

Mahan for the Twenty First Century: His Principles Still Apply to National Power

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Subject Area Leadership

EXECUTIVE SUMMARY

Title: Mahan for the Twenty First Century: His Principles Still Apply to National Power.

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Thesis: The principles of A.T. Mahan are still applicable to national power in the twenty first century.

Discussion: Alfred T. Mahan (1840 - 1914) was writing in an era of technological change, and believed that, despite these changes, the importance of sea power remained unchanged. In so doing, he outlined three requirements (1. production, 2. shipping and 3. colonies) deemed necessary for the success of a nation, and six principal conditions (1. geographical position, 2. physical conformation, 3. extent of territory, 4. number of population, 5. character of the people, and 6. character of the government) that affect sea power. He has often been criticized for his focus on sea power to the exclusion of all other forms of national power. Mahan was writing about what many considered to be the most important element of national power during the late 19th and early 20th century. Elements of national power that are important today had not yet been invented, and were perhaps only envisioned by science fiction writers. The criticisms of Mahan's sole focus on sea power are valid, but it is important to understand that the requirements for the success of a nation and the principles upon which Mahan based his writings on Sea Power are just as essential today to other elements of national power as they were essential in the late 19th century for Sea Power. As a theorist of naval power, his often-derided writings remain relevant. In fact, the global dominance of the United States today is a direct result of our adherence to his principles. Mahan was not able to envision air power, space power, or information dominance that were to become critical elements of national power. He was, however, an astute scholar, and the principles that he outlined as requirements for sea power are relevant today to air power, space power, and information dominance.

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Conclusion: A.T. Mahan's three requirements (1. production, 2. shipping and 3. colonies) deemed necessary for the success of a nation, and six principal conditions (1. geographical position, 2. physical conformation, 3. extent of territory, 4. number of population, 5. character of the people, and 6. character of the government) that affected sea power were valid requirements for national power in the late 19th century, are valid requirements for national power in the 21st century, and will be valid requirements for national power for some time to come. The current position of the United States as the sole global super power is the direct result of adherence to his principles, and adherence to these principles is necessary for the United States to maintain and increase its global dominance.

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I. INTRODUCTION

In these three things - production, with the necessity of exchanging products, shipping, whereby the exchange is carried on, and colonies, which facilitate and enlarge the operations of shipping and tend to protect it by multiplying points of safety - is to be found the key to much of history, as well as of the policy, of nations bordering upon the sea.¹

The principal conditions affecting the sea power of nations may be enumerated as follows: I. Geographical Position. II. Physical Conformation, including as connected therewith, natural productions and climate. III. Extent of Territory. IV. Number of Population. V. Character of the People. VI. Character of the Government, including therein the national institutions.²

These opening quotations form the foundation of Alfred Thayer Mahan's most famous book, *The Influence of Sea Power upon History*, published in 1890.

A. Background

In 1904, while Mahan was continuing to author books, the scholar Halford Mackinder presented to the British Royal Geographical Society his view that the era of 400 years of sea power influence was drawing to a close, and that an era of industrialization, railways, agriculture, mining and investment

¹ Alfred T Mahan, *The Influence of Sea Power upon History 1660-1783* (Boston: Little Brown and Company, 1949), 28.

² Mahan, *The Influence of Sea Power upon History 1660-1783*, 28-29.

was commencing. With this new era, central Asia would regain its previous importance. In attendance at the Royal Geographical Society was the British politician and journalist Leo Amery, who wrote the following:

Sea power alone, if it is not based on great industry, and has not a great population behind it, is too weak for offence to really maintain itself in the world struggle...both the sea and the railway are going in the future...to be supplemented by the air as a means of locomotion, and when we come to that...the successful powers will be those who have the greatest industrial base. It will not matter whether they are in the center of a continent or on an island; those people who have the industrial power of invention and of science will be able to defeat all others.³

Halford Mackinder was not very perceptive in that he failed to see that Mahan placed great importance on industry and commerce. He made numerous references to their importance in the opening chapter "Elements of Sea Power" of *The Influence of Sea Power upon History 1660-1783*. Mahan was primarily a historian, and was therefore not very astute at peering into the future to see how the sea power principles of the past could affect the 20th and 21st centuries. Mackinder was better able to envision the future, and the great strength exhibited by the Soviet Union during the 20th century attests to his foresight.

