capability.²² Because the report’s mandate was to assess US Navy shortcomings, its

Achilles’ heel. The 2005 annual report to Congress on Chinese Military Power suggests that the Chinese SPR is inadequate and will not satisfy their needs during a wartime contingency.

²¹ Juli MacDonald, Amy Donahue, and Bethany Danyluk, *Energy Futures in Asia*, Booz Allen Hamilton report sponsored by the Director of Net Assessment, November 2004, 37.

²² Ronald O’Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities — Background and Issues for Congress*, Congressional Research Service report (no. RL33153), 18 November 2005, 26.

recommendations are limited to options for improving US Navy capabilities. Rather than increasing the size of the Navy, the Pacific fleet, and the number of aircraft carriers, US military strategists should avoid platform-centric thinking and explore alternate courses of action.

Airpower offers the capability to respond asymmetrically to the Chinese maritime threat while targeting China's strategic weakness—its dependence on sea lines of communication. A strategy that uses airpower to threaten China's long-haul tankers offers an indirect approach capable of exerting considerable influence on China. China's navy and commercial ships remain vulnerable to airpower, particularly as the distance from its coastal waters increases. Limited organic air defense capability leaves Chinese surface ships vulnerable to attack from US air forces, and the Chinese naval and army air force lack the operational range to support PLA operations.²³ The use of land-based airpower also helps free the United States from a Mahanian big-battle fixation.

Sea control is not a binary proposition. A decisive sea battle is both difficult to achieve and unnecessary. Paradoxically, less concentration is more likely to lead to a major battle. In fact, it is in China's interest to avoid a decisive naval confrontation. The US cannot necessarily force China into a major naval engagement; China can execute a fleet-in-being strategy. China's fleet does not have to leave port to influence US actions. The existence of a Chinese navy forces the United States to deploy forces to guard against hostile fleet action. In this respect, Corbett emphasizes the conditional nature of sea control and recognizes that temporary and local sea control measures are sufficient to achieve strategic goals.

Concentration at sea is problematic because the more a navy concentrates, the fewer sea lanes of communication and the less space it

²³ Department of Defense, *Annual Report to Congress: The Military Power of the People's Republic of China* (Washington, DC: Office of the Secretary of Defense, 19 July 2005), 33.

can secure and control.²⁴ Corbett asserted, “Concentration implies a continual conflict between cohesion and reach, and for practical purposes it is the right adjustment of those two tensions—ever shifting in force—which constitutes the greater part of practical strategy.”²⁵ Instead of “huddling together like a drove of sheep,” airpower can cover a large geographic area while preserving flexibility and allowing for rapid concentration.²⁶ The inherent speed and range of airpower allows for dispersed operations to better control sea lines of communication, yet provides the ability to mass if the enemy presents the opportunity.

Absent a decision through engagement, blockades offer a method of securing sea control. Corbett thought conducting a close blockade was an undesirable form of war because it tends to occupy a force greater than that against which it was acting.²⁷ A close blockade targets crowded terminals of departure and arrival. However, these areas tend to enjoy superior defenses. In contrast, an open blockade that pursues a zone defense is more effective and efficient. An open blockade conceals force disposition and is more apt to lure a hostile navy into direct confrontation.²⁸ Open blockades target chokepoints because trade tends to converge due to the natural conformation of land. This characteristic is valuable because it reduces the required search area.

The narrowness of the Strait of Malacca and the amount of trade that funnels through it creates a decisive control point for world shipping. Whoever controls access to the Strait controls the most direct route from the Indian Ocean to the Pacific (see Figure 2).

²⁴ Michael Handel, “Corbett, Clausewitz, and Sun Tzu,” *Naval War College Review*, Autumn 2000, available at <http://www.au.af.mil/au/awc/awcgate/navy/art7-a00.htm#author>.

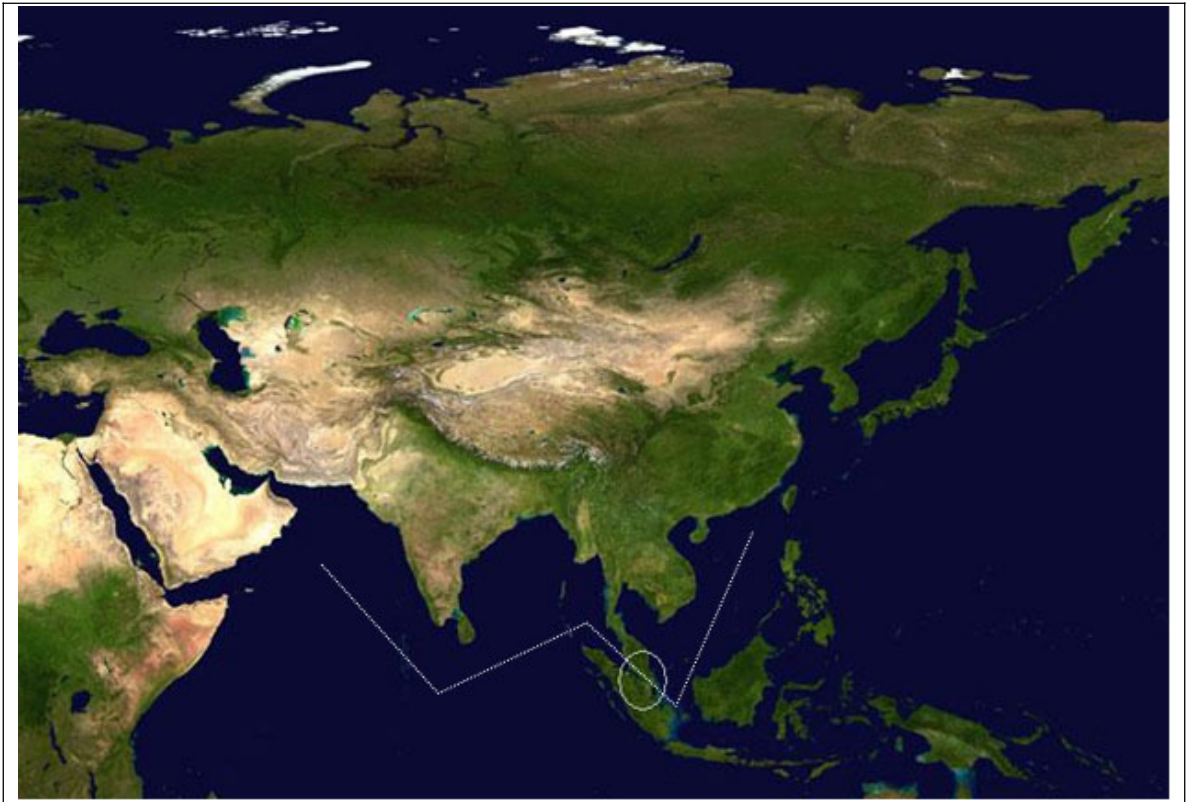
²⁵ Corbett, *Some Principles of Maritime Strategy* 132.

²⁶ Handel, “Corbett, Clausewitz, and Sun Tzu,” 131.

²⁷ Handel, “Corbett, Clausewitz, and Sun Tzu,” 188.

²⁸ Handel, “Corbett, Clausewitz, and Sun Tzu,” 206.

Figure 2. The Strait of Malacca . . . A Decisive Control Point along the Most Direct Shipping Route from the Middle East to the Pacific



Airpower offers a promising way to exercise control of this natural funnel, execute an open blockade, and capitalize on a Corbettian strategic framework. General Richard Hawley, a former commander of Air Combat Command comments, “The Asia-Pacific is often viewed as primarily a naval theater of operations, but this misses the mark. This vast area has long been and will remain a region where aerospace power, both sea- and land-based, is the force of choice.”²⁹ Airpower provides the ability to rapidly conduct maritime interdiction against enemy combatants and merchant ships. Furthermore, airpower can help control the littorals. This idea does not simply re-package Billy Mitchell’s

²⁹ Richard Hawley, Michael Donley, and John Backschie, “Enhancing USAF’s Pacific Posture,” *Armed Forces Journal International*, September 2002, http://www.armedforcesjournal.com/AFJI/Mags/2002/Sept/USAF_Pacific.html (accessed 8 January 2006).

argument that airpower can replace the Navy's battle fleet, but rather leverages land-based airpower to complement sea power.

Land-based airpower can help naval forces control key maritime choke points, trade routes, and canals. In Mahanian terms, airfields can serve as the new "coaling stations." More importantly, though, land-based airpower can augment naval forces by providing additional protection, reach, intelligence, surveillance, and reconnaissance (ISR), and strike capability.³⁰ Manned and unmanned ISR platforms (and space platforms) supply critical intelligence and provide greater battlefield transparency, which is beneficial to all of the armed services. Improved information fidelity serves as a force multiplier that allows commanders to exercise economy of force and to position forces optimally.

Employing land-based airpower jointly with naval assets to counter the Chinese maritime threat forces the Chinese military to respond to a host of operational problems rather than just a few. Airpower also provides a political tool with which to signal intentions and is more flexible and more mobile than land and potentially sea power. Robert Kaplan warns, "Never provide your adversary with only a few problems to solve because if you do, he'll solve them."³¹ Accordingly, US national security planning is best served by efforts to ensure the availability of both sea-based and land-based aviation that provide a range of airpower capabilities suitable for a spectrum of contingencies, including the ability to interdict Chinese maritime commerce.³²

Strangling commerce with an emphasis on oil imports requires dispersed operations over a wide geographic area. Naval operations in the China-Taiwan Strait may take priority over other regions, and carrier-based aviation may not have the range or be able to generate

³⁰ Air Force Doctrine Document (AFDD) 2-1.4, *Countersea*, 15 September 2005, 7.

³¹ Kaplan, "How We Would Fight China," <http://www.theatlantic.com/doc/prem/200506/kaplan>.

³² Charles Perry, Laurence Rothenberg, and Jacquelyn David, *Airpower Synergies in the New Strategic Era* (McLean, VA: Brassey's, Inc., 1997), xx.

enough sorties to cover the Strait of Malacca. Figure 11 in Chapter 4 depicts a nominal 1,500- mile combat radius centered on the Strait of Malacca. Carrier operations positioned east of Taiwan are significantly outside this range.

According to one point of view, the United States needs a large number of small carriers, rather than a small number of large carriers, in order to meet the enemy at as many points as possible. In an era of dwindling naval assets, land-based airpower can fill coverage gaps. In a *Layman's Guide to Naval Strategy*, a book adopted by the US Navy and placed in the library of every American ship, Bernard Brodie observes, "The old dispute about whether the airplane could or could not sink a battleship has long since been answered, but the issue was always somewhat beside the point . . . discerning observers asked not so much how well the warship would fare under air attack as whether Britain's vast shipping could be carried on in the shadow of the Luftwaffe."³³

Characteristics of Land and Sea-based Airpower

Understanding the strengths and weaknesses of land-based airpower and carrier aviation helps commanders select the right combination of forces. Relying on one tool without considering the relative merits of other options may not produce a strategy as effective or efficient as using multiple tools in combination.³⁴

In one sense, bomber diplomacy can supplement gunboat diplomacy during a crisis. For example, a US naval task force may not be in position to steam through the Strait of Taiwan, but aircraft can deploy quickly to the region to demonstrate US resolve. Far from offering a ubiquitous presence, the US Navy normally maintains one aircraft carrier in the Western Pacific with a reserve carrier in port on the west coast of the United States. In the case of the latter, transit time across

³³ "Reference Data on the Aircraft Carrier: Its Role, Capabilities, and Limitations," (8 August 1949, revised 26 September 1949), Air Force Historical Research Agency document 168.15-25, 33a.

³⁴ Clayton Chun, *Aerospace Power in the Twenty-First Century: A Basic Primer* (Maxwell Air Force Base, AL: Air University Press, July 2001), 11.

the Pacific remains a key consideration. A reserve carrier would not arrive in waters near China for two weeks.³⁵ In a rapidly developing crisis situation, there may not be time to wait for an additional carrier to arrive on station. China's military modernization objective is to field a force that can succeed in a short-duration conflict that ends prior to United States intervention.³⁶ Forward deployed and rapidly deployable forces thus become critically important for US strategy.

Land-based airpower is valuable since it can rapidly provide global mobility and precision strike. Dr. David Mets, a former professor at the School of Advanced Air and Space Studies, stated, "Land-based airpower can position itself and establish a presence in distant areas more rapidly than any other type of military force; it provides enormous flexibility by permitting deployment of various types of power instantly, either en masse or incrementally; it can redeploy from a location almost as quickly as it deployed; and, unlike other forms of airpower, land-based aircraft has the capability to be placed over virtually any geographical location in the world within hours of decision."³⁷ For example, six F-117s and six B-52s flew from bases in the continental United States to deploy to Southwest Asia in November 1998 as part of a strategy to counter Iraq's defiance of U.N. resolutions. After crossing 10 time zones and covering 8,000 miles, these aircraft were ready for combat the following day.³⁸

Comparing how quickly land-based airpower can deploy versus how quickly an aircraft carrier can steam into position highlights one significant difference between land-based airpower and carrier aviation. There are other significant differences (reference Table 2).

³⁵ In the Gulf War, aircraft carriers took up to a month to reach the theater from the United States, while Air Force airplanes deployed in nonstop 14-hour sorties.

³⁶ O'Rourke, *China Naval Modernization*, 26.

³⁷ David Mets, *Land-Based Air Power in Third World Crises* (Maxwell Air Force Base, AL: Air University Press, 1986), 3.

³⁸ Anne Proctor, "F-117s, B-52s add extra airpower muscle in Persian Gulf," *Air Force News*, November 1998, <http://www.af.mil/news/airman/0298/aef2.htm> (accessed 8 January 2006). The F-117s and B-52s flew 14 hours nonstop across the Atlantic Ocean, through the Straits of Gibraltar, over the Mediterranean Sea, then across Egypt, the Red Sea and finally into Southwest Asia.

Table 2. Comparison of Sea and Land-based Airpower

	<i>Sea-based Airpower</i>	<i>Land-based Airpower</i>
Responsiveness/Power Projection		
Ability to respond quickly	Excellent if carrier on location or able to quickly move within range. Can move forward on warning.	Excellent if operating from forward bases. (Depends on availability of bases & rapid commitment decision)
Dependence on Local Bases	Range to targets may require land-based tanker support (potentially overflight permission is also required)	Critical
Enroute Access	Some limitations (e.g., Suez)	Forward deployment may require bases and/or tankers
Dependence on Pre-positioning and/or Airlift	Limited unless sustained operations are required	Limited if permanent forward-operating bases nearby, otherwise substantial
Firepower	Surges to generate high sortie rates or to sustain firepower are challenging	Potential to bring substantial sustained firepower, depending on forces assigned

Relevancy		
Access to Targets	Needs nearby deep water and/or tankers	Regional bases preferred – long-range flights increase tanker, aircrew, and force requirements
Show of Force	Excellent when threat is within range, and carrier near area of interest, otherwise limited	Excellent when local basing permits deployment, otherwise limited
Ability to Achieve Surprise	Limited	Excellent for Stealth
Flexibility	Limited by speed of carrier task force	Good
Ability to do other Combat Missions	Good	Good
Ability to influence	Good	Good
Vulnerability		
Capability in Heavy Defense Environment	Limited – needs SEAD and escort support	Excellent for stealth

Survivability of bases	Varying location reduces risk. Critical if hit, may be down for extended time. Cost of a carrier impacts how carriers are employed.	Good. Hit may not be critical-runways are easy to repair.
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Source: Adapted from Charles Perry, Laurence Rothenberg, and Jacquelyn David, *Airpower Synergies in the New Strategic Era* (McLean, VA: Brassey's, Inc., 1997), 46.

Land-based airpower can generate substantial sorties and firepower with global reach, but its performance in this regard is potentially beholden to securing forward-operating bases. Land-based airpower's most critical operational limitation is the availability of suitable airfields in or sufficiently near a crisis area. Although global power missions are able to fly missions from the continental United States, land-based airpower's ability to generate sorties suffers if over-flight rights and in-theater basing are not secured.