What Mackinder overlooked, however, was the strength of other industrial nations, primarily the United States. Amery

³ Leo Amery, quoted in Paul M. Kennedy, *The Rise and Fall of British Naval Mastery*, (Atlantic Highlands, NJ: The Ashfield Press, 1990), 184-185.

was the most perceptive of the three, as he understood the coming importance of industry, but did not confine his thoughts to central Asia. He was, however, seeing a future that has not yet arrived. While air transportation has grown in importance, transportation by sea continues to be the primary means of moving goods between nations because of the lower cost. A recent publication of the Institute for National Strategic Studies at the National Defense University estimated that transportation by sea accounts for 90 percent of world trade when measured by weight and volume.⁴

Mahan was concerned with Sea Power because it was considered to be the most significant element of national power at the time. In the 21st century, there are other elements of national power that are considered to be of equal or greater importance than Sea Power.

Mahan has often been criticized for his focus on sea power to the exclusion of all other forms of national power.⁵ The criticisms of Mahan's sole focus on sea power are valid, but it is important to understand that the requirements for the success of a nation and the principles upon which Mahan based his writings on Sea Power are just as essential today to other

⁴ Sam J. Tangredi, "Introduction," in *Globalization and Maritime Power*, ed. Sam j. Tangredi (Washington: National Defense University Press, 2002), XXVI.

⁵ Criticism of Mahan has come from many quarters, including Paul M. Kennedy in *The Rise and Fall of British Naval Mastery*, (Atlantic Highlands, NJ: The Ashfield Press, 1990), and Philip A. Crowl, "Alfred Thayer Mahan: The Naval Historian," in *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, ed Peter Paret (Princeton NJ: Princeton University Press, 1986).

elements of national power as they were essential in the late 19th century for Sea Power.

This paper will examine Mahan's three requirements deemed necessary for the success of a nation and six Principles of Sea Power, and then examine their applicability to air, space, information dominance, and the current National Security Strategy of the United States.

B. METHODOLOGY

While a study of this topic can be analyzed in a variety of different ways, this paper will begin with a summary of the three requirements (production, shipping and colonies) that Mahan deemed necessary for the maritime success of a nation, and six principal conditions (geographical position, physical conformation, extent of territory, number of population, character of the people, and character of the government) that affected sea power. As each is examined, its current status will be outlined. This study will then examine each of the following elements of national power in light of Mahan's six principal conditions:

- Sea Power (The combination of military strength afloat and peaceful commerce through shipping) in the 21st century.

- Air Power (including commercial aviation) in the 21st century.
- Space Power (military and commercial) in the 21st century.
- Information Dominance in the 21st century.
- The National Security Strategy of the United States.

Finally, several conclusions will be drawn in an attempt to better understand the future of United States' national power.

C. ASSUMPTIONS

For the purpose of limiting this essay, the author assumes that the reader has previously been exposed to some of the many works of Mahan and to some of the basic concepts of sea power as espoused by authors such as Mahan, Sir Julian Corbett and Paul M. Kennedy.

Before examining Mahan's six principles of Sea Power, one must first examine the three requirements that Mahan determined to be of great importance to nations bordering on the sea; production, shipping, and colonies.

II. KEY # 1: PRODUCTION

The United States continues to be a world leader in the production of goods and services. According to the Central Intelligence Agency,

The United States has the largest and most technologically powerful economy in the world ... U.S. firms are at or near the forefront in technological advances, especially in computers and in medical, aerospace, and military equipment, although their advantage has narrowed since the end of World War II.⁶

The CIA reports that per capita Gross Domestic Product (GDP) and overall GDP in the United States for 2001 was \$36,300/\$10,082 trillion with an estimated July 2002 population of 280,562,489. Compare this with other regional powers like Germany at \$26,200/\$2.174 trillion and an estimated population of 83,251,851, France at \$25,400/\$1.51 trillion and an estimated population of 59,765,983, Russia at \$8,300/\$1.2 trillion and an estimated population of 144,978,573, China at \$4,300/\$5.56 trillion and an estimated population of 1,284,303,705, and Japan at \$27,200/\$3.45 trillion and an estimated population of 126,974,628.

The only country in the world that has a higher per capita GDP than the United States is Luxembourg, at \$43,400. However,

⁶ *CIA Factbook*, online edition, under "United States – Economy", URL: <http://www.cia.gov/cia/publications/factbook>, accessed 22 December 2002.

with a population of only 448,569 (July 2002 estimate), the GDP for Luxembourg is only \$19.2 billion (2001 estimate).⁷ It should be noted that if the European Union were to be considered as a whole, their GDP would exceed that of the United States.

For many years, when discussing the topic of production, governments and economists have been concerned over the relocation of manufacturing from the rich world of America and Europe to less developed countries like China and India. According to *The Economist*, this should not be a concern because the cost of physically transforming raw materials into the product may only be a tenth of the retail price. Much of what used to be called "service work" is now becoming inextricably part of the product and what used to be called "manufacturing". This makes up a substantial part of the retail price, and it is in these areas that Americans and Europeans excel. The Economist notes that Europe and America do not have anything to fear from manufacturing in less developed countries.⁸

III. KEY # 2: SHIPPING.

The commercial shipping industry has long been an area of concern for the United States. While there are sufficient

⁷ *CIA Factbook*, online edition, under various countries "Economy", URL: <http://www.cia.gov/cia/publications/factbook>, accessed 22 December 2002.

⁸ *Economist Magazine*, online edition for 20 December 2002, URL: www.economist.com/surveys accessed 02 January 2003.

numbers of ships plying the trade routes across the oceans to the shores of the United States, most of the ships are foreign flagged, manned by foreign crews, and built overseas.

According to the Institute of Shipping Economics and Logistics, the largest merchant fleet belongs to Greece, followed by Japan, Norway, the Peoples Republic of China, and in fifth place, the United States. Approximately 25% of the ships in the United States commercial fleet are flagged in the United States, with the other 75% foreign flagged. This compares with Greece (69% foreign flagged), Japan (89% foreign flagged), Norway (59% foreign flagged), China (48% foreign flagged), and Germany (84% foreign flagged).⁹ Of the foreign flagged ships in the United States commercial fleet, 25% were flagged in the Marshall Islands, 33% in the Bahamas, 18% in Liberia, 9% in Panama, and the remainder registered in other small countries with open registry.¹⁰

As can be seen from the preceding paragraph, while the United States merchant fleet is 75% foreign flagged, this situation is not that different from most major trading nations, and is not seen to present a major difficulty for the nation. Commercial

⁹ Institute of Shipping Economics and Logistics, URL: www.isl.org/products_services/publications/ownership.shtml.en, accessed 31 December 2002

¹⁰ Institute of Shipping Economics and Logistics.

interests prevail, and the United States is able to find sufficient quantities of ships to transport imports and exports.

In addition to the merchant fleet, the United States Department of Transportation maintains a Ready Reserve Force of ships under the Maritime Administration. The Ready Reserve Force is made up of 76 ships that are ready for deployment within 4-20 days. The Ready Reserve Force's mission is to provide a surge shipping and resupply capability to support the deployment of United States forces around the globe.¹¹

The Ready Reserve Force proved itself invaluable in support of operation Desert Storm, and other contingencies ranging from Somalia to Bosnia and Afghanistan. Ships from the Ready Reserve Force are now deployed in support of Iraqi Freedom. The Ready Reserve Force is an important component in the maritime capability of the United States.

According to an address given by Robert E. Kramek (the President of the American Bureau of Shipping, Americas Division) to the Shipbuilding Decisions '99 conference in Washington D.C., world trade by sea increased from 3.3 billion tons in 1980 to 4.3 billion tons in 1995, and is expected to rise to 5.5 billion tons by 2010. At the same time, shipbuilding in the United

¹¹ Captain William G. Shubert, the head of the Maritime Administration, speech to the 3rd General Assembly of the International Association of Maritime Universities, at Samoset Resort, Rockport, Maine, presented September 24, 2002, URL: www.marad.dot.gov/headlines/speeches/IAMU.htm, accessed 31 December 2002.

States declined from 205 vessels in 1975 (4.1% of the world total) to 30 vessels in 1998 (.2% of the world total).

Together, Japan and South Korea produce two-thirds of the world's commercial ships.¹² Since Japan and South Korea are presently allies of the United States, the United States should have access to commercial shipbuilding beyond what is produced in the United States. The decline in the shipbuilding industry in the United States may become a problem in the future if the geopolitical situation in the world changes.

While the size, country of original production, foreign flagging and manning of the United State merchant fleet have been a concern for some time, it has not, nor is it perceived to be able to adversely impact the United States' economy or security in the future.