Aircraft carriers do not require host nation permission to operate in international waters, but they cannot deliver the same spectrum of performance as land-based airpower. Aircraft carriers constitute a specialized airpower asset, not a self-sufficient substitute for land-based airpower.³⁹ Operations requiring sustained firepower or high sortie rates are particularly challenging. Without strategic warning, aircraft carriers may require significant time to reposition. Most critically, aircraft carriers are vulnerable, especially when facing an adversary with advanced weapons, and are expensive. As a rule of thumb, operating costs for carrier-based aircraft run three to four times as much as a

³⁹ Rebecca Grant, "The Carrier Myth," *Air Force Magazine*, March 1999, <http://www.afa.org/magazine/March1999/0399carrier.asp> (accessed 8 January 2006).

land-based aircraft.⁴⁰ The following sections provide a more detailed discussion of the unique advantages and limitations of land-based airpower and carrier aviation.

Advantages and Limitations of Land-based Airpower

Land-based airpower enjoys an advantage over other types of air power with respect to its range and payload characteristics. Global in nature, land-based airpower has the ability to travel vast distances unimpeded by terrain, perform strategic surveillance and reconnaissance, and deliver large amounts of conventional ordnance.⁴¹ A B-2 carries sixteen precision-guided munitions (PGMs) and is being upgraded to carry 200 small diameter bombs. In contrast, the Navy's primary fighter aircraft, the F/A-18, carries four PGMs. The B-2 has an unrefueled combat range of 6,000 miles, while the F/A-18's combat radius is considerably less at 1,300 miles. Not only does land-based aircraft enjoy an advantage over sea-based airpower with respect to range and payload, there also is a large disparity in numbers.

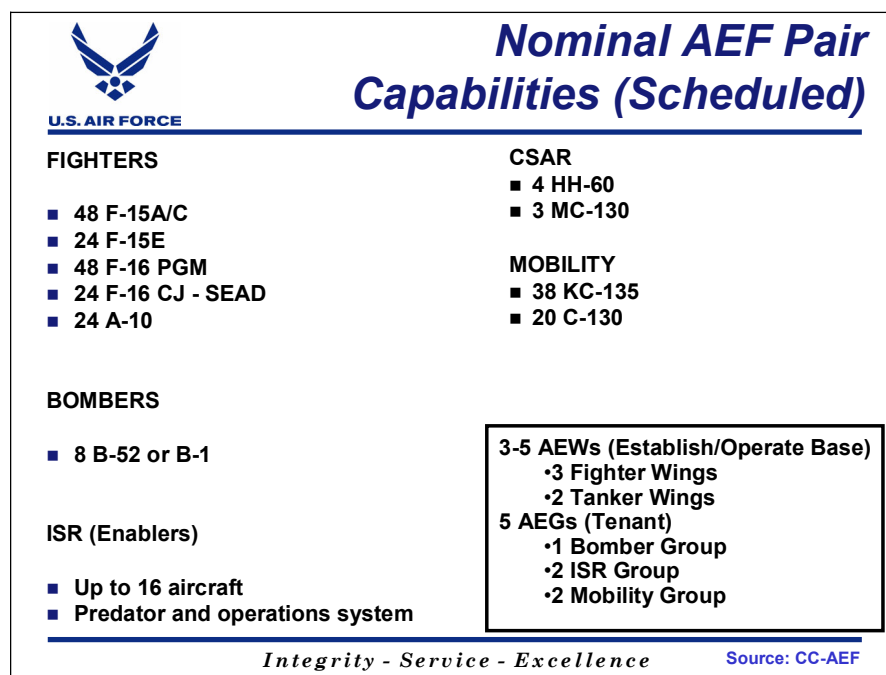
The United States has many more land-based attack, fighter, bomber, and reconnaissance aircraft than it has carrier aircraft. The United States Air Force has roughly 2,000 combat aircraft.⁴² Figure 3 lists the number of platforms included in a nominal Air and Space Expeditionary Force (AEF).

⁴⁰ Richard Hallion, "Air Warfare and Maritime Operations" (Air Force Historical Studies Office, June 1996), <https://www.airforcehistory.hq.af.mil/EARS/Hallionpapers/airwarfaremaritimejune96.htm>.

⁴¹ Mets, *Land-Based Air Power in Third World Crises*, 3.

⁴² Air Force Association, "The Air Force in Facts and Figures," *Air Force Almanac*, May 2005, <http://www.afa.org/magazine/may2005/0505structure.pdf>.

Figure 3. Nominal AEF Capabilities



Source: Headquarters US Air Force, "US Air & Space Expeditionary Force," PowerPoint briefing, 12 April 2005.

With Air Reserve components mobilized, on-call AEF capabilities expand more than two-fold:

	From	To
Combat Wings	2-3	5-6
Recon Squadrons	1	3
Bomber Squadron	1	2
Austere Locations	2-3	4-5

The Air Force divided its forces into 10 AEFs. It can indefinitely sustain a battle rhythm of 2 AEFs and can surge to provide more airpower. For example, the Air Force deployed and maintained 3+ AEFs during Operation Iraqi Freedom.

In contrast, the US Navy operates only about a third as many combat aircraft as the Air Force. An aircraft carrier carries approximately 85 aircraft, not all of which are available for or capable of conducting strike missions. The United States will have one, maybe two, aircraft carriers available during a conflict with China. The relatively

small number of carrier-based aircraft is insufficient for surveillance and striking power both in and near the Strait of Taiwan and the Strait of Malacca.

In short, the firepower and surveillance capabilities assigned to one AEF far outweigh the capacities resident in an aircraft carrier. The Air Force maintains the preponderance of strike assets in the US inventory and can potentially contribute a large number of aircraft to support joint maritime operations. Land-based airpower provides rapid and large area coverage and allows for a swift transition from defensive to offensive roles to dominate the maritime environment.⁴³ The main limitation, however, remains regional base access.

Advantages and Limitations of Carrier Aviation

Aircraft carriers are tremendous strategic assets that provide valuable capabilities. Carriers provide a limited amount of airpower for brief periods.⁴⁴ Historically, a Navy carrier launches approximately 125 sorties per day, a portion of which is flown in support of fleet defense. Free from political restrictions, aircraft carriers operating in international waters do not require host nation consent to launch sorties. They are mobile airfields that sail at the discretion of US policy-makers. Aircraft carriers can either operate independently or support coordinated military action.

Despite these advantages, aircraft carriers face serious limitations. Built by skilled craftsmen with expensive materials, an aircraft carrier is a floating city complete with its own runway. Concentrated into an area the size of an acre, an aircraft carrier is restricted to the launching, storage, and maintenance facilities originally built into them. An aircraft carrier must operate according to strict launch cycles and cannot remain on station indefinitely. In contrast, the facilities at most land-based

⁴³ Air Force Doctrine Document (AFDD) 2-1.4, *Countersea*, 15 September 2005, 7.

⁴⁴ Reference the discussion regarding sortie generation in subsequent paragraphs.

airfields are dispersed over an area of several square miles, open to expansion (i.e., land-based airfields can accommodate more aircraft than an aircraft carrier), largely constructed of ordinary building materials, and available for use 365 days of the year.

The air wing on an aircraft carrier is unable to sustain high sortie rates and persistent firepower. An aircraft carrier launches approximately 125 sorties daily and has a surge capability of 200 sorties, but must stand-down after approximately a week of operations due to safety considerations.⁴⁵ Theoretically, a carrier air wing can surge to provide over 4 sorties per day per aircraft. But, that sortie rate requires special circumstances: maintainers must have sufficient notice to prepare aircraft, logisticians must stockpile munitions, and extra pilots must complement the air wing's normal roster of fliers. Aircraft carriers that participated in Desert Storm were only able to muster 24 sorties per day per carrier.⁴⁶ Six carrier rotations were required to support the UN-mandated no-fly zone over Bosnia. Even though operations in the Mediterranean were benign and Bosnian airspace was less than 100 miles away, carriers launched only about 10 percent of the NATO total, fewer than both the French air force and the Royal Air Force. In comparison, a relatively small air expeditionary force of US Air Force jets flew 31 percent of the total sorties.⁴⁷ In addition to sortie-generation issues, aircraft carriers are also vulnerable.

Aircraft carriers can be sunk. Carriers represent a significant national investment that policymakers may not be willing to risk to

⁴⁵ Grant, "The Carrier Myth," <http://www.afa.org/magazine/March1999/0399carrier.asp>. Carriers operating in the littorals face a greater risk than if they operate in the deep-water because more threats can potentially target them. To lessen risk, aircraft carriers usually sail farther away from a threat (i.e., increasing the distance between the carrier and the threat). Carrier aviation can be teamed with land-based tankers such as the KC-10 and KC-135 to extend range and sortie duration. But, that reduces the number of sorties carriers are able to generate. The distance to a target also affects launch-and-recovery cycles. If an aircraft returns from a sortie prior to the end of a launch cycle (i.e., hits a target close to the ship), the pilot must wait until the launch cycle ends and the aircraft carrier prepares to accept landings. This "wasted" loiter time hurts the ability of an aircraft carrier to generate sorties.

⁴⁶ Grant, "The Carrier Myth," <http://www.afa.org/magazine/March1999/0399carrier.asp>.

⁴⁷ Grant, "The Carrier Myth," <http://www.afa.org/magazine/March1999/0399carrier.asp>.

maximize operational effectiveness. For example, during the Falklands War, Argentina forced the British to redeploy their aircraft carriers well away from the Falkland Islands due to the threat posed primarily by four operational Etendards and their Exocet missiles.⁴⁸ Consequently, Harriers had to fly long distances to provide close air support and only had limited fuel to loiter. China has significantly more capability to threaten US aircraft carriers. To protect Taiwan, an aircraft carrier must operate within a predictable zone. This limited area combined with readily available satellite imagery and signals/electronic intelligence will most likely allow China to find, fix, track, and target a carrier task force. Robert Kaplan warns, “The effect of a single Chinese cruise missile’s hitting a US carrier, even if it did not sink the ship, would be politically and psychologically catastrophic, akin to al-Qaeda’s attacks on the Twin Towers.”⁴⁹ Even if a carrier suffers battle damage rather than being sunk, its performance will be degraded and repair may require months.

Political leaders may withhold carriers from hazardous action if the potential benefit from action does not surpass the costs associated with losing a carrier. Chapter 3 provides several examples during World War II when aircraft carriers withdrew due to the threat of continued enemy action despite ground commanders’ pleas for air support. US Navy leaders are likely to advise against operations that place carriers at great risk and may prove reluctant to gamble with these limited assets. As a consequence, some operations may not be undertaken or even considered. Additionally, an aircraft carrier requires a support flotilla for protection, which places more forces at risk.

The Navy suffers a relatively large “tooth-to-tail” ratio—a large number of ships and personnel are required to maintain a relatively

⁴⁸ Donald Chipman, “Airpower: A New Way of Warfare (Sea Control),” *Airpower Journal*, Fall 1997, <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj97/fal97/chipman.html> (accessed 1 April 2006).

⁴⁹ Kaplan, “How We Would Fight China,” <http://www.theatlantic.com/doc/prem/200506/kaplan>.

small number of deployable strike aircraft. As a result, its costs are magnified. Aircraft carriers may not be a cost effective method of delivering weapons. A Nimitz-class carrier costs \$3.8 billion. Six escort ships and associated replenishment ships cost an additional \$6 billion. Over the life of an aircraft carrier, the operational and support costs total \$29.6 billion. For every one carrier forward deployed, the Navy keeps two in the rear, one in reserve and one in maintenance overhaul. Thus, the total cost of deploying a nominal 90-plane air wing at sea totals over \$133 billion.⁵⁰ Extended operations at sea complicate planning, as each cruise needs to be closely coordinated with repair and maintenance facilities years in advance.

Implications for Strategy

Sporadic carrier operations are not sufficient to provide adequate presence. The on-station times of naval task forces are driven by the need to replenish and resupply vessels.⁵¹ Land-based airpower can supplement naval efforts to dissuade China from taking hostile action, and then coerce China if deterrence fails.

Victory in a war with China will be neither easy nor quick. Although Chinese strategy relies on the concept of rapid, decisive operations, success for the United States depends primarily on long-term deterrence. If conflict occurs, US contingency plans should focus on quick intervention in order to frustrate the Chinese assumption of swift victory. US forces must be prepared to wage a long war to overcome dogged Chinese determination to regain disputed territories, expand its power, and secure natural resources. Corbett recognized unaided, naval pressure can only work by a process of exhaustion.⁵² Capitalizing on the comparative advantages of land-based airpower may help exert more

⁵⁰ David Isenberg, "The Illusion of Power: Aircraft Carriers and U.S. Military Strategy," *Policy Analysis*, Number 134, 1990, <http://www.cato.org/pubs/pas/pa134.html>.

⁵¹ Hallion, "Air Warfare and Maritime Operations," <https://www.airforcehistory.hq.af.mil/EARS/Hallionpapers/airwarfaremaritimejune96.htm>.

⁵² Corbett, *Some Principles of Maritime Strategy*, 15.

influence and pressure on the Chinese leadership to end the conflict sooner. Land-based airpower can target Chinese sea lines of communication and hence, their economic lifeline to the Middle East.

The Chinese embrace of Mahan makes them vulnerable to a strategy that counters their naval power with land-based aircraft and naval power. Land-based airpower potentially provides the United States with a decisive asymmetric advantage. Given its unique qualities, land-based airpower can contribute to the maritime fight in ways carrier aviation cannot. General Paul Hester, Commander of the Pacific Air Forces, observed, “The capability for airmen to rapidly respond anywhere in the Pacific to sink naval vessels in all weather, day or night, is crucial for the Pacific Command.”⁵³ Unfortunately, General Hester’s comments reflect a desired rather than an existing capability. Air Force maritime capabilities have atrophied since Army Air Force aircraft proved a decisive maritime interdiction force in the Pacific theater during World War II. The following chapter provides a historical case study for analyzing land-based airpower’s effectiveness in sinking ships and controlling the littorals.

⁵³ Pacific Air Force Public Affairs, “RESULTANT FURY 05: What Senior Leaders are Saying,” <http://www2.hickam.af.mil/PACAF/news/rf.htm> (accessed 26 March 2006).

CHAPTER 3

LEARNING FROM THE PACIFIC THEATER IN WWII

Those air units which had anti-shipping attacks as their prime mission and employed the required specialized techniques, equipment and training achieved against ships the best results for the effort expended.

— United States Strategic Bombing Survey

The American experience fighting Japan during World War II provides lessons for constructing a strategy to counter China's "String of Pearls."¹ Historical parallels are not exact, but there are some striking similarities. Japan was a growing Asiatic power that had similar resource aspirations as China does today. Japan aggressively sought to secure the raw materials necessary to fuel its economy. As an island nation that lacked natural resources, Japan relied on foreign sources for most essential strategic resources and was heavily dependent on sea lines of communication. At the start of WWII, Japan imported 82 percent of its oil via routes that transited the southwest Pacific.² Despite the obvious geographic difference, China is in the same boat as Japan when it comes to a dependence on imported energy and other strategic resources, as eighty percent of its oil imports pass through the Strait of Malacca.³ China is a continental power, but much of its people and industry are concentrated along the coast.⁴ Inland infrastructure is poor, so China relies primarily on ships to connect to global markets. China's attempts to decrease its dependence on shipping have mostly

¹ This chapter is based on "Sinking Ships," an article I wrote for the July 2006 edition of *Air Force Magazine*.

² United States Strategic Bombing Survey, Transportation Division, *The War Against Japanese Transportation*, vol. 54 (Washington, DC: GPO, 1947), 13.

³ Juli MacDonald, Amy Donahue, and Bethany Danyluk, *Energy Futures in Asia*, Booz Allen Hamilton report sponsored by the Director of Net Assessment, November 2004, ii.