IV. KEY # 3: COLONIES.

Mahan lived during the age of empires, and thus imperialism influenced his thinking. Today, nations no longer maintain large empires to bolster their economies or to facilitate the deployments of their militaries. The last of what may be

¹²Robert E. Kramek, President of the American Bureau of Shipping, Americas Division, address given to the Shipbuilding Decisions '99 conference in Washington D.C on 07 December, 1999, URL: <http://www.eagle.org/news/speeches/rek99dec.html>, accessed on line 31 December 2002.

thought of as an empire, the Soviet Union, collapsed in 1989, leaving only a few countries with overseas colonies from which to influence regional events.

France still maintains influence through territory in the Pacific (French Polynesia), South America (French Guiana), Caribbean (Guadeloupe and Martinique), Indian Ocean (Reunion), and through former colonies in Africa with whom it retains good relations.

The United Kingdom still has territory in the Indian Ocean (British Indian Ocean Territory), the Mediterranean (Gibraltar), the Caribbean (British Virgin Islands), and, through the Commonwealth, ties to 54 countries.

Russia is a huge country stretching from the Baltic Sea to the Pacific Ocean, giving it substantial regional influence. In addition, Russia maintains limited relations with adjacent countries, a legacy of the Soviet Union.

The continental United States has large coasts on both the Atlantic and Pacific oceans, providing access to Europe and Africa across the Atlantic and to Asia across the Pacific.

In the Pacific, Hawaii and Alaska became states in 1959, and Guam remains a United States Territory. Many other small islands are all associated with the United States in one form or another.

The United States is tied to Puerto Rico and the Northern Mariana Islands via separate commonwealths, providing additional influence in the Pacific and Caribbean.

Due to its economic and military might coupled with proximity, the United States maintains substantial influence in Central and South America.

Combined, these locations all give the United States significant influence in the world, although they are not colonies in the traditional sense.