⁴ Don Hinrichsen, "The Coastal Population Explosion," *The Next 25 Years: Global Issues*, http://oceanservice.noaa.gov/websites/retiredsites/natdia_pdf/3hinrichsen.pdf (accessed 8 January 2006). Close to 60 percent of China's 1.2 billion people live in 12 coastal provinces, along the Yangtze River valley, and in two coastal municipalities.

failed, and it remains particularly vulnerable to a strategy that capitalizes on maritime chokepoints.

In WWII, US strategy in the Pacific targeted Japanese maritime assets, with an emphasis on merchant shipping, to exploit Japan's dependence on sea lines of communication (see Figure 4). The United States sought to destroy Japan's maritime capabilities in order to strangle its war industries and economy. Transportation was a center of gravity; Japan's inability to protect shipping was a critical vulnerability. At the end of the war, the US Strategic Bombing Survey (USSBS), a team of civilian analysts and military officers commissioned by President Roosevelt to investigate the effects of bombing, remarked, "The war against shipping was perhaps the most decisive single factor in the collapse of the Japanese economy and the logistic support of Japanese military and naval power."⁵

Figure 4. Photograph of Japanese Shipping Under Attack



Source: Air Force Historical Research Agency, Maxwell AFB, AL.

⁵ USSBS, *War Against Transportation*, 6.

The United States employed air and sea power to paralyze the Japanese war machine. Threatening the very life of the nation, the economic repercussions from these attacks were devastating. Imports of 16 major commodities fell from 20 million metric tons in 1941 to 10 million in 1944 and 2.7 million in 1945.⁶ The campaign so disrupted Japan's ability to import raw materials that leading Japanese industrialists informed military leaders that the war could not continue. In a report to the cabinet, Japan's mobilization bureau predicted Japan would rapidly lose its ability to resist if oil tanker losses continued. This advice was prophetic; oil and aviation fuel was in such short supply by 1945 that American B-29s flew virtually unopposed in the skies over Japan. The shortages were so great that the Japanese did not even have enough steel, concrete, and other construction material to build adequate air-raid shelters. The government directed families to make do with "some kind of an excavation covered with bamboo and a little dirt."⁷ Japan simply did not have the resources to continue the fight.

The strangulation strategy was on the verge of choking Japan into submission when the atomic bombs delivered the coup de grâce. The USSBS concluded, "Based on a detailed investigation of all the facts, and supported by the testimony of the surviving Japanese leaders involved, it is the Survey's opinion that certainly prior to 31 December 1945, and in all probability prior to 1 November 1945, Japan would have surrendered even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion had been planned or contemplated."⁸

A close examination of operations in the Pacific yields critical insights on how military power can best be employed, if necessary, to counter China's "String of Pearls." Land-based airpower dominated the

⁶ USSBS, *War Against Transportation*, 4.

⁷ United States Strategic Bombing Survey, *Summary Report: Pacific War* (Washington, DC: GPO, 1946), available at <http://www.anesi.com/ussbs01.htm> (accessed 26 April 2006).

⁸ USSBS, *Summary Report: Pacific War*, <http://www.anesi.com/ussbs01.htm>.

littorals and was a decisive element in Allied strategy to secure, exploit, and protect maritime lines of communications.

Land-based airpower was more effective at maritime interdiction than carrier-based aircraft.⁹

Conventional wisdom holds that carrier-based aviation contributed more to the maritime interdiction effort in the Pacific theater than land-based aircraft. Carrier aircraft were responsible for sinking the greatest proportion of Japan's combat fleet, including five battleships and ten carriers.¹⁰ But, statistics show land-based airpower was more effective than carrier-based aviation in attacking Japanese merchant shipping. Land-based aircraft through direct attack and as a result of mine-laying operations sunk more merchant ships and sent a greater tonnage to the bottom than carrier-based aviation. Land-based aircraft accounted for approximately 23.8 percent of the total tonnage versus 16.3 percent for carrier-based aviation.¹¹

A comparison of total tonnage sunk also underestimates the contribution of land-based aircraft to the maritime fight. Land-based aircraft destroyed a large number of barges and vessels that are not included in statistical tallies. The 23.8 percent figure in the preceding paragraph, for example, does not include ships less than 500-tons gross weight (see Figure 5). Land-based aircraft often faced the challenge of

⁹ Land-based airpower is defined as Army Air Forces, Navy, and Marine aircraft unless otherwise noted.

¹⁰ Nathan Miller, *The Naval Air War 1939-1945* (Annapolis, MD: Nautical and Aviation Publishing Company of America, 1980), 210.

¹¹ United States Strategic Bombing Survey, *Summary Report: Pacific War* (Washington, DC: GPO, 1946), available at <http://www.anesi.com/ussbs01.htm> (accessed 26 April 2006). According to the USSBS *Summary Report*, "Fifty-four and seven-tenths percent of this total was attributable to submarines, 16.3 percent to carrier-based planes, 10.2 percent to Army land-based planes and 4.3 percent to Navy and Marine land-based planes, 9.3 percent to mines (largely dropped by B-29s), less than 1 percent to surface gunfire, and the balance of 4 percent to marine accidents." (10.2% + 4.3% + 9.3% = 23.8%) (USSBS, p. 73) See also Richard Hallion, "Air Warfare and Maritime Operations" (Air Force Historical Studies Office, June 1996), <https://www.airforcehistory.hq.af.mil/EARS/Hallionpapers/airwarfaremaritimejune96.htm>. Hallion states, "A grand total of 24,876 mines were laid in Japanese waters by Allied aircraft, ships, and submarines. Of this total, aircraft accounted for 21,389 mines, representing 86 percent of all mines deployed against Japan."

operating against dispersed and smaller targets as the enemy took greater precautions to mitigate damage. Additionally, statistics that only provide details on the type of weapons system that destroyed a ship fails to consider the effects of cooperative efforts. Land-based aircraft provided targeting information to submarines, which enabled them to sink many more ships.

Figure 5. Photograph of a Sunk Japanese Ship Not Included In Statistical Tallies



Source: Air Force Historical Research Agency, Maxwell AFB, AL.

Submarines are credited with sinking the most enemy ships, but their effectiveness depended largely on a cooperative effort with land-based airpower. Submarines were never available in sufficient numbers to enforce a blockade on their own and consequently, depended on land-based airpower to supplement their search patterns.¹² The USSBS stated, “The development of effective cooperation between the submarines and the air arm permitted the results of continual air patrol and search to be translated into effective submarine attack, where such attack was the most appropriate method to employ. It must be understood, however, that particularly as the sea lanes contracted and

¹² USSBS, *War Against Transportation*, 6.

more effective escort was supplied, the task of the submarine became hazardous and losses were considerable.”¹³

Unlike the submarine experience, land-based airpower effectiveness improved as shipping lanes converged, especially when ships were funneled into natural chokepoints. Japanese air defenses for convoys were weaker relative to their protection against submarines. Flotillas only presented bombers with more targets. When bombers found concentrations of ships, their attacks were lethal. In the Battle of the Bismarck Sea, more than one hundred Allied planes swarmed and destroyed an entire Japanese convoy. Japan lost over 3,500 troops; only about 800 of the 6,900 soldiers who were being ferried to reinforce critical areas made it to their destination.¹⁴ The Battle of the Bismarck Sea marked the turning point in the New Guinea campaign. “Japan’s defeat there was unbelievable,” remarked Tameichi Hara, a Japanese destroyer captain. “Never was there such a debacle.”¹⁵

The Battle of the Bismarck Sea foreshadowed the terrible toll land-based bombers would exert throughout the remainder of the war. Shortly afterwards, the Japanese high command announced that every soldier would be taught to swim (see Figure 6). Aerial attacks exacted a dreadful price on Japanese ships, even as they hugged the coasts in desperate attempts to escape the deadly effects of allied airpower and submarines.

¹³ USSBS, *War Against Transportation*, 7.

¹⁴ Donald Chipman, “Airpower: A New Way of Warfare (Sea Control),” *Airpower Journal*, Fall 1997, <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj97/fal97/chipman.html> (accessed 4 April 2006).

¹⁵ Gary Null, *Weapon of Denial: Air Power and the Battle for New Guinea* (Washington, DC: Air Force History and Museums Program, 1995), 30, available at https://www.airforcehistory.hq.af.mil/Publications/fulltext/weapon_of_denial.pdf (accessed 8 April 2006).

Figure 6. Photograph of a Capsized Japanese Ship



Source: Air Force Historical Research Agency, Maxwell AFB, AL.

Carrier-based air attacks also proved devastating against large concentrations of merchant ships, but these strikes were sporadic and not part of a continuing program to close enemy shipping lanes. The USSBS noted, “In general, the responsibility of carrier air was presumed to lie elsewhere and to relate more directly to naval operations.”¹⁶ A post-war analysis of the Navy’s WWII experience revealed carrier airplanes averaged only 1 flight every 2 days while in a combat area.¹⁷ Of those sorties, 25-40 percent were normally assigned to the defense of the naval task force.¹⁸ The burden of defending carriers almost outstripped the offensive air power provided by carriers. In contrast, land-based aircraft undertook an extensive and sustained armed search of shipping lanes.

When tasked, land-based units generated sortie rates and firepower that dwarfed the potential of carrier-based squadrons. For

¹⁶ USSBS, *War Against Transportation*, 7.

¹⁷ *Reference Data on the Aircraft Carrier: Its Role, Capabilities, and Limitations* (8 August 1949, revised 26 September 1949), Historical Research Agency document 168.15-25, 11.

¹⁸ *Reference Data on the Aircraft Carrier*, 23.

example, 167 B-29s operating from the Marianas delivered 2 ½ times the bomb load that 1,091 carrier aircraft did in the same 3 days.¹⁹

Additionally, about half the number of support personnel were required. Land-based air was a more efficient method of delivering bombs, as long as the target was within the combat radius of a bomber.

The biggest disadvantage of land-based airpower was the tyranny of distance in the Pacific. Land-based airpower dominated the littorals, but the limited combat range of bombers like the B-24 and B-25 did not permit extended loiter and search time over blue water. As a consequence, bombers sunk relatively few large vessels located more than 600 miles from their airfields.²⁰ The effectiveness of land-based aircraft against shipping was very much linked to success in the island hopping campaign. Gaining access to new airfields was required to expand the operating areas. Establishing maritime supremacy across the entire South China Sea would not have been possible without forward-operating bases.

Army Air Forces units, particularly those with maritime interdiction as a primary mission, were more effective at sinking merchant ships than their Navy & Marine counterparts.

The results of Army Air Forces (AAF) attacks compare favorably to the efforts of the other services. The Fifth, Seventh, Eleventh, Thirteenth, and Fourteenth Air Forces flew 475,783 sorties, of which only 7,250 were fraggged against merchant shipping.²¹ These airmen devoted only 1.5 percent of their sorties to attacks on merchant ships, but dropped 9,118 tons of bombs and sank a total of 265,360 tons.²² In comparison, Navy and Marine aircraft flew 25,657 of 258,109 sorties against merchant ships (i.e., 9.9 percent of their total effort), dropped 7,146 tons of bombs against merchant ships, and sank a total of

¹⁹ *Reference Data on the Aircraft Carrier*, 54.

²⁰ USSBS, *War Against Transportation*, 8.

²¹ USSBS, *War Against Transportation*, 123.

²² USSBS, *War Against Transportation*, 119.

102,702 tons. In short, the AAF devoted less effort, dropped more bombs, and sank a greater number of ships.

These figures do not even include the Twentieth Air Force's mine-laying contribution. The Twentieth flew 28,826 sorties and delivered 9,875 tons of mines, which sank 287 enemy ships and damaged 323 others. After April 1945, mines dropped by B-29s in Japanese harbors and inland waterways accounted for 50 percent of all ships sunk or damaged.

Aerial mining crippled Japanese merchant shipping, denied damaged ships access to repair facilities, closed strategic waterways, and threw the administration of Japanese shipping into hopeless confusion.²³

Despite its ultimate success, the AAF was woefully unprepared to conduct maritime interdiction missions and proved almost totally inept against Japanese shipping in the first nine months of the war.²⁴ A focused effort to improve training and tactics was required to build an effective maritime interdiction force. It took a visionary leader to improve the AAF's tepid maritime performance. General George C. Kenney, General Douglas MacArthur's airman in the Southwest Pacific, embraced the maritime interdiction mission, improved training, and encouraged tactical and technical innovations such as skip bombing, low altitude attacks (see Figure 7), and forward-firing machine guns.

²³ USSBS, *War Against Transportation*, 8.

²⁴ Matthew Rodman, *A War of Their Own: Bombers Over the Southwest Pacific* (Maxwell AFB, AL: Air University Press, 2005), 23.

Figure 7. Photograph of a Bomber Attacking at Mast Height



Source: Air Force Historical Research Agency, Maxwell AFB, AL.

General Kenney thought his land-based aircraft were a better choice than carrier aviation to support maritime operations, particularly amphibious landings, because carrier-based aircraft had limited fuel, range, loiter time, and payload. Additionally, aircraft carriers had to periodically discontinue flying operations in order to refuel, rearm, and replace lost or damaged aircraft. Kenney told MacArthur, “I consider it unwise to rely on carrier units completely . . . Carrier-based aircraft do not have staying power and therefore do not have the dependability of land-based aircraft.”²⁵ Most importantly, he warned that aircraft carriers could be sunk.

Aircraft carriers proved exceptionally vulnerable.

Operations in WWII highlighted the vulnerability of aircraft carriers. Twenty-six large aircraft carriers were sunk during the war; seventeen carriers (i.e., 65 percent) were lost as a direct result of air

²⁵ Thomas Griffith, Jr., *MacArthur's Airman: General George C. Kenney and the War in the Southwest Pacific* (Lawrence, KS: University Press of Kansas, 1998), 157-8.

attack.²⁶ Since no ship is unsinkable, the capacity to absorb punishment is an important characteristic. The Bureau of Ships applied engineering principles to estimate the number of hits required to sink each naval vessel and concluded aircraft carriers were the most vulnerable class of combat ship.²⁷ Aircraft carriers were not able to absorb the same punishment as other ships and continue to operate. In an article in *Science Illustrated* shortly after the war, Admiral Dan Galley, the Assistant Chief of the Naval Operations, described the inherent design weakness of an aircraft carrier. He cautioned, "A big carrier is a tank farm, an ammunition dump, and an airfield all rolled up in one tight package. This is a highly inflammable combination."²⁸ The Japanese recognized carrier vulnerability and their importance to US strategy. Carriers represented a huge US investment in terms of money, materials, skilled manpower, and time. Consequently, the Japanese Navy made the destruction of aircraft carriers their top priority. The American carriers that suffered battle damage were out of action for 30 percent of the available days in the last year of the war.²⁹

By its very nature, an aircraft carrier could not avoid exposure to hostile attack when performing its mission. The limited range of its fighter aircraft meant aircraft carriers had to close with the enemy to prosecute an attack. Exposure became more intense as the carrier moved into position to launch its aircraft and await their return. Japanese fighter and reconnaissance planes could predict the location of the Fast Carrier Task Forces and only had to search a limited area of the sea to find the US carriers.

The Guadalcanal landing, the Okinawa campaign, and the Battle of Leyte Gulf are three battles that exemplify the vulnerability of aircraft

²⁶ *A Study of Major Combatant Ships Sunk as a Direct Result of Air Attack: World War II* (26 September 1949), Historical Research Agency document 168.15-25, 3.

²⁷ *Reference Data on the Aircraft Carrier*, 13.

²⁸ Admiral Dan Galley, "Don't Damn the Carrier," *Science Illustrated*, February 1949, 23.

²⁹ *Reference Data on the Aircraft Carrier*, 18.

carriers. According to the declassified *Secret Information Bulletin No. 2*, carrier forces were withdrawn during the Guadalcanal landing (August 8, 1942) because of decreased carrier fighter strength, low fuel, and the large number of enemy torpedo and bombing planes in the vicinity.³⁰ During the Okinawa Campaign (April – May 1945), Navy shipping was required to operate within range of Japanese land-based aircraft. At that time, the Navy had 15 carriers with 919 aircraft onboard. Yet, they were unable to protect the fleet. The losses were severe – 28 ships sunk and 225 damaged due to attack from the air.³¹ During the Battle of Leyte Gulf (1944), Rear Admiral Jesse Oldendorf cabled an urgent plea for air support: “NAVAL FORCES COVERING LEYTE REPORT 2 HEAVY AIR ATTACKS TODAY. 1 DESTROYER HAS BEEN SUNK BY TORPEDO PLANES. 3 ADDITIONAL SEVERELY DAMAGED. IF ADEQUATE FIGHTER COVER NOT MAINTAINED OVER COMBATANT SHIPS THEIR DESTRUCTION IS INEVITABLE. CAN YOU PROVIDE NECESSARY PROTECTION?”

A more concentrated effort against enemy shipping, especially oil tankers, would have accelerated Japan’s collapse, but inter-service rivalry hindered unity of effort.

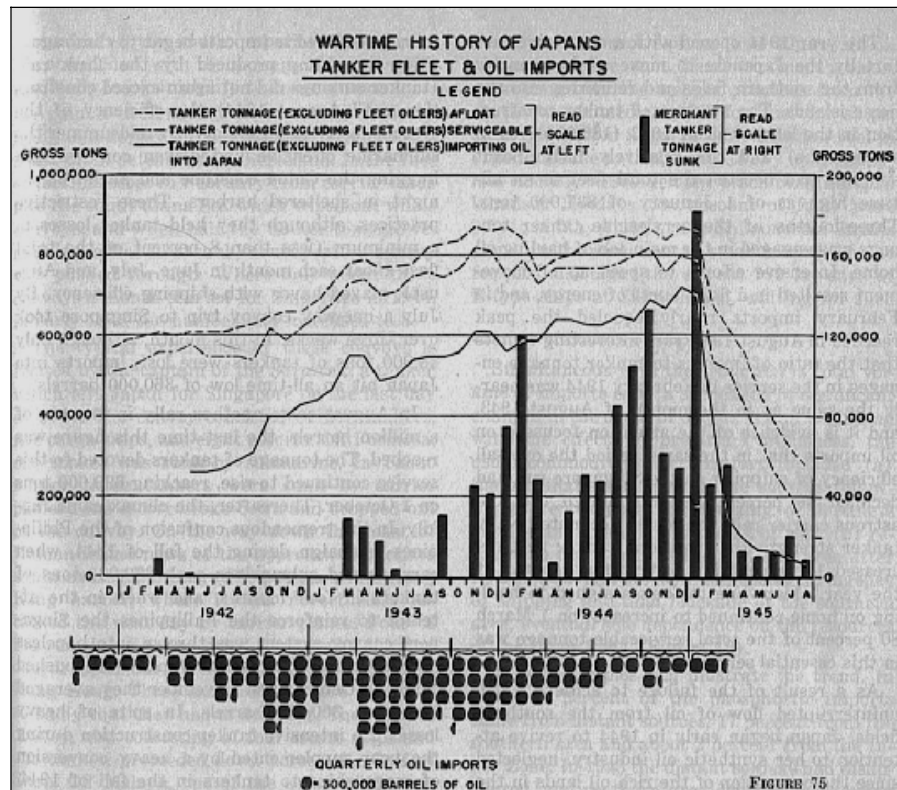
US strategy did not seek out and destroy enemy oil tankers until 1944. The effect was immediate. Japanese convoys had to hug the Chinese coastline and anchor at night in sheltered harbors. Still, Japan lost 8 percent of their tanker fleet each month in June, July, and August of 1944. Shipping efficiency plummeted as transit time increased. In 1945, US strategy targeting tankers produced a desperate shortage of fuel in Japan. By April 1945, oil shipments essentially ceased. Figure 8 provides a graphic representation of the destruction of the Japanese tanker fleet. Based on these figures, Japan’s collapse would have been hastened if more aircraft were assigned maritime interdiction duties. If

³⁰ *Study of Major Combatant Ships Sunk as a Direct Result of Air Attack*, 8.

³¹ *Reference Data on the Aircraft Carrier*, 27.

begun earlier with a greater weight, the anti-shipping campaign would have produced a condition of crisis in Japan sooner than actually occurred.³²

Figure 8. History of Japan's Tanker Fleet & Oil Imports



Source: United States Strategic Bombing Survey, Transportation Division, *The War Against Japanese Transportation*, vol. 54 (Washington, DC: GPO, 1947), 103.

A policy that devoted more resources to the anti-shipping mission would have been enormously profitable, but inter-service rivalries prevented a more robust concentration of airpower to achieve maritime objectives. The Army and Navy bickered over who should control bombers engaged in duties over the sea.

Neither service, though, was interested in a more robust use of bombers to attack Japanese shipping and consequently, did not take full advantage of land-based airpower's maritime interdiction capabilities. Admiral Ernest King, the Chief of Naval Operations, primarily wanted to

³² USSBS, *War Against Transportation*, 1.

use bombers to supplement fleet defense, whereas General Henry “Hap” Arnold, the Chief of Army Air Forces, was less than enthusiastic about assuming maritime duties. Arnold did not want to divert resources away from the strategic bombing mission and the Air Staff consistently counseled against diverting sorties from strategic bombing. Major General Lawrence Kuter, Assistant Chief of Air Staff for Plans, gave a typical response when asked to adjust Twentieth AF sorties to include more mine-dropping: “The effort available to the Twentieth Air Force should not be diverted from its primary mission until that mission is accomplished.”³³ Admiral King advocated a plan to assign control of the bombers to Navy commanders within specified sea frontiers. This measure would have divided operational control and ran counter to AAF doctrine. Admiral King was suspicious of any plan that would bolster Air Force calls for independence and potentially steal the Navy’s air component. Conversely, Arnold harbored suspicions that King’s proposal, if approved, might be the “forerunner of the Navy assuming the Army’s primary responsibilities and functions for operation and control of a land-based air force.”³⁴

In 1943, the Army and Navy negotiated the Arnold-McNarney-McCain agreement, which radically divided responsibility for the employment of long-range aircraft.³⁵ In return for unquestioned control of all forces employed in protection of shipping, reconnaissance, and offshore patrol, the Navy relinquished control of long-range striking forces operating from shore-bases. The Army transferred its anti-submarine B-24s to the Navy. The agreement was designed to prevent each service from encroaching on the other’s historic responsibilities.

³³ Major General Lawrence Kuter, Assistant Chief of Air Staff for Plans, Memorandum response to Mine Operational Research, HRA 118.04V-2, 27 August 1943.

³⁴ Warrant Trest, *Air Force Roles and Missions: A History* (Washington, DC: Air Force History and Museums Program, 1988), 82.

³⁵ Assistant Chief of the Air Staff, Intelligence, Historical Division, *The Anti-submarine Command*, US Air Force Historical Study No. 107, April 1945, 78, available at http://afhra.maxwell.af.mil/wwwroot/numbered_studies/467691.pdf (accessed 15 March 2006).

General George C. Marshall, the Army Chief of Staff, expressed dismay over the inability of the services to work together and disapproved of policies that artificially divided the maritime medium. He thought the Army and Navy procedures were “neither economical nor highly efficient and would inevitably meet with public condemnation were all the facts known.”³⁶

Fortunately, the enmity between Japanese air arms surpassed even American interservice rivalry. Japan lost the war partly because the Imperial Japanese Army Air Force did not help their navy counterparts control shipping lanes. Capt Minoru Genda, a mastermind of the Pearl Harbor attack and commander of an elite squadron of ace pilots, commented, “The Army flyers didn’t like to fly over the ocean (and) acted as though they didn’t realize the importance of the control of the seas.”³⁷

The Lessons of WWII Still Apply Today

The effectiveness of land-based airpower in the war against shipping was not limited to the Pacific theater. Field Marshal Erwin Rommel warned the German High Command, “By using his strategic air force, the enemy can strangle one’s supplies, especially if they have to be carried across the sea.”³⁸ At the end of the war, the British Bombing Survey identified “attacks on communication” as a primary factor in the Allied victory by inducing German and Japanese industrial and economic collapse.³⁹ Furthermore, the report concluded, “The fact that so simple a conclusion can be derived from the war histories of countries as different in the economic structure and geography as Japan, Germany, Belgium, Italy, and France suggests that it may have some general validity.”⁴⁰ Despite the passage of 60 years since World War II, the British Bombing

³⁶ Trest, *Air Force Roles and Mission*, 82.

³⁷ Alvin Coox, “The Rise and Fall of the Imperial Japanese Air Force,” *Airpower*, ed. Mark Wells (Imprint Publications: Chicago, 2000), 81.

³⁸ Air Force Doctrine Document (AFDD) 2-1.4, *Countersea*, 4 June 1999, 14.

³⁹ British Bombing Survey Unit, *The Strategic Air War Against Germany: 1939-1945*, 1945, Reprint, London, England: Frank Cass, 1998, 167.

⁴⁰ British Bombing Survey Unit, *The Strategic Air War Against Germany*, 167.

Survey's assertion about the value of targeting lines of communication and sea-lines still remains accurate.

The Falklands War provides a more recent example of the value of land-based airpower in the maritime domain. In their brief war with Argentina over the Falkland Islands, Britain almost suffered a fate similar to their initial WWII experience in the Pacific. Argentina only had four operational Etendard fighters that were capable of employing the Exocet anti-ship missile, yet British defenses were unable to stop these aircraft from sinking the destroyer HMS Sheffield and one supply ship. Other Argentinean aircraft carrying less technically advanced weapons also found their mark. Seventy-five percent of the British task force was damaged or sunk. The war might have ended in an Argentine victory if one of the Exocets had hit an aircraft carrier or if Argentine bombs worked correctly and exploded on impact. Fourteen Argentine bombs failed to detonate because armament troops failed to fuse the weapons correctly and/or pilots dropped them at altitudes too low to arm.

Despite Argentina's difficulties with fusing and weapons delivery, the value of land-based airpower performing *countersea* missions has proved enduring. Land-based airpower can wage an independent maritime campaign or act as a force multiplier, extending the reach and increasing the flexibility of naval surface, subsurface, and aviation assets. Simply stated, land-based should be a vital part of US strategy to deter threats that challenge American influence over sea lines of communication. Land-based airpower can help cut China's "String of Pearls." Subsequent chapters identify the requirements to make land-based aviation an integral part of the air-to-sea mission in order to counter the Chinese naval build-up and control the chokepoints of the Southwest Pacific. This discussion includes recommendations on how to facilitate the development of a joint maritime force, secure access to forward-operating bases, and develop strategic partnerships.

CHAPTER 4

A JOINT MARITIME FIGHT

I consider it unwise to rely on carrier units completely.

— General George C. Kenney

The US Navy does not have to shoulder the responsibility to counter China's "String of Pearls" strategy alone. The Air Force has much to contribute in the fight to control the littorals. Simply stated, land-based airpower is effective at sinking ships and controlling the littorals. It should be a vital part of a US strategy to deter threats that challenge American influence over sea lines of communication. In order to accomplish this goal, the Air Force needs to embrace, fund, and train for maritime interdiction. Chapter 3 highlighted the American experience in World War II, in which land-based airpower proved an effective tool in the maritime fight against a rising Asiatic power. This chapter identifies the operational requirements to make land-based aviation an integral part of the air-to-water mission. Specifically, the US armed forces should take four steps to develop joint maritime capabilities: (1) designate Maritime Interdiction as a Primary Mission of the US Air Force, (2) develop a Joint Maritime Weapon, (3) train for Joint Maritime Operations, and (4) create a web of austere, forward-operating bases in the Southwest Pacific.

Designating Maritime Interdiction as a Primary Mission of the US Air Force

Historically, the partnership between sea and airpower in the maritime domain has been the most productive means of establishing and exploiting sea supremacy. Virtually every significant naval action of this century occurred within reach of and involved land-based aviation

forces.¹ In World War II, land-based airpower proved more effective at maritime interdiction than carrier-based aircraft. A sole reliance on naval assets for maritime interdiction offers a significantly less effective strategy than one that leverages land-based airpower's added lethality.

Historical experience demonstrates that maritime supremacy requires a joint-service approach to naval warfare.² However, Department of Defense directives, based on WWII and Cold War agreements, do not reflect that lesson. DOD Directive 5100.1, "Functions of the Armed Forces and the Joint Chiefs of Staff," artificially limits Air Force contributions in the maritime domain.³ It relegates the Air Force to an auxiliary role, assigning it the following collateral missions:

- Surface sea surveillance and anti-surface ship warfare through air and space operations,
- Antisubmarine warfare and anti-air warfare operations to protect sea lines of communications,
- Aerial mine-laying operations, and
- Air-to-air refueling in support of naval campaigns.⁴

By regulation, services are not permitted to establish and justify force requirements based on collateral missions.⁵ In other words, the US Air

¹ Richard Hallion, "Air Warfare and Maritime Operations" (Air Force Historical Studies Office, June 1996), <https://www.airforcehistory.hq.af.mil/EARS/Hallionpapers/airwarfaremaritimejune96.htm> (accessed 8 January 2006).

² Richard Hallion, "Air Warfare and Maritime Operations," <https://www.airforcehistory.hq.af.mil/EARS/Hallionpapers/airwarfaremaritimejune96.htm>.

³ As noted in Chapter 3, the Army and Navy negotiated the Arnold-McNarney-McCain agreement during World War II, which radically divided responsibility for the employment of long-range aircraft. The agreement was designed to prevent each service from encroaching on the other's historic responsibilities. After the war, the services negotiated the Key West Agreement, a colloquial name for a policy paper entitled "Functions of the Armed Forces and the Joint Chiefs of Staff" drafted by James V. Forrestal, the first United States Secretary of Defense. The service chiefs agreed to the basic outline at a meeting in Key West, Florida on March 11, 1948. Defense Department officials and the service chiefs revised the document subsequently, but the paper provided the basic framework for the division of roles and missions of the US military today. Policy, not capability largely determined how each service employed their air assets.

⁴ Department of Defense (DOD) Directive 5100.1, *Functions of the Armed Forces and the Joint Chiefs of Staff*, 1 August 2002, available at <http://www.dtic.mil/whs/directives/corres/html2/d51001x.htm> (accessed 3 March 2006).

Force cannot compete to perform a maritime function, nor can it compete for associated budget allocations despite the potential to bring added firepower and lethality to the naval campaign.

The global reach of land-based airpower is without geographic limit. In support of Operation Allied Force, B-2s based at Whiteman AFB, Missouri flew forty-five 30-hour missions; B-2s alone dropped 1.3 million pounds of bombs. Although these sorties constituted only 1 percent of the total missions, they accounted for 11 percent of total tonnage. A RAND study concluded the Air Force “validated the ‘global reach, global power’ concept . . . [and] showed the value of combat aircraft that are not dependent on bases near the theater of operations.”⁶ Instead of allowing maritime interdiction to be the de facto exclusive purview of the US Navy, a better approach to achieve naval supremacy involves leveraging the entire spectrum of aviation assets and capabilities within the US arsenal.

Carrier-based aviation seamlessly integrates with Air Force aircraft to perform strategic bombing missions, close air support, and other air-to-ground missions. DOD Directive 5100.1 includes provisions for the Navy to establish and operate “land-based naval air components . . . and to conduct such land, air, and space operations as may be essential to the prosecution of a naval campaign.”⁷ Similarly, DOD Directive 5100.1 tasks the Marine Corps with maintaining Fleet Marine Forces of combined arms to prosecute “land operations [together with supporting air components] as may be essential to the prosecution of a naval campaign.”⁸ On paper, close air support in support of land operations

⁵ Department of Defense (DOD) Directive 5100.1, available at <http://www.dtic.mil/whs/directives/corres/html2/d51001x.htm>.

⁶ Benjamin Lambeth, *NATO's Air War for Kosovo: A Strategic and Operational Assessment* (Santa Monica, CA: RAND, 2002), 93, available at http://www.rand.org/pubs/monograph_reports/MR1365 (accessed 8 January 2006).

⁷ Department of Defense (DOD) Directive 5100.1, available at <http://www.dtic.mil/whs/directives/corres/html2/d51001x.htm>.