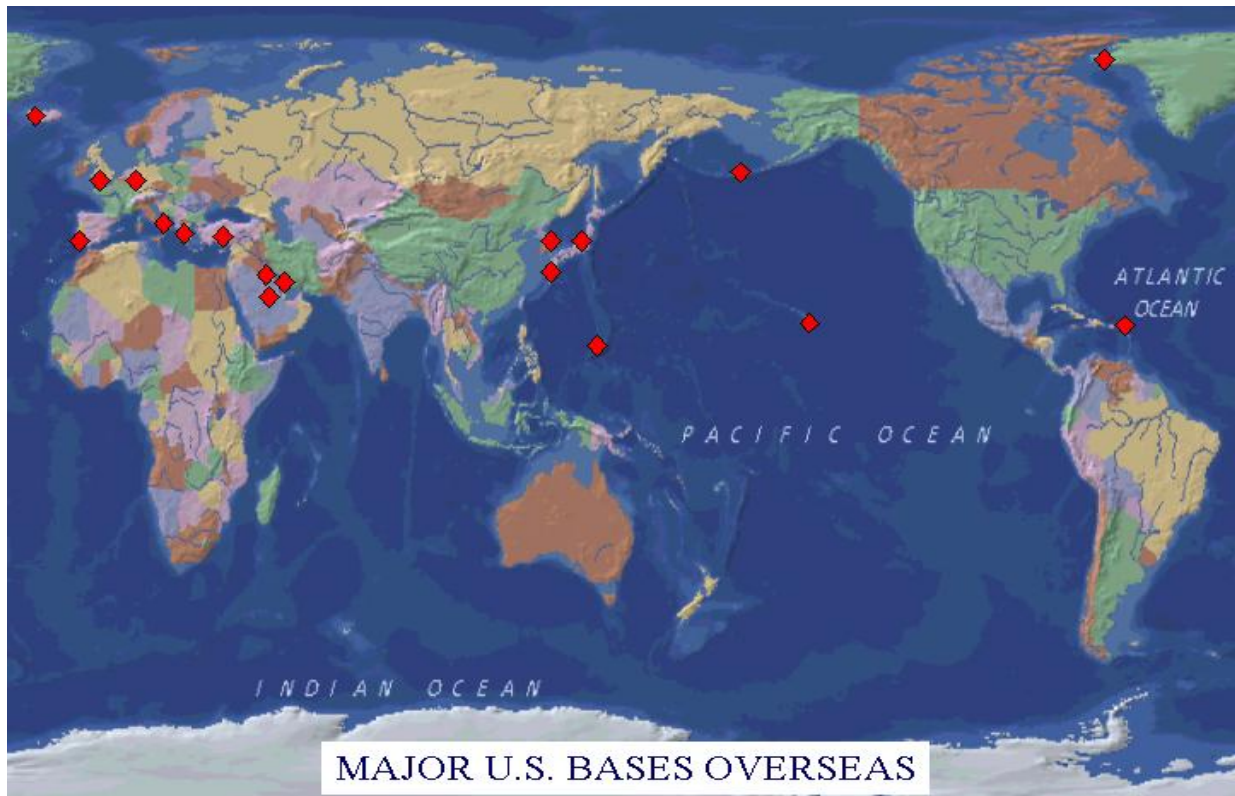


Figure 1. Major U.S. Bases Outside of the 48 Contiguous States

In addition to enjoying a geographic situation conducive to world influence, the United States maintains military bases around the world, many of World War II legacy (see figure 1). United States forces are stationed in Europe at bases in England, Germany, Spain, Portugal, Italy and Iceland. In Asia, U.S. forces are stationed at bases in Japan and South Korea, with bilateral agreements and easy access to facilities in Australia, Thailand, and Singapore. In the Middle East, Saudi Arabia maintains a reluctant military relationship with the United States, and U.S. forces are stationed in the Kingdom as well as in Bahrain, Qatar, and Kuwait. The United States maintains good military relations with the United Arab Emirates, Oman, and with Pakistan since the war in Afghanistan.

Many other countries around the world are friendly with the United States and would offer facilities or other assistance in times of crisis. The geographic region in which the United States maintains only limited military connections is Africa, where diplomatic connections are the backbone of U.S. influence in the region.

While Mahan thought in late 19th century terms of colonies, U.S. access to overseas naval and air bases is significant as outlined above, alleviating the need for formal colonies. In fact, the United States is able to enjoy the benefits that

colonies historically provided without any of the negative connotations or burdens of administering colonies.

Having examined the three requirements that Mahan determined to be of great importance to nations bordering on the sea and determining their current status and applicability, let us now examine his six principles of Sea Power.

V. PRINCIPLE # 1: GEOGRAPHICAL POSITION

As mentioned in the section on colonies, the United States maintains significant global influence through territory, overseas bases, and bilateral agreements. According to Mahan, *"The geographical position of a country may not only favor the concentration of its forces, but give the further strategic advantage of a central position and a good base for hostile operations against its probable enemies"*.¹³ As discussed in the section on colonies, the United States maintains just such a global strategic advantage, with extensive coastlines on both the Pacific and Atlantic Oceans. That strategic advantage is further enhanced by states and territories in the Pacific, overseas bases worldwide, and regional or bilateral agreements.

Mahan was concerned that "the Republic has no ports very near the great centers of trade abroad. Her geographical

¹³ Allan Wescott, *Mahan on Naval Warfare*, (Mineola NY: Dover Publications, 1999), 23.

position is therefore singularly disadvantageous for carrying on successful commerce-destroying, unless she find bases in the ports of an ally".¹⁴ As is evident by looking at the locations of United States military bases worldwide (see figure 1), the United States is no longer in the situation that it was during the time of Mahan.

The United States Navy maintains bases in Asia from which to protect merchant traffic passing through the Strait of Malacca, and bases in southern Europe from which to protect merchant traffic passing through the Strait of Gibraltar and the Suez Canal. The overseas bases provide the dual benefit of allowing the United States Navy to protect merchant shipping while being in position to deter hostile naval forces.

While the United States Navy is able to project sea power globally, additional bases in the volatile regions of the Middle East and South West Asia would be of some utility. The United States Navy maintains a base in Bahrain that is the headquarters for the United States Fifth Fleet and the Naval Central Command (NAVCENT). There are however no combatant ships stationed in the Arabian Gulf, only a few minesweepers.

Additional bases in the Middle East and Southwest Asia would only be of benefit if they were in a country that was politically stable, friendly to the United States, and in such a

¹⁴ Mahan, *The Influence of Sea Power Upon History 1660-1783*, 31.

position as to be able to host U.S. bases without causing major political problems for the host government. At the present time, no such favorable conditions exist in any country in the region, although a continued warming of relations with India may bring this to fruition.

It should be noted that while Mahan thought only in terms of the use of naval power to threaten merchant shipping, air power is a significant asset in the 21st century in this endeavor. In addition to the many assets of the United States Air Force, the United States Navy maintains a Maritime Patrol Aviation force capable of interdicting merchant shipping. Air power can operate not only from dedicated U.S. bases and aircraft carriers, but also from the bases of any ally willing to give the United States landing and/or flyover rights.