⁸ Department of Defense (DOD) Directive 5100.1, available at <http://www.dtic.mil/whs/directives/corres/html2/d51001x.htm>.

and interdiction missions that attack enemy land, air, and space power are explicitly assigned as collateral missions.⁹ In practice, the Navy and Marine Corps claim those missions serve as primary justification for their force requirements.

Sea Power 21, the Navy's vision for the 21st century, prominently features a doctrine based on deep-strike capabilities. *Sea Power 21* "continues the evolution of US naval power from the blue-water, war-at-sea focus of the 'Maritime Strategy' (1986), through the littoral emphasis of '... From the Sea' (1992) and 'Forward . . . from the Sea' (1994), to a broadened strategy in which naval forces are fully integrated into global joint operations against regional and transnational dangers."¹⁰ The Navy vision defines a triad of capabilities—*Sea Strike*, *Sea Shield*, and *Sea Basing*—that expands the Navy's mission beyond its traditional maritime missions. *Sea Strike* emphasizes the Navy's ability to project precise and persistent offensive power. The Navy leadership calls this a "dramatic advancement [which enables] naval forces to project defensive power deep overland," thereby lessening the burden on land forces and increasing sea-based influence over operations ashore.¹¹ Moreover, the Navy touts its ability "to provide the Joint Force Commander with a potent mix of weapons, ranging from long-range precision strike, to covert land-attack in anti-access environments, to the swift insertion of ground forces."¹²

In the same manner, the Air Force can become fully integrated into maritime interdiction operations. *Sea Power 21* points out, "Combined sea-based and land-based striking power will produce devastating effects against enemy strategic, operational, and tactical pressure points—resulting in rapid, decisive operations and the early termination of

⁹ Department of Defense (DOD) Directive 5100.1, available at <http://www.dtic.mil/whs/directives/corres/html2/d51001x.htm>.

¹⁰ Admiral Vern Clark, "Sea Power 21: Projecting Decisive Joint Capabilities," *Proceedings*, October 2002, available at <http://www.chinfo.navy.mil/navpalib/cno/proceedings.html> (accessed 26 January 2006).

¹¹ Clark, "Sea Power 21," available at <http://www.chinfo.navy.mil/navpalib/cno/proceedings.html>.

¹² Clark, "Sea Power 21," available at <http://www.chinfo.navy.mil/navpalib/cno/proceedings.html>.

conflict,” whether the objective is on land or sea.¹³ The Air Force needs to prepare and budget to contribute to the maritime fight. *Countersea* will remain an underdeveloped Air Force mission, though, until the Department of Defense take steps to elevate it from a collateral USAF mission.

In 1982, the USAF Chief of Staff, General Charles A. Gabriel signed a memorandum of agreement for joint maritime operations with the Chief of Naval Operations, Admiral James D. Watkins. Gabriel wanted to make maritime operations a major US Air Force mission. He gained a greater appreciation for the value of land-based airpower in maritime operations as a result of the Falklands War. Gabriel remarked, "As the Falklands conflict demonstrated, air power is a critically important part of successful maritime operations. We will be putting more emphasis on such collateral roles as sea-lane protection, aerial mine-laying and ship attack." Another driving factor for Gabriel was the threat from the Soviet fleet.

The size of the Soviet fleet complicated US war plans to defend Europe. A maritime strategy that required the Navy to defend sea lines of communication while at the same time prosecuting a North Atlantic battle required Air Force participation.¹⁴ Sea control, indispensable to victory, required joint maritime operations. In 1984, the Air Force modified the B-52G for maritime patrol duties and assigned maritime operations as a primary mission for two of its squadrons—one at Andersen AFB, Guam and another squadron at Loring AFB, Maine.¹⁵ These squadrons participated in a variety of maritime exercises over the

¹³ Clark, "Sea Power 21," available at <http://www.chinfo.navy.mil/navpalib/cno/proceedings.html>.

¹⁴ Don Chipman and Donald Lay, "Sea Power and The B-52 Stratofortress," *Air Chronicles*, January 1986, <http://www.airpower.maxwell.af.mil/airchronicles/aureview/1986/jan-feb/chipman.html> (accessed 8 January 2006).

¹⁵ Donald Chipman, "Airpower: A New Way of Warfare (Sea Control)," *Airpower Journal*, Fall 1997, <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj97/fal97/chipman.html> (accessed 8 January 2006). Twelve B-52Gs were assigned to each squadron.

next several years, but were deactivated in 1989 after the Soviet Union collapsed.

With the end of the Cold War, Air Force maritime capabilities and training spiraled into neglect. A few B-52s and a small number of aircrew from 8th Air Force continued to practice maritime operations, but eventually the Air Force dropped the mission. In 2004, Major General David Deptula, the Pacific Air Forces (PACAF) director of operations, stated, "As a result of the defense draw down of the 1990s, sea control and maritime interdiction operations conducted by Air Force aircraft atrophied because of resource constraints."¹⁶

Sea control is no longer an Air Force mission, despite the intensifying maritime threat from China.¹⁷ This neglect is puzzling as the United States relies on land-based airpower to protect Taiwan against invasion. Furthermore, land-based airpower is essential to protect the conflict area's Southwest flank and exploit China's dependency on imported oil. "Maritime control is of significant importance to the commander of Pacific Command as well as our friends and allies in the Pacific," argued General Deptula. "Long-range, high-pay-load aircraft - our bomber force - have the potential for providing the commander the most responsive capability to conduct counter-sea operations and maritime interdiction."¹⁸ The Chinese are moving much of their defense capabilities deep into western China, out of naval missile range, and they are also developing an offensive strategy using advanced missile technology to strike the "supreme icon of American wealth and power, the aircraft carrier."¹⁹

¹⁶ David Faggard, "Airmen, Bombers Vital to Sinking Ships" (Pacific Air Forces Public Affairs), <http://www2.hickam.af.mil/PACAF/news/release4.htm> (accessed 8 January 2006). Promoted to in 2005, Lieutenant General Deptula currently serves as the Vice Commander of the Pacific Air Forces.

¹⁷ Chipman, "New Way of Warfare (Sea Control)," <http://www.airpower.maxwell.af.mil/airchronicles/apj/apj97/fal97/chipman.html>.

¹⁸ Michael Sirak, "USAF wants bombers to provide Pacific punch," *Jane's Defence Weekly*, 17 November 2004, available at <http://forum.keypublishing.co.uk/printthread.php?t=34737> (accessed 15 March 2006).

¹⁹ Robert Kaplan, "How We Would Fight China," *The Atlantic Monthly*, June 2005, <http://www.theatlantic.com/doc/prem/200506/kaplan> (accessed 8 January 2006).

The current division of labor between the US Navy and Air Force is no longer acceptable given the growing Chinese threat to US naval supremacy. Land-based airpower complements carrier-based aviation and improves lethality while reducing American vulnerability. The United States should eliminate artificial barriers that limit US Air Force participation in maritime operations. When Congress appointed a commission to examine the roles and missions of the armed forces in 1994, the chairman of the commission astutely framed the issue: “The question should no longer be *who does what*, but how do we ensure the right set of capabilities is identified, developed, and fielded to meet the needs of unified commanders.”²⁰

Developing a Joint Maritime Weapon

In a *Joint Forces Quarterly* article, Harvey Sapolsky, the director of the Defense and Arms Control Studies Program at the Massachusetts Institute of Technology, lists two important benefits of interservice competition.²¹ First, interservice competition serves as a healthy catalyst for innovation. Second, it helps generate vital information. “What the Navy won’t tell us about its vulnerabilities, the Army and Air Force might. . . . Are aircraft carriers easy to attack? . . . Can naval forces stationed off a coast exert significant influence in an evolving crisis? Ask the Navy; but ask the Army and Air Force as well.”²²

There are obstacles to gaining these benefits. If competition degenerates into interservice rivalry, then communication and the ability to work together suffer. As described in Chapter 3, General George Marshall expressed dismay over the Army and Navy’s inability to

²⁰ John Correll, “Surprise Package on Roles and Missions,” *Air Force Magazine*, August 1995, <http://www.afa.org/magazine/Aug1995/0895surprise.asp> (accessed 8 January 2006).

The vulnerability of aircraft carriers is discussed in detail in chapters 2 and 3.

²¹ Harvey Sapolsky, “Interservice Competition,” *Joint Forces Quarterly*, Spring 1997, http://www.dtic.mil/doctrine/jel/jfq_pubs/11_15.pdf (accessed 8 January 2006). Sapolsky includes a third benefit of competition in his article that is not necessarily applicable to this thesis. He says competition gives civilians leverage in their effort to control defense policy. In other words, interservice competition allows civilian leaders to play one service against another when particular policies are preferred.

²² Sapolsky, “Interservice Competition,” http://www.dtic.mil/doctrine/jel/jfq_pubs/11_15.pdf.

cooperate and felt interservice rivalry hurt the war effort. Rather than advocating an artificial division of tasks in the maritime medium, General Marshall thought a better solution was to work out differences in command and control philosophies. Largely, the Goldwater-Nichols Department of Defense Reorganization Act of 1986 addressed the issue of fractured command relationships. Combatant commanders now exercise command authority over all joint forces within their areas of responsibility with few exceptions. This arrangement helps reduce interservice friction and promotes unity of effort. Goldwater-Nichols helped in part to solve arguments like the ones that occurred during WWII when the Army and Navy fought over control of bombers flying maritime interdiction missions.

Paradoxically, Goldwater-Nichols put a premium on jointness, but failed to preserve and foster beneficial aspects of interservice competition. Because the armed services do not like to compete, they embraced jointness as a shield against being played off against one another. Sapolsky comments, “Joint approval means all the tradeoffs are made on the friendliest possible terms under which each service threatens retaliation if its most important needs are not considered. . . . [The services are] reluctant to provoke one another even on the promise of specific benefits such as budgetary increases or the preservation of favored assets.”²³ Hence, the Navy advocates more aircraft carriers as the solution to the rising threat from China rather than considering the use of land-based airpower, and the Air Force traditionally has been content to cede the maritime domain to the Navy because it does not involve a core USAF competency.

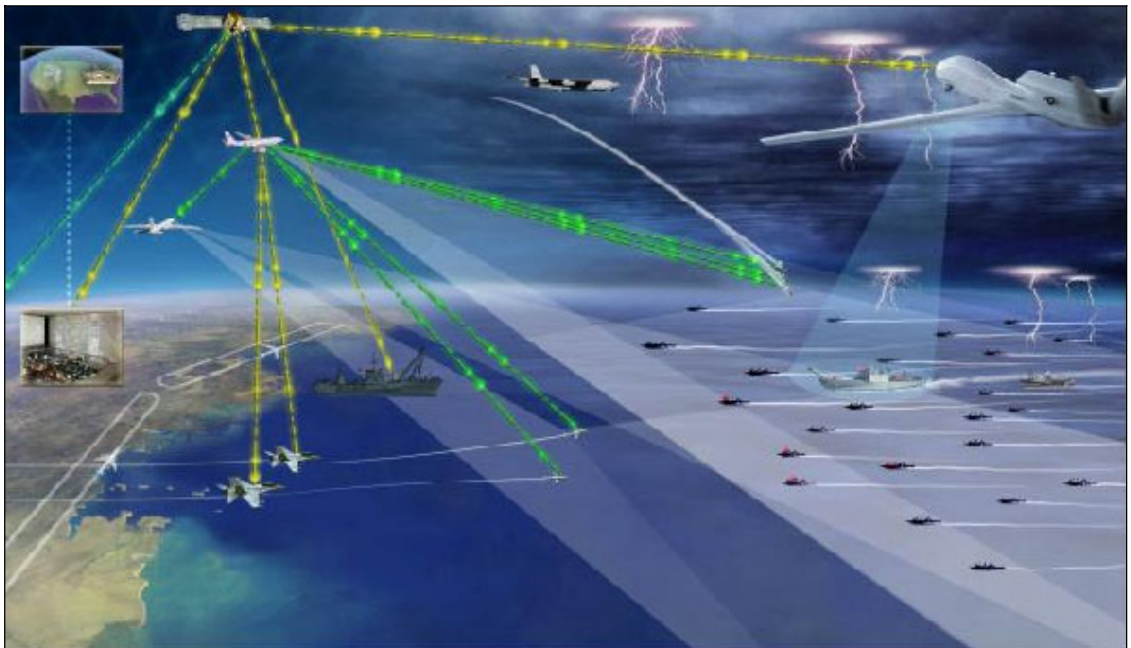
PACAF leaders, however, offer the exception. The strategic need for land-based airpower performing maritime missions in the Pacific has stimulated novel ideas on the employment of airpower to counter the

²³ Sapolsky, “Interservice Competition,” http://www.dtic.mil/doctrine/jel/jfq_pubs/11_15.pdf.

burgeoning Chinese threat. PACAF leaders, recognizing that the Navy's limited airpower resources may not be sufficient in a conflict with China over Taiwan, are embracing innovative measures in a bid to close the capabilities gap that has emerged as a result of China's military build-up.

Hoping to redefine the role of land-based airpower in the Pacific, Generals Paul Hester and David Deptula were instrumental in setting up RESULTANT FURY, a PACOM exercise conducted in November 2004. RESULTANT FURY demonstrated the lethality of airpower against shipping. The Air Force and Navy worked together to destroy multiple mobile seaborne targets, to include the Ex-USS Schenectady, a decommissioned tank landing ship. The exercise highlighted the value of a complementary, joint approach to maritime interdiction. Figure 9 illustrates the RESULTANT FURY operational concept.

Figure 9. The RESULTANT FURY operational concept



Source: Maj. Gen. David Deptula, "RESULTANT FURY Post Mission Debrief" (Pacific Air Forces Public Affairs, 23 November 2004), www2.hickam.af.mil/pacaf/media.pps.ppt (accessed 8 January 2006).

The exercise showcased technology developed for all-weather precision engagement of mobile-maritime targets, coupling the GBU-31v1

Joint Direct Attack Munitions with the Affordable Moving Surface Target Engagement (AMSTE) system. AMSTE relies on the Ground Moving Target Indicator technology developed for the radar on the Air Force's E-8 Joint Surveillance Target Attack Radar System (JSTARS) aircraft and the RQ-4A Global Hawk long-range unmanned aerial vehicle. AMSTE technology picks out moving objects from sea clutter, generates real-time target-position updates, and then links this data to other aircraft. AMSTE's track information provides command guidance necessary to guide a JDAM weapon during delivery.

RESULTANT FURY proved remarkably successful. Although the F/A-18s participating in the exercise missed their target, B-52Hs scored direct and simultaneous hits on all their moving targets.²⁴ B-52s dropped JDAMs, while the F-18s tested a different weapons combination, the AGM-154 JSOW fitted with AMSTE link kits. Figure 10 shows the results of one B-52 strike.²⁵ Strike photos from RESULTANT FURY are reminiscent of the World War II maritime interdiction photographs featured in Chapter 3.

²⁴ Jonathan Howland, "Operation Resultant Fury Proves Air Force Maritime Strike," *Jewish Institute for National Security Affairs*, 10 February 2005, <http://www.jinsa.org/articles/articles.html/function/view/categoryid/1701/documentid/2850/history/3,2360,655,1701,2850> (accessed 8 January 2006).

²⁵ Major General David Deptula, "RESULTANT FURY Post Mission Debrief," www2.hickam.af.mil/pacaf/media.pps.ppt (accessed 24 April 2006). Air Force participation in RESULTANT FURY was not limited to B-52s. F-15Es, among other aircraft, also participated.

Figure 10. The results of a B-52 strike on day 2 of RESULTANT FURY



Source: Maj. Gen. David Deptula, “RESULTANT FURY Post Mission Debrief” (Pacific Air Forces Public Affairs, 23 November 2004), www2.hickam.af.mil/pacaf/media.pps.ppt (accessed 8 January 2006).

Although naval aircraft participated in RESULTANT FURY, Navy procurement officers remain unconvinced that AMSTE is the answer to maritime interdiction requirements. For AMSTE to be successful, at least two radar platforms must work in harmony. The Navy calls the AMSTE approach “asset-heavy” and “cumbersome” and has yet to invest in AMSTE. Instead, the Navy is pursuing a single platform with a terminal seeker on the weapon to refine target position.²⁶

Regardless of which weapon system ultimately prevails, encouraging the Air Force to embrace maritime interdiction and the associated challenges helps spur innovation. The RESULTANT FURY demonstration constituted an Air Force solution to an identified gap in US maritime weapons capabilities. The Navy’s program manager for precision-strike weapons acknowledges, “We definitely have a gap in

²⁶ Deptula, “RESULTANT FURY Post Mission Debrief,” www2.hickam.af.mil/pacaf/media.pps.ppt.

capability in striking moving targets at sea.”²⁷ Pairing JDAM with AMSTE is a low-cost, novel idea; per pound, JDAMs are as cheap as hamburger, yet they provide precision strike capability. Linking AMSTE to a Small-Diameter Bomb (SDB), a 250-pound-class weapon under development for the Air Force, will lower the cost even more. Cost is only one factor, however, in improving joint maritime capability.

The Air Force is currently ill prepared to accomplish a sea strike mission. RESULTANT FURY was designed strictly as a demonstration and does not reflect current operational capabilities. The Air Force removed the AGM-84D Harpoon from its weapons inventory, leaving the Air Force without a specialized weapon for maritime interdiction. The AMSTE–JDAM combination is promising, but the technology remains unfunded beyond the prototype stage. Laser-guided munitions offer an alternative, but Air Force pilots simply do not train to drop them on ships. During RESULTANT FURY, a B-52 crew became the first aircrew in the Air Force to drop a self-designated, laser-guided weapon on a moving ship. The bomb found its target during the exercise, but combat conditions in the Southwest Pacific present a tougher challenge. Weather patterns and cloud cover in the Strait of Malacca could substantially degrade the effectiveness of laser-guided munitions at certain times of the year.

Training for Joint Maritime Operations

Air Force crews executing a maritime mission may leverage experience gained from traditional air interdiction, close air support, and counterair missions, but maritime operations require a unique training regimen. Countersea operations require familiarity with naval air warfare, terminology, and command and control.²⁸ Few Air Force aircrew

²⁷ Howland, “Operation Resultant Fury Proves Air Force Maritime Strike,” <http://www.jinsa.org/articles/articles.html/function/view/categoryid/1701/documentid/2850/history/3,2360,655,1701,2850>.

²⁸ Air Force Doctrine Document (AFDD) 2-1.4, *Countersea*, 15 September 2005, 8. Air Force and Navy terminology and nomenclature are often different. Differences in language and service culture may cause

have experience working directly with the Navy's principle air control system afloat, the Navy Tactical Air Control Center, or the Marine Corps equivalent, the Marine Air Command and Control System. Maritime weather conditions may change rapidly; characteristics such as wave height and sea spray impact visibility and radar/sensor effectiveness for platforms and munitions. Communication procedures, tactical planning, threat capabilities, friendly-force identification, rules of engagement, and legal factors are all different. Units must train regularly for their *countersea* mission to gain experience, develop procedures, and streamline integration with maritime forces.²⁹

The US Air Force needs to resurrect its maritime capabilities and train for joint maritime operations. The author of a 2005 Weapons School paper provided a frank assessment of Air Force maritime capabilities: "In general, the Air Force is unprepared for maritime interdiction because of a lack of familiarity and training."³⁰ More than just a weapons issue, the Air Force needs to reexamine its aircrew training and create a dedicated joint maritime-interdiction training program. Air Force maritime skills will continue to atrophy unless the Ready Aircrew Program (RAP) requires those capabilities to be exercised. RAP defines the annual training requirements for US Air Force aircrew. The Air Force has virtually eliminated *joint maritime operations* from its RAP requirements.³¹ In other words, fighter and bomber crews do not have to demonstrate a proficiency in maritime employment or an understanding of the unique challenges associated with operating in a maritime environment.

confusion. For example, the Navy's definition of *air defense* is nearly synonymous with the Air Force's definition of *defensive counterair*. The Navy and Marine Corps use *strike warfare* to describe what the Air Force typically refers to as *counterland* or *strategic attack*.

²⁹ Air Force Doctrine Document (AFDD) 2-1.4, *Countersea*, 15 September 2005, 32.

³⁰ Christopher Cassem, "Theater-Level Maritime Interdiction Planning" (United States Air Force Weapons School paper, Nellis Air Force Base, Nevada, 19 June 2005).

³¹ Reference the 11-series Air Force Instructions governing aircrew training. Different instructions (e.g., AFI 11-2B-52, Volume 1) cover different aircraft. Additionally, the Air Force issues an annual RAP-tasking message for each weapon systems.

This lack of readiness is at odds with Air Force doctrine. AFDD 2-1.4, *Countersea Operations*, explicitly recognizes training as a key factor for success: “The most important aspect of countersea preparation is training. Training should be realistic, subject to constant review and evaluation, and reflect the range of military operations in the maritime environment. It should balance flexibility and cost, and also emphasize joint and multinational procedures. Units must train regularly for their countersea mission to gain experience, develop procedures, and streamline integration with maritime forces. The Air Force should pursue continued or increased participation in Service, joint, and multinational maritime exercises.”³²

The disconnect between doctrine and readiness may be a function of lack of funding, interest, or guidance from the Joint Staff. There is no joint doctrine for *countersea* operations. AFDD 2-1.4 references Joint Publication 3-30, but that document only describes command and control issues. Regardless, without a focused program that trains aircrew for joint maritime operations, the Air Force simply will not be ready to contribute to a maritime fight. The Air Force needs to establish a training program that regularly integrates Air Force jets with naval forces in a maritime environment. Otherwise, the Air Force will not be able to provide combatant commanders, especially the PACOM combatant commander, with a desired and valuable capability—“to respond in hours to conduct maritime interdiction anywhere in the Pacific Theater in all weather, day or night for his spectrum of contingency plans.”³³

Creating a web of austere, forward-operating bases in the Southwest Pacific

Bombers, such as the B-1, B-2, and B-52, regularly fly *Global Power* missions to demonstrate their long-range strike capability. These

³² Air Force Doctrine Document (AFDD) 2-1.4, *Countersea*, 4 June 1999, 25.

³³ Deptula, “RESULTANT FURY Post Mission Debrief,” www2.hickam.af.mil/pacaf/media.pps.ppt.

missions would certainly provide a major contribution in a conflict with China, but the number of sorties the Air Force can generate from the CONUS is insufficient to either counter the Chinese maritime threat or exploit strategic vulnerabilities.³⁴ A conflict with China is likely to require persistent and massive offensive firepower, especially in a scenario requiring the United States to protect Taiwan from invasion. Furthermore, CONUS-based bombers are not likely to deter China from military aggression because the force lacks sufficient regional presence.³⁵ Hence, securing access to regional airfields becomes critically important.

Operating from bases within PACOM is more optimal in terms of presence and supports the combatant commander's war-fighting requirements. The vast expanse of the Pacific Rim compound "time" and "access" challenges for military planners.³⁶ In general, an inverse relationship exists between distance and efficiency—as the distance between a base and the conflict area increases, planners need more forces to achieve the same effects. Lengthy enroute legs translate into less on-station loiter time and/or less surveillance coverage. Additionally, supporting operations over long distances places a drain on the tanker force and stretches the limit of aircrew endurance, resulting in a reduced number of effective sorties. In contrast, operating from regional bases means shorter-duration flights and improved sortie rates.

³⁴ The B-2 wing at Whiteman AFB was challenged to fly 45 sorties in support of Operation Allied Force. Their effort also required significant tanker sorties. Because much of the thirty-hour mission was devoted to flying to and from the AOR, B-2s did not loiter or remain on-station for long periods of time.

³⁵ Shannon Kruse, "Bombers in the AEF" (School of Advanced Air and Space Studies Thesis, Maxwell AFB, AL, June 2005), 49-51. Kruse notes, "For CONUS-alert to be persuasive, the adversary has to believe that the United States is ready and willing to unleash an immediate, overwhelming response. Yet, the United States typically escalates in a linear manner without immediately employing long-range strike. Therefore, before it is apparent that the United States is willing to act, adversaries expect preemptory actions, such as a deployment forward of a strike force. In addition, while alert status reduces response time, it does not significantly increase the force's ability to conduct sustained conventional operations in a region."

³⁶ Richard Hawley, Michael Donley, and John Backschies, "Enhancing USAF's Pacific Posture," *Armed Forces Journal International*, September 2002, http://www.armedforcesjournal.com/AFJI/Mags/2002/Sept/USAF_Pacific.html.

Guam, an island approximately 1,500 nautical miles west of the Taiwan Strait, serves as a centerpiece of any future USAF Pacific basing strategy.³⁷ Guam's geographic position and aircraft capacity allows it to serve as a major airpower-projection hub for operations over the China-Taiwan Strait. But, the island's distance from the Strait of Malacca lessens its ability to serve as a counter to China's "String of Pearls." Guam is beyond range for unrefueled aerial operations to cover the Strait of Malacca.³⁸ Given its distance to the Strait, Guam may not be the best staging area to generate persistent presence over oil chokepoints in the Southwest Pacific.

To overcome the tyranny of distance, the United States should create a web of far-flung, austere forward-operating bases throughout the Pacific region. Maintaining forward-operating bases with small permanent support units provides a visible presence, demonstrates US resolve, and strengthens the credibility of US military commitments, yet the austere bases will not be the "intrusive, intimidating symbol of American power" that large, permanent bases symbolize.³⁹ Instead of deploying fighting forces from the United States only during a crisis, units should periodically exercise from austere airfields to improve aircrew familiarity with the region.⁴⁰

As a rule of thumb, a nominal 1,500-mile combat radius can serve as a guide to identify promising airfield locations. A 1,500-mile combat radius permits significant time-on station in likely areas of operations and keeps the sortie duration under ten hours.⁴¹ Ten hours of flight time

³⁷ Hawley, et al., "Enhancing USAF's Pacific Posture,"

http://www.armedforcesjournal.com/AFJI/Mags/2002/Sept/USAF_Pacific.html.

³⁸ Guam is approximately 2900 miles from the center of the Strait of Malacca.

³⁹ Kaplan, "How We Would Fight China," <http://www.theatlantic.com/doc/prem/200506/kaplan>.

⁴⁰ Colin Robinson, "Worldwide Reorientation of US Military Basing Will Mean Major Change," *The Defense Monitor*, September 2003, <http://www.cdi.org/news/defense-monitor/dm-sept-oct03.pdf>. (accessed 22 March 2006).

⁴¹ Commanders have more flexibility the closer bases are to the AOR. For example, planners can optimize aircraft routes to survey a significant area of water or adjust mission taskings to provide more loiter time over certain chokepoints.

is generally viewed as the maximum sustainable sortie duration limit.⁴² Bombers can fly longer, but fighter aircraft are limited by the endurance of its crew (or pilot). Figure 11 depicts a 1500-mile combat radius centered on the Strait of Malacca. It shows a myriad of locations that satisfy US war-fighting requirements. Possibilities include airfields in Singapore, Indonesia, Malaysia, Vietnam, Thailand, Australia, India, Sri Lanka, the Philippines, and small Pacific island states.⁴³

Figure 11. Map of a Nominal 1,500-mile Combat Radius Centered on the Strait of Malacca



In this scenario, the United States does not need to establish permanent air supremacy over the entire Strait of Malacca. Rather, land-based airpower in conjunction with naval forces simply needs to monitor and control the entrance and/or exit of this natural chokepoint. Hence, the Air force might even use airfields in countries like India and

⁴² Hawley, et al., "Enhancing USAF's Pacific Posture," http://www.armedforcesjournal.com/AFJI/Mags/2002/Sept/USAF_Pacific.html.

⁴³ A more in-depth of specific airfields requires evaluating location, survivability, logistical support, capacity for storage, access to jet fuel, runway length, port accessibility, local political support, etc.

Australia that are slightly outside the 1,500-mile combat radius but still make a valuable contribution to maritime interdiction efforts.

Planners must consider survivability when selecting forward-operating bases. Forward-operating bases are not necessarily more vulnerable to attack. On the contrary, operating aircraft from multiple locations may complicate the enemy's targeting problem and thereby, reduce risk. Dispersing aircraft does not imply less efficient or effective operations. Airpower, given its inherent characteristics, can take-off from various airfields and mass when required.

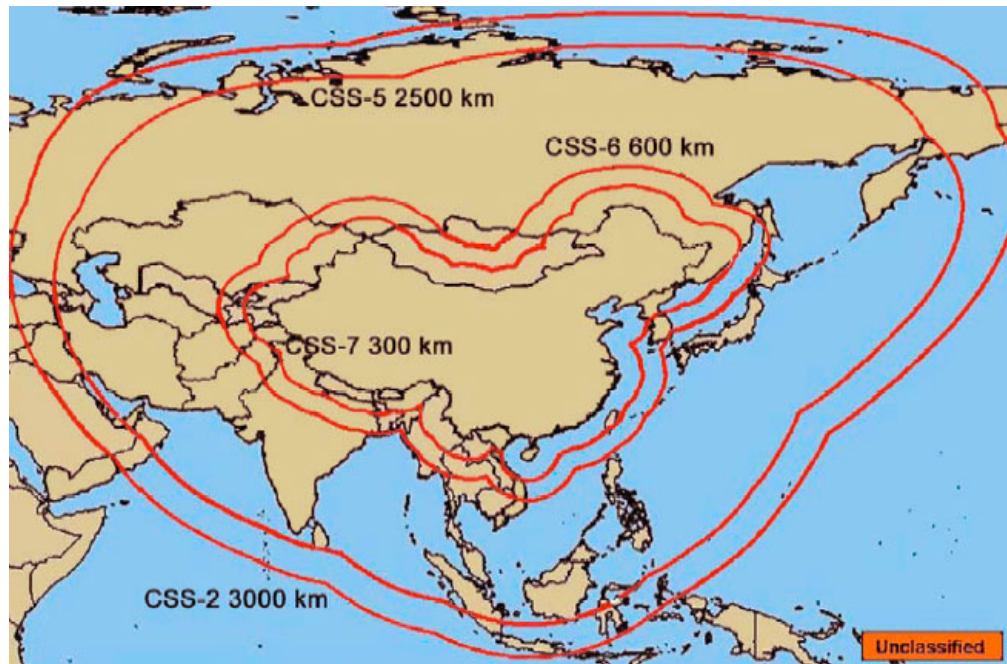
When evaluating survivability issues, planners must consider the Chinese ballistic missile threat. Figure 12 outlines the ranges of short, medium and intermediate-range ballistic missiles launched from Chinese territory. Planners should select forward-deployed locations that minimize the risk from Chinese ballistic missiles, yet still offer potential efficiency advantages. Guam, for example, is located in a "sweet spot" for standoff operations in the China-Taiwan Strait—beyond the range of virtually all current-generation conventional ballistic missiles but close enough to permit significant time on-station.⁴⁴ General Richard Hawley, a former commander of Air Combat Command, contends that a 1,500-mile buffer should be sufficient.⁴⁵ Like Guam, Singapore meets this criterion and is at the edge of the Chinese conventional ballistic missile threat. Aircraft operating from Singapore, though, would have minimal enroute time since its position is in the center of the Strait of Malacca. From a tactical perspective, Singapore is an ideal location. In fact, the Navy currently is constructing a berthing facility in Singapore able to accommodate the largest of its aircraft carriers.⁴⁶

⁴⁴ Hawley, et al., "Enhancing USAF's Pacific Posture," http://www.armedforcesjournal.com/AFJI/Mags/2002/Sept/USAF_Pacific.html.

⁴⁵ Hawley, et al., "Enhancing USAF's Pacific Posture," http://www.armedforcesjournal.com/AFJI/Mags/2002/Sept/USAF_Pacific.html.

⁴⁶ Hawley, et al., "Enhancing USAF's Pacific Posture," http://www.armedforcesjournal.com/AFJI/Mags/2002/Sept/USAF_Pacific.html.