While the United States does not have a sufficient number of bases in the Middle East and South West Asia, the United States Navy can operate at sea for extended periods of time, enhancing our ability to conduct operations in this volatile region. In addition, the United States Air Force is able to gain access to airfields of friendly nations in times of crises.

Recent operations in the region have included Desert Storm, Enduring Freedom, and Iraqi Freedom. Turkey denied the United States access to bases during Iraqi Freedom, forcing a major change to operational plans and the rerouting of forces from the

Mediterranean to the Arabian Gulf, emphasizing once again the need for bases in the region.

VI. PRINCIPLE # 2: PHYSICAL CONFORMATION, CLIMATE AND NATURAL PRODUCTION

When Mahan discussed "Physical Conformation", he was talking about how the physical geography of the country either enhanced or deterred its ability to interact with regions beyond its borders, concentrating of course on the sea.¹⁵ The physical conformation of the United States includes numerous good ports on the East Coast such as New York, Philadelphia, Boston, Baltimore, Norfolk, Wilmington, Charleston, Savannah, and Miami. There are also many advantageous ports on the Gulf Coast including Tampa/St Petersburg, Mobile, New Orleans, and Houston. In addition there are many excellent ports on the West Coast including San Diego, Los Angeles, San Francisco, Portland, and Seattle.

The United States is blessed with a generally favorable climate (except for regions in the extreme north of the country and Alaska) and natural resources in abundance. While some natural resources are not found in sufficient quantities (oil and certain minerals) to meet the demands of a thriving economy,

¹⁵ Mahan, *The Influence of Sea Power Upon History 1660-1783*, 35-42.

production of food, wood, and other agricultural products generally exceeds demand. The mild climate allows numerous industries to do well including the automobile, aviation, electronics, pharmaceutical, and banking industries.

The natural resources that the United States is deficient in have so far been readily available on the international commodities market. Oil availability constitutes a major concern. The 1973 oil shortages initiated by the OPEC cartel resulted in high prices and long gasoline lines. Since 1973, oil production has expanded greatly in areas beyond the Middle East including North Sea production in the United Kingdom, offshore production in Norway, and large oil fields in Venezuela. This increased world wide production mitigates the success that any one country or region would have in trying to stem the flow of oil to the United States. It does not, however, alleviate price fluctuations caused by production problems or regional turmoil, as evidenced by the current increase in oil and gasoline prices caused by the political instability in Venezuela and the war in Iraq (Iraqi Freedom).

VII. PRINCIPLE # 3: EXTENT OF TERRITORY

Mahan considered that it was not the total area of the country (England was relatively small), but rather, in the case of sea

power, the length of its coastline relative to the size of the country, and the character of its harbors that was important.¹⁶

As mentioned in the section on Colonies, the Continental United States has extensive coastlines on the Pacific and Atlantic Oceans, and on the Gulf of Mexico. This expansive position on the North American continent allows the United States access to and military influence on countries bordering the Pacific (Australia, Asia and the western coast of South America) and Atlantic Oceans (large portions of Europe, the eastern coast of South America, the Caribbean, and the west coast of Africa). The state of Hawaii, the Commonwealth of Puerto Rico, the territories of Guam, Saipan, and other Pacific possessions enhance the extent of United States territory and its resultant world influence.

VIII. PRINCIPLE # 4: NUMBER OF POPULATION

When Mahan considered numbers of population, he was concerned not only with the numbers of inhabitants, but more specifically with the "number following the sea, or at least readily available for employment on ship-board and for the creation of naval material".¹⁷

¹⁶ Mahan, *The Influence of Sea Power Upon History 1660-1783*, 43.

¹⁷ Mahan, *The Influence of Sea Power Upon History 1660-1783*, 45.

Today, the population of the United States does not compare favorably with nations like China or India.¹⁸ Although greatly outnumbered, the status of the maritime industry in the United States remains favorable compared to both nations. Both India and China have navies growing in numbers and capabilities, but their relative economic weakness inhibits their ability to greatly expand either their navy or their commercial fleet. As China and India (particularly the former) continue to grow economically, so will their ability to rival the United States in Maritime dominance.

One area of concern for the United States in the past few decades has been a declining birth rate. Since 1970, the birth rate in the United States fell sharply from what is known as the "replacement rate" (the birth rate at which the population remains stable) of 2.1 to 1.8 in 1985. However, according to a recent *Economist* article using figures obtained from the United States 1990 and 2000 census, and information obtained from the United Nations (see figure 2), the population of the United States is rising much faster than anyone expected. By the 1990s, the fertility rate had climbed back to just below the replacement rate.¹⁹

¹⁸ *CIA Factbook*, online edition, under "United States – People", URL: <http://www.cia.gov/cia/publications/factbook>, accessed 22 December 2002.