Figure 12. The Threat from Chinese Short, Medium and Intermediate Range Ballistic Missiles



Source: Department of Defense, *Annual Report to Congress: The Military Power of the People's Republic of China* (Washington, DC: Office of the Secretary of Defense, 19 July 2005), 13.

Securing the rights to operate from a web of bases in the region is more important than any single base. First, a web of bases enhances flexibility, forcing the Chinese military to concentrate on a host of problems rather than just a few. Second, China may be less inclined to attack bases located in several sovereign nations than bases in one. Third, setting up the infrastructure to support various employment options makes it more difficult for China to deny US land-based airpower access to the region. Fourth, having *all your eggs in one basket* invites trouble—both in regard to vulnerability and when trying to secure host nation consent. Having one large, permanent base near a conflict zone does not guarantee access. For example, the United States learned this lesson during OPERATION IRAQI FREEDOM as the Turkish parliament

refused to allow US aircraft to fly combat missions from their territory or the 4th Infantry Division to move into Iraq from Turkish soil.⁴⁷

In the event of regional conflict, the United States can expect China to exert considerable political influence and pressure on countries in the region to deny the United States access to their facilities. Fortunately, the geography of the Southwest Pacific somewhat reduces the challenge of acquiring basing rights because the United States can pursue a number of options (reference Figure 11). Over-flight rights are also less of an issue since many nations are either islands or border the ocean. Despite this fact, forethought and planning is required to develop strategic partnerships within the region.

The United States pursues an ad hoc approach that relies on last-minute negotiation to gain access and bases for its land-based airpower assets at its own peril. The next chapter recommends a more systematic approach which capitalizes on enduring friendships, renews strategic ties, and explores new partnerships.

⁴⁷ “Countdown to War,” *The Globe and Mail*, http://www.theglobeandmail.com/backgrounder/iraqcrisis/pages/s_timelinecountdown.html (accessed 14 April 2006). The Turkish parliament’s refusal to allow combat operations to originate from their soil meant US strategy had to adjust. Essentially, the American fought along one axis (i.e., South to North) en route to Baghdad.

CHAPTER 5

DEVELOPING STRATEGIC PARTNERSHIPS

The United States and China are shadowboxing each other for influence and status in the Asia Pacific.

— Evan S. Medeiros
RAND

American defense posture in the Southwest Pacific remains relatively static despite China's military expansion.¹ US inaction threatens the loss of American influence, endangers US power projection capability, and jeopardizes the region's security equilibrium. As a remedy, the United States needs to focus on constructive engagement in order to build strategic partnerships within the region. For land-based airpower, strengthening American military presence and basing options in the Southwest Pacific requires negotiating access to suitable airfields.

A course of action that develops a joint maritime capability and creates a web of austere, forward-operating bases would ostensibly restore the security balance of power in East Asia and complements a broader political-military strategy to reverse Chinese efforts to marginalize US power in the region. This strategy provides the United States with the means to threaten Chinese sea lines of communication, thereby affording the United States the ability to exert significant pressure on China. The Strait of Malacca, the most important waterway for China to expand its naval power into the Indian Ocean and beyond, remains a glaring strategic vulnerability.²

Even a cursory glance at the map reveals that Taiwan and the Straits of Malacca are geographic constraints on Chinese naval

¹ Richard Hawley, Michael Donley, and John Backschies, "Enhancing USAF's Pacific Posture," *Armed Forces Journal International*, September 2002, http://www.armedforcesjournal.com/AFJI/Mags/2002/Sept/USAF_Pacific.html . (accessed 8 March 2006).

² Lee Jae-Hyung, "China's Expanding Maritime Ambitions in the Western Pacific and the Indian Ocean," *Contemporary Southeast Asia* 24, no. 3 (December 2002), 561.

projection.³ Although a Chinese invasion of Taiwan offers the most likely cause of conflict, the United States also has an obligation to prevent China from coercing its neighbors with the threat of military force.⁴ This responsibility is not explicitly formalized in treaties, but the United States requires a capability to intervene. Developing a joint maritime capability and securing basing rights in the region makes clear to the Chinese that military aggression would come at a disastrous cost. The goal is to deter China from embarking upon a war in the first place.

Counterbalancing China's "String of Pearls" while managing the geo-political context requires skilled diplomacy. Robert Kaplan notes, "We will have to continually play various parts of the world off China, just as Richard Nixon played less than morally perfect states off the Soviet Union."⁵ The United States should pursue an approach that both engages China cooperatively and hedges against an emerging peer competitor that may choose to follow a malevolent path. In other words, the United States should pursue policies that, on the one hand, stress engagement and, on the other, emphasize realist-style balancing in the form of external security cooperation with Asian states.⁶ Countering China in a Bismarckian fashion through a system of bilateral security agreements is not incompatible with a policy of engagement.

³ James Holmes and Toshi Yoshihara, "The Influence of Mahan upon China's Maritime Strategy," *Comparative Strategy* 24 (March 2005), 29.

⁴ Robert Kaplan, "How We Would Fight China," *The Atlantic Monthly*, June 2005, <http://www.theatlantic.com/doc/prem/200506/kaplan> (accessed 8 January 2006). Some national security experts believe a reunification with Taiwan would not end Chinese naval expansion. In fact, it would only be the beginning.

⁵ Robert Kaplan, "How We Would Fight China," <http://www.theatlantic.com/doc/prem/200506/kaplan>. The following quote summarizes the strategic approach Kaplan thinks the United States should take towards China: "The better road is for PACOM to deter China in Bismarckian fashion, from a geographic hub of comparative isolation—the Hawaiian Islands—with spokes reaching out to major allies such as Japan, South Korea, Thailand, Singapore, Australia, New Zealand, and India. These countries, in turn, would form secondary hubs to help us manage the Melanesian, Micronesian, and Polynesian archipelagoes, among other places, and also the Indian Ocean. The point of this arrangement would be to dissuade China so subtly that over time the rising behemoth would be drawn into the PACOM alliance system without any large-scale conflagration—the way NATO was ultimately able to neutralize the Soviet Union."

⁶ Evan Medeiros, "Strategic Hedging and the Future of Asia-Pacific Stability," *The Washington Quarterly*, Winter 2005/2006, http://www.twq.com/06winter/docs/06winter_medeiros.pdf (accessed 8 January 2006).

To gain access to a web of forward-operating bases, the United States should (1) capitalize on longstanding historical ties, decades of goodwill, and enduring friendships; (2) renew political and military ties with allies that have been neglected; and (3) explore new strategic partnerships. The following discussion does not provide a detailed political-military strategy for individual countries and does not provide an exhaustive list of possible political-military courses of action. Rather the purpose is to highlight some promising diplomatic paths to secure basing rights. A common theme is the exploitation of uncertainty surrounding China's rising power, especially given its historical penchant for resorting to military force to settle territorial disputes.⁷

Capitalizing on Enduring Friendships

Most countries in the region, to include some longstanding American allies, face a security dilemma with regard to relations with China. They want to maintain mutually beneficial economic ties with China, while addressing security concerns over China's growing military capabilities.

Australia offers one example. Australian government officials fear their country will become increasingly marginalized in Asia unless it rethinks its defense and economic alliances.⁸ During a visit to Beijing in 2004, the Australian Foreign Minister questioned whether the Australia, New Zealand, United States Security Treaty (ANZUS Treaty) would apply if China invaded Taiwan.⁹ News commentaries following the visit noted, "The Foreign Minister's talks in Beijing over the past two days have shown how quickly even a conservative, staunchly pro-US government in

⁷ China has fought wars over territorial disputes with India, Mongolia, Russia, Vietnam, the Philippines, etc. Chapter 2 provides more details on the military clashes China has had with the Philippines and Vietnam over the Spratly Islands.

⁸ Joe de Courcy, "China's Global Relations," *Asia Intelligence Special Report*, January 2003, www.asiaint.com (accessed 8 April 2006).

⁹ "Taiwan urges ANZUS solidarity," *ABC News Online*, 20 August 2004, <http://www.abc.net.au/news/newsitems/200408/s1180851.htm> (accessed 8 January 2006). The United States, Australia, and New Zealand signed the ANZUS defense pact in 1971. In 1984, New Zealand was suspended from the treaty after a disagreement over visiting rights for US nuclear-armed or nuclear-powered ships. The US-Australia alliance under the ANZUS Treaty remains in full force.

Canberra is being turned by China's rapidly rising economic power and influence, to the point where it is distancing itself from a key US strategic posture in the region.”¹⁰ Although the Australian Prime Minister quickly moved to spin the Foreign Minister’s remarks, by then the damage was done.¹¹

Australia’s fears are partly due to ambiguity in American defense policy. Creating a web of austere bases would strengthen US presence, soothe Australian fears regarding American commitment to the region, and lessen the need for Australia and other allies in the region to hedge their defense policies.

In negotiating access and basing rights with Australia, the United States may be able to take advantage of political-diplomatic tensions between Australia and China. Potential areas of disagreement include human rights, China’s nuclear testing, the Spratly Islands, Tibet, and illegal migrants.¹²

The United States may also be able to capitalize on Australia’s involvement with the Five Power Defense Arrangement to build closer relations with some of the other signatories to that treaty. The Five Powers Defensive Arrangement obligates Australia, the United Kingdom, New Zealand, Singapore, and Malaysia to consult in the event of external threats and gives privileged access and stationing rights to Commonwealth forces. With Australia’s support, the United States may be able to leverage the provisions of the Five Power Defence Arrangement as a way to forge an even closer defense relationship with Singapore, an ally that has consistently supported a strong US military presence in the

¹⁰ Hamish McDonald and Tom Allard, “ANZUS loyalties fall under China’s shadow,” *The Sydney Morning Herald*, August 18, 2004.

¹¹ Adam Cobb, “China’s Military Modernization and the Cross-Strait Balance,” Congressional testimony before the U.S.-China Economic and Security Review Commission, 15 September 2005, http://www.uscc.gov/hearings/2005hearings/written_testimonies/05_09_15wrts/cobb_adam_wrts.pdf.

¹² Stuart Harris, “The Role of China in Australia’s Regional Security Environment,” in *China’s Shadow: Regional Perspectives on Chinese Foreign Policy and Military Development* (Santa Monica, CA: RAND, 1998), eds. Jonathan D. Pollack and Richard Yang, 134.

Asia-Pacific region, and bolster defense association with Malaysia, a country that is ideally situated for maritime interdiction bases but does not have strong US-defense ties.

Renewing Strategic Ties

The United States should make an effort to renew its strategic ties with the Philippines. One *Country Study* likens the lengthy and intimate “special relationship” between the Philippines and the United States to a family feud.¹³ In 1951, the Philippines and the United States signed a Mutual Defense Treaty (MDT) to provide mutual military assistance. During the Cold War, the United States maintained large military facilities in the Philippines, to include Clark Air Base and Subic Bay Naval Base, until the early 1990s when the Philippine congress intervened to prevent the renewal of lease agreements. Although the Philippine Congress did not question the need for a military alliance, the physical presence of such large bases offended nationalists. The nationalists saw the “socially deformed communities” outside gates of the American facilities as a “national disgrace.”¹⁴

Austere, forward-operating bases have less of a footprint, so they may be more politically palatable for the Philippine domestic constituency. The Philippine Department of Foreign Affairs takes the position that the presence of US armed forces in the Philippines, albeit during approved military exercises, is a positive contribution.¹⁵ The

¹³ Federal Research Division of the Library of Congress, *Philippines Country Study*, 1991, <http://countrystudies.us/philippines/92.htm> (accessed 1 April 2006).

¹⁴ Federal Research Division of the Library of Congress, *Philippines Country Study*, <http://countrystudies.us/philippines/92.htm>.

¹⁵ Steve Rogers, “Beyond the Abu Sayyaf,” *Foreign Affairs* 83, no. 1 (January/February 2004), <http://www.foreignaffairs.org/20040101facomment83103/steven-rogers/beyond-the-abu-sayyaf.html> (accessed 8 April 2006). See also Ambassador Francis Ricciardone, “The United States and the Philippines: Partnership in Advancing Our Mutual Security,” Lecture at the National Defense College of the Philippines, Camp Aguinaldo, Manila, 26 August 2002, <http://usembassy.state.gov/manila/wwwham01.html> (accessed 8 January 2006). In January 2002, 600 US soldiers deployed to support Philippine forces fighting the Abu Sayyaf, a loosely organized gang of Islamist bandits entrenched on the southern Philippine islands of Basilan and Jolo. The operation was a failure: a year after the deployment, U.S. forces had withdrawn with their enemy still in place and the Philippine government suffering from a damaging scandal. Since then, the focus of U.S. assistance has

Philippine government is acutely aware of unresolved territorial disputes it has with China over the Spratly Islands. As noted in Chapter 1, the Philippine armed forces have previously engaged in military clashes with China over these issues. The challenge becomes striking a balance between Philippine political sensitivities and security interests.

The Philippine government currently will not negotiate access agreements or consider long-term stationing of American troops in the country, but officials recognize congruent interests bind the two countries together. The Philippine Department of Foreign Affairs extols the benefits of defense relations with the United States on its website: “While we do not rely solely on the MDT for our external defense, the 1951 MDT remains beneficial for the Philippines especially in these uncertain times. At the very least, it could give a pause to a would-be aggressor. Moreover, the MDT serves as a link in the chain of bilateral defense arrangements the United States maintains in the Western Pacific. This security network contributes to regional stability and supports the political environment for promoting investor confidence and economic growth all around the region, including the Philippines.”¹⁶

Additionally, the Philippines rely on its defense agreements with the United States to deter China from territorial aggrandizement and for assuring the security and political stability of the East Asian region. Not only does the Philippine government consider US security guarantees vital to maintaining peace, but it believes that the agreements contribute

changed to include military and development aid. An excerpt from Ambassador Francis Ricciardone’s speech to National Defense College of the Philippines gives a good description of the scope of US-Philippine defense cooperation: “We have intensified our recurrent annual cycle of joint training. . . . Our joint programs are continuing in civil affairs and humanitarian projects, intelligence fusion, and advanced command and control techniques. Current plans are to train up more Light Reaction Companies and battalions, in such skills as night flying and night fighting. There are other joint exercises and programs conducted around the country every year. . . . We have increased the resources devoted to training. . . . The Philippines is the number one recipient of Excess Defense Articles in Asia. We have provided some \$148 million in excess defense articles, including C-130 and UH-1 aircraft, three patrol ships, 400 trucks, and 15,000 M-16 rifles.”

¹⁶ Department of Foreign Affairs, Republic of the Philippines, “Questions Frequently Asked on the RP-US Visiting Forces Agreement,” <http://www.dfa.gov.ph/vfa/content/Faq.htm> (accessed 8 January 2006).

to “the economic development of the Philippines, which, in turn, guarantee the welfare of individual Filipinos.”¹⁷

Exploring New Strategic Partnerships

The United States should not limit its quest for strategic partners to counter China’s growing military power to old friends. The political dynamics are such that even former enemies of the United States may be willing to consider new defense relationships.

The Spratly Islands serves as a major potential flashpoint that affects not only the Philippines, but also Vietnam, Malaysia, Indonesia, and Brunei. These countries may be willing to jointly develop forward-operating bases that could be used both in the event of conflict over the Spratly Islands and for maritime interdiction. They may agree to a closer relationship if it allows them to negotiate with China from a position of strength (i.e., the United States provides assurances that it will not allow China to use military force to settle territorial disputes). China is reluctant to compromise because the Spratly Islands cut across important international shipping lanes and may possess substantial natural resources, including a large reserve of oil. In the 1990s, Indonesia volunteered to mediate the Spratly issue, but gave up after Chinese arrogance annoyed Indonesian leaders.¹⁸ China’s ownership claims extend into Indonesia’s exclusive economic zone and continental shelf. In 2002, China signed a code of conduct governing the Spratly Islands dispute, but this pledge amounts to little more than a non-binding commitment not to escalate tensions in the area.