¹⁹ "Demography and the West", Special Report, *Economist Magazine*, August 24th 2002, 20-22.

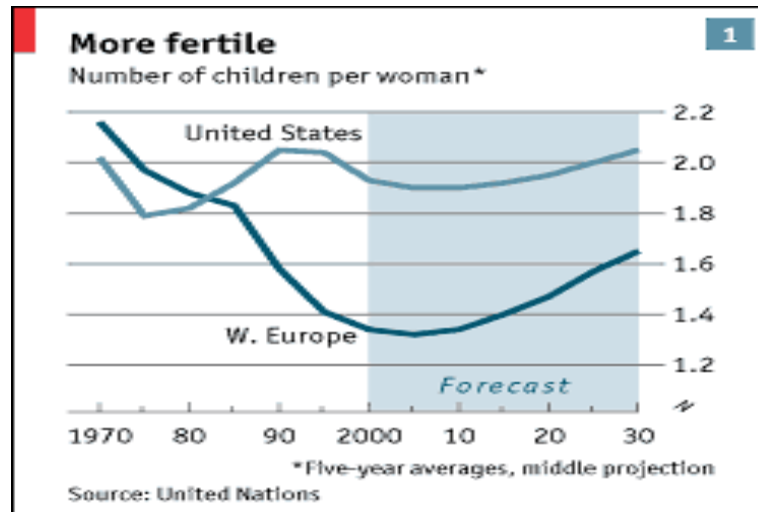


Figure 2. Fertility in the United States and Europe, 1970 to 2030.²⁰

According to *The Economist*, this compares very favorably with Europe, where fertility has declined from about 1.9 in the mid 1980s, to a rate that is now below 1.4. What this means for the future of both economies is staggering. In the article, Bill Frey, an economist at the University of Michigan is quoted as saying that by 2050, the average age in the United States will be 36.2, and in Europe it will be 52.7. This compares with a present average age in the United States of 35.5 and 37.7 in Europe.²¹ If the predictions turn out to be true, over the next few decades Europe will be faced with an older population requiring a greater percent of spending on pensions and medical care.

²⁰ Economist Magazine, *Demography and the West*, 24 August 2002 on line edition, URL: http://www.economist.com/displayStory.cfm?Story_id=1291056, accessed 02 January 2003.

²¹ "Demography and the West", Special Report, *Economist Magazine*, August 24th 2002, 20-22.

In addition to the increased birth rate, the population in the United States is enhanced by immigration. Immigration to the United States is expected to be higher than immigration to Europe (see figure 3). Immigration results in a larger labor pool, which is necessary as the economy continues to expand. Many immigrants are allowed to come to the United States because they possess job skills that are needed in the growing economy, benefiting U.S. companies and the economy as a whole.

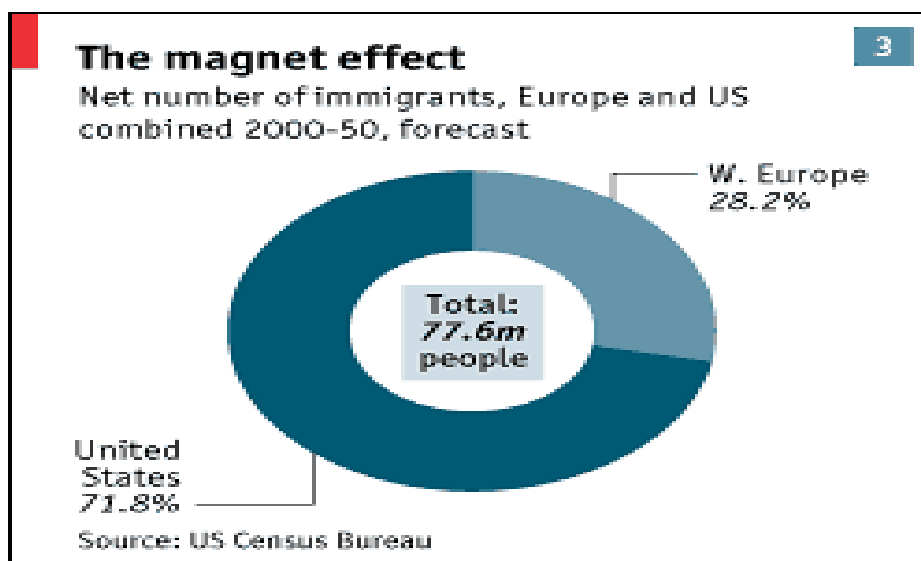


Figure 3. Forecast of Immigration to the United States and Europe, 2000-2050.²²

The Economist article goes on to identify yet another area that is pertinent to discussions about the United States maintaining the dominant global position. Since the end of the