In addition to territorial disputes, the United States can call attention to China’s trade practices that negatively affect its neighbors’ overseas markets and foreign investment. For example, the Chinese

¹⁷ Department of Foreign Affairs, Republic of the Philippines, “Questions Frequently Asked on the RP-US Visiting Forces Agreement,” <http://www.dfa.gov.ph/vfa/content/Faq.htm>.

¹⁸ Lee Jae-Hyung, “China’s Expanding Maritime Ambitions in the Western Pacific and the Indian Ocean,” *Contemporary Southeast Asia* 24, no. 3 (December 2002), 558.

electronics industry has captured much of the market that the Malaysian manufacturing base formerly commanded.

The United States can also explore building strategic partnerships with Malaysia and India. An outreach to Malaysia may prove fruitful, particularly since the United States earned a tremendous amount of goodwill in the region from its tsunami relief efforts in early 2005. US servicemen were instrumental in delivering aid because the coastal areas that bore the brunt of the calamity were inaccessible by other means. As for India, the United States can take advantage of a consistent thorn in India's side—China's relations with Pakistan. Relations between China and India are strained; the two countries fought a war over disputed boundaries that have not been resolved yet to either party's satisfaction. Additionally, China helped Pakistan develop missiles, which are aimed at India. As part of China's "String of Pearls" strategy, China is constructing and upgrading ports and naval bases in Pakistan, Myanmar, and Bangladesh, effectively encircling India. India may be willing to allow the United States to set-up austere forward-operating bases to counteract China's power projection capability in the Indian Ocean. In 2005, India conducted its first fighter exercise with the United States in more than three decades. Another exercise is planned for 2006.

More robust military cooperation with India in recent years has yet to strain US relations with Pakistan. An increased American presence in India is not necessarily likely to upset Pakistani leaders as long as US defense policy remains balanced vis-à-vis India and Pakistan. Conceivably, Pakistani support for the US global war on terror may suffer if Pakistani leaders misinterpret actions designed to counter China's "String of Pearls" and perceive a shift in US regional defense policy towards India.

Balancing perceptions and interests is a complex art. Diplomacy cannot modify relations with one country without affecting the

relationship with other nations of the region. In other words, actions and relations are interrelated and ever changing. Pakistan benefits both economically and militarily from Chinese investments in the port of Gwadar. In 1971, India's blockade of the port of Karachi had a serious impact on the Pakistani economy. Again in 1999, India threatened to blockade Karachi port. Because Gwadar is 725 km to the west of Karachi and hence, farther away from India, the port facilities there provide Pakistan with strategic depth along its coastline.¹⁹

Iran, on the other hand, views China's presence at Gwadar as likely to erode the significance of its ports, especially Chabahar, the port that India helped build. China's "String of Pearls" adds to Iran's "feeling of encirclement."²⁰ Despite this unease over Chinese military presence in the region, economic relations between Iran and China are strengthening. In 2004, two of China's state-owned oil companies signed huge deals with Iran, and consequently, China became Iran's top oil export market. China plans to invest over \$100 billion in Iran's energy sector over the next 25 years.²¹ So, any US policy that interrupts the flow of oil from Iran to China would at the very least stir protest.

Winning the Shadowboxing Competition

The purpose of this last chapter is not to recommend American foreign policy as related to every country in the Southwest Pacific. Frankly, there are many interconnected geopolitical issues not covered in this paper. Rather, the intent is to suggest options for the United States to pursue in order to develop strategic partnerships. Securing access

¹⁹ Sudha Ramachandran, "China's Pearl in Pakistan's Waters," *Asia Times*, 4 March 2005, http://www.atimes.com/atimes/South_Asia/GC04Df06.html (accessed 3 March 2006). Ramachandran states, "The value of this distance becomes evident if one considers how vulnerable Karachi port, which handled 90 percent of Pakistan's sea-borne trade in 2001, is to Indian pressure."

²⁰ Ramachandran, "China's Pearl in Pakistan's Waters," http://www.atimes.com/atimes/South_Asia/GC04Df06.html (accessed 3 March 2006).

²¹ Jephraim Gundzik, "The ties that bind China, Russia and Iran," *Asia Times*, 4 June 2005, <http://www.atimes.com/atimes/China/GF04Ad07.html> (accessed 3 March 2006).

and basing for land-based airpower is a vital component of an active US strategy to counter China's "String of Pearls."

As the opening quote in this chapter indicates, the United States and China are shadowboxing each other for influence and status in the Asia.²² The US goal in the region should be to out maneuver China, gain and maintain a favorable position of advantage in the region through superior military and diplomatic footwork, and preserve the ability to deliver a winning blow if China decides to throw a punch. Just like in boxing, training often decides a match before the bell rings. Embracing, training, and funding a joint maritime capability, to include securing a web of forward-operating bases, may provide the United States with a knockout punch it holds in reserve to deter China from starting a military conflict.

²² Medeiros, "Strategic Hedging and the Future of Asia-Pacific Stability," http://www.twq.com/06winter/docs/06winter_medeiros.pdf

CONCLUSION

The argument has been advanced that the Air Force should be concerned with land objectives, and the Navy with objectives on and over the water. That distinction is to deny the peculiar quality of the air medium, the third dimension. The air is indivisible; it covers land and sea.

— General Carl A. Spaatz
First USAF Chief of Staff

China plans to aggressively challenge US maritime superiority in the Southwest Pacific. As part of its “String of Pearls” strategy, China is building a network of intelligence-gathering bases and power projection hubs along the sea lanes to the Middle East. Additionally, China is rapidly building a blue-water navy, developing advanced missile technology, deploying new submarines, and stockpiling undersea mines to counter US Navy capabilities and protect its energy security. China’s goal is to expand its political and military influence in the region.

The stakes are high; the United States cannot cede control of the region’s strategic waterways without incurring immeasurable risk to vital US interests. One quarter of the world’s maritime trade passes through the Strait. Failure to respond to China’s “String of Pearls” threatens US power projection capabilities and potentially allows China to militarily coerce its neighbors. Prudent action requires the United States to hedge to protect its vital national interests. In a Council on Foreign Relations report, former Secretary of Defense Harold Brown and retired Admiral Joseph Prueher warn, “Under-reaction (to the Chinese threat) might allow China someday to catch unaware the United States or its allies in Asia.”¹

Chinese intentions may be pacific, but Chinese actions seem to suggest otherwise. First, the Chinese government consistently pursues huge increases in military spending. In fact, annual, double-digit

¹ Harold Brown, Joseph Prueher, and Adam Segal, *Chinese Military Power* (New York, NY: Council on Foreign Relations, 2003), 1.

increases in Chinese military spending have been the norm for each of the last fifteen years. Second, China continues to befriend odious regimes, such as Iran, Sudan, and Venezuela, in its quest to secure energy resources. Third, China repeatedly demonstrates a penchant for settling territorial disputes with violence.

The Chinese are developing military capabilities to target specific vulnerabilities in the US military, particularly US maritime power. Dan Blumenthal and Christopher Griffin, fellows at the American Enterprise Institute, remark, “The most important of these capabilities are those that can sink an aircraft carrier . . . (Sinking an aircraft carrier) would have the most profound consequences in the event of conflict, as US carriers are central both to our power projection capabilities and our military prestige.”² The Chinese are starting to view command of the sea as a prerequisite to expand their regional influence and to increase their national power.

Alfred Thayer Mahan’s ideas are shaping Beijing’s geopolitical calculations and maritime aspirations. The Chinese government noisily celebrated the 600th anniversary of the voyages of Admiral Zheng, a naval commander who dominated Asian waters during the 15th century. In an *Armed Forces Journal* article, Richard Fisher observes that these celebrations are a way for the Chinese government “to encourage the Chinese to view maritime power as part of their heritage . . . (and) justify the reality that China is building serious naval forces for the first time in its communist era.”³ Liu Huaqing, the top-ranking officer in the People’s Liberation Army Navy’s Central Military Commission, urged the Chinese government, then under the leadership of Jiang Zemin, to drastically increase the Chinese navy’s budget. Liu studied in Russia and was mentored by Admiral Sergei Gorshkov, the architect of Soviet blue-water

² Dan Blumenthal and Christopher Griffin, “Understanding Strategy: A Delicate Dance,” *Armed Forces Journal*, April 2006, 29.

³ Richard Fisher, “Plan for Growth: China’s Surface Fleet Modernization Fits Beijing’s Appetite for Sea Power,” *Armed Forces Journal*, April 2006, 30.

naval ambitions.⁴ Influenced by Mahan's theories, the Chinese added 10 new destroyers to their naval inventory, six of which were built in China since 2002. Chinese naval bases included in the "String of Pearls" infrastructure satisfy the Chinese navy's "need for Mahanian coaling stations."⁵

Alfred Thayer Mahan's theories are powerful, but context and the means of achieving maritime influence have changed since he codified his idea in writing. To counter China's "String of Pearls" strategy, the United States should look to Corbett's theories and integrate airpower. Specifically, land-based airpower (to include Navy, Marine Corps, and Air Force aircraft) can help control key maritime choke points, trade routes, and canals. Airfields, rather than naval ports, can serve as the new "coaling stations." This idea has historical precedence. The war against Japanese maritime transportation during WWII provides historical evidence of the land-based airpower's effectiveness in sinking ships and controlling the littorals.

Historical parallels are not exact, but there are some striking similarities between Japan at the start of WWII and China today. Japan, a growing Asiatic power that at the time had similar resource aspirations as China does today, imported 82 percent of its oil via sea routes. Similarly, eighty percent of China's oil imports pass through the Strait of Malacca. Japan, like China today, depends on unimpeded sea lines of communication in order to import oil and fuel.

In the Pacific Theater during WWII, land-based airpower was a decisive element in the US strategy to secure, exploit, and protect maritime lines of communications. Land-based aircraft were particularly lethal in the maritime domain, sinking almost 1.3 million tons of Japanese shipping. In the Battle of the Bismarck Sea, approximately one hundred Allied planes attacked and destroyed an entire Japanese

⁴ Fisher, "Plan for Growth," 30.

⁵ Fisher, "Plan for Growth," 32.

convoy. In that raid, Japan lost over 3,500 troops who were being ferried to reinforce critical areas. Land-based aircraft established maritime supremacy across the entire South China Sea. Flying from the Marianna Islands, B-29s mined Japanese harbors with more than 12,000 mines that sank 287 enemy ships and damaged 323 others. After April 1945, mines dropped by B-29s in Japanese harbors and inland waterways accounted for 50 percent of all ships sunk or damaged.⁶

At the end of the war, the US Strategic Bombing Survey (USSBS), a team of civilian analysts and military officers commissioned by President Roosevelt to investigate the effects of bombing, concluded land-based airpower quite effectively performed the maritime interdiction mission. In fact, land-based aircraft actually sank a larger percentage of enemy ships than carrier-based aviation—approximately 23.8 percent versus 16.3 percent!⁷ Land-based aircraft also destroyed a large number of barges and vessels that were not included in the survey. These aerial efforts combined with an Allied submarine campaign and naval blockade so disrupted Japan's ability to import raw materials and oil that leading Japanese industrialists informed military leaders that the war could not continue.

The US Navy does not have to shoulder the responsibility to counter China's "String of Pearls" strategy alone. The Air Force has much to contribute in the fight to control the littorals. Land-based airpower provides combatant commanders with the ability to rapidly conduct maritime interdiction against enemy combatants and merchant ships. This capability is particularly important for US Pacific Command.

⁶ United States Strategic Bombing Survey, Transportation Division, *The War Against Japanese Transportation*, vol. 54 (Washington, DC: GPO, 1947), 8.

⁷ United States Strategic Bombing Survey, *Summary Report: Pacific War* (Washington, DC: GPO, 1946), available at <http://www.anesi.com/ussbs01.htm> (accessed 26 April 2006). According to the USSBS *Summary Report*, "Fifty-four and seven-tenths percent of this total was attributable to submarines, 16.3 percent to carrier-based planes, 10.2 percent to Army land-based planes and 4.3 percent to Navy and Marine land-based planes, 9.3 percent to mines (largely dropped by B-29s), less than 1 percent to surface gunfire, and the balance of 4 percent to marine accidents." (10.2% + 4.3% + 9.3% = 23.8%) (USSBS, p. 73)

To counter China's "String of Pearls," the United States needs to develop a joint maritime capability, to include Air Force aircraft. This idea is not simply Billy Mitchell re-visited. Rather than use airpower to replace the Navy's battle fleet, the concept leverages all US airpower assets to contribute to a joint maritime fight. Land-based airpower can complement sea power, especially when Navy task forces are employed elsewhere. For example, naval operations in the China-Taiwan strait may take priority over other regions in a given scenario. In this case, carrier-based aviation may not have the range or the ability to generate sufficient sorties to simultaneously cover the Strait of Malacca.

RESULTANT FURY, a PACOM exercise conducted in November 2004, demonstrated the lethality of airpower on shipping. The US Air Force and Navy worked together to destroy multiple mobile seaborne targets. The exercise showcased technology developed for all-weather precision engagement of mobile-maritime targets and demonstrated the value of a complementary, joint approach to maritime interdiction.

Despite this success, the US Air Force is currently ill prepared to accomplish a sea strike mission. Senior leaders acknowledge that the Air Force's ability to contribute to the maritime fight has "atrophied."⁸ A recent Air Force Weapons School paper also warned, "In general, the Air Force is unprepared for maritime interdiction because of a lack of familiarity and training."⁹ Joint maritime operation training has virtually been eliminated from the annual training requirements for fighter and bomber crews. More seriously, the AGM-84D Harpoon has been removed from the weapons inventory, leaving a gap in US maritime interdiction capability. Laser-guided munitions offer an alternative, but Air Force pilots simply do not train to drop them on ships. Besides, the weather patterns and cloud cover in the Strait of Malacca would degrade

⁸ David Faggard, "Airmen, Bombers Vital to Sinking Ships" (Pacific Air Forces Public Affairs), <http://www2.hickam.af.mil/PACAF/news/release4.htm> (accessed 8 January 2006).

⁹ Christopher Cassem, "Theater-Level Maritime Interdiction Planning" (United States Air Force Weapons School paper, Nellis Air Force Base, Nevada, 19 June 2005).

their effectiveness. RESULTANT FURY showed the GBU-31v1 Joint Direct Attack Munitions coupled with the Affordable Moving Surface Target Engagement system to be promising. But, that technology has yet to be funded beyond the prototype stage.

The United States should heed the words of the USSBS: “In the Survey’s opinion those air units which had anti-shipping attacks as their prime mission and employed the required specialized techniques, equipment and training achieved against ships the best results for the effort expended.”¹⁰ The Air Force needs to prepare and budget to contribute to the maritime fight. Countersea will remain an underdeveloped Air Force mission until the Department of Defense take steps to elevate it from a collateral mission.

It’s time to revisit the 1948 Key West and Newport Agreement that defined the traditional demarcations between the US Navy and Air Force. DOD Directive 5100.1, “Functions of the Armed Forces and the Joint Chiefs of Staff,” artificially limits US Air Force participation in maritime operations. As a result, maritime interdiction has become the de facto exclusive purview of the US Navy. Again, a better approach would leverage all our nation’s airpower assets in order to identify, develop, and field the right capabilities to meet the needs of unified commanders. Carrier-based aviation seamlessly integrates with land-based aircraft to perform strategic bombing missions, close air support, and other air-to-ground missions. Similarly, Air Force aircraft can become an integral part of the air-to-sea mission.

It’s time to make airpower’s global reach felt on the three-fifths of the world’s surface covered by water. The Air Force must embrace, train, and fund maritime operations; and the United States should strengthen strategic partnerships in the Southwest Pacific to ensure access and basing. Simply stated, land-based airpower is effective at sinking ships

¹⁰ United States Strategic Bombing Survey, *Summary Report: Pacific War* (Washington, DC: GPO, 1946), available at <http://www.anesi.com/ussbs01.htm> (accessed 26 April 2006).

and controlling the littorals. It should be a vital part of US strategy to deter threats that challenge American influence over sea lines of communication. Land-based airpower can play a vital role in preventing China's "String of Pearls" from becoming a Sword of Damocles in the future.

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