²² Economist Magazine, *Demography and the West*, 24 August 2002 on line edition, URL: http://www.economist.com/displayStory.cfm?Story_id=1291056, accessed 02 January 2003.

cold war, America has spent a greater percent of GDP on defense than Europe, while Europe has spent more on social programs than the United States has. In fact, the United States spends about twice as much on defense as the European Union combined (\$295 billion compared to \$153 billion in 2000). While European nations have promised to spend a greater percent of GDP on their militaries, there has been little follow through. In the years ahead it will be increasingly difficult for Europeans to increase defense spending while they are being forced by demographics to spend more of the GDP on an aging population.²³

This greater spending by the United States on defense was not always so. In 1900, the United States spent 1.02 percent of Gross Domestic Product (GDP) on national defense, compared with 3.3 percent in 2000.²⁴ Mahan spoke of the need to maintain a military at least capable of holding out until the additional forces necessary to overcome the enemy could be procured, equipped, and trained. Mahan was not calling for a huge standing military but rather just one sufficient to prevent the enemy from defeating the nation until the additional forces became available. In order to accomplish this, the United States needed economic strength (brought about by an industrious people and consistently supportive governmental policies) to be

²³ "Demography and the West", Special Report, *Economist Magazine*, August 24th 2002, 20-22.

²⁴ Bill Ahern, *Government Spending = Nearly One-Third U.S. Economy*, URL: <http://www.heartland.org/Article.cfm?artID=387>, accessed on line 21 April 2003.

able to rapidly produce and equip the additional forces during times of crises.²⁵

The fact that the United States did not spend a large percentage of GDP on the military was true during the late 19th century and continued until the Second World War. Defense spending as a percent of GDP held relatively steady around 1 percent until 1931 (with the exception of World War One), and then increased to around 1.5 percent during the 1930's. During World War Two, defense spending as a percent of GDP climbed to a high to 36.08 percent in 1945 and then declined to a range of between seven and ten percent until the end of the Vietnam war. Defense spending as a percent of GDP declined to between 5 and 6 percent during the 1970's and 1980's, and fell to between 3 and 5 percent during the 1990's, and stood at 3.3 percent in 2000.²⁶ Since the terrorist attacks on September 11th 2001, defense spending has again increased.

During times of war the United States has demonstrated the industrial capability to expand the military into a victorious power. This occurred during World War One, World War Two, and the Korean Conflict. It has only been since the beginning of World War Two that the United States has been willing to spend a

²⁵ Mahan, *The Influence of Sea Power Upon History 1660-1783*, 48-50.

²⁶ Bill Ahern.

greater portion of its GDP to maintain a larger standing military.

IX. PRINCIPLE # 5: NATIONAL CHARACTER

When considering national character, Mahan was interested in how a nation promoted industry and trade, and whether it was willing to invest in those endeavors. Mahan focused on the character of the people of Spain and Portugal, and compared them with England and Holland. Mahan examined the character of these nations and then looked at how it manifested itself in the way that they administered their colonies. According to Mahan, Spain and Portugal were interested only in exploiting the gold and silver from the colonies and were not at all interested in developing their colonies or in the welfare of their colonial subjects. In contrast, England and Holland sent abroad immigrants, businessmen, traders, producers, and negotiators, who sought riches not by the sword but by labor.²⁷

This outlook on the importance of national character, and how it affects the nations strategic potential, reflects favorably on the United States ability to maintain its current strategic position. The United States' has pursued commercial interests around the world, and has been the main proponent of

²⁷ Mahan , *The Influence of Sea Power Upon History 1660-1783*, 50-58.

international trade liberalization. These policies have been the driving force behind the rise of the United States to the position of the sole super power. The continued application of these policies bodes well for the future strategic position of the United States.

X. PRINCIPLE # 6: CHARACTER OF THE GOVERNMENT

When considering the character of the government, Mahan addressed the government's influence, first in peace, and then in war. In peace, government policies can either favor or hinder the growth of its industries. In war, the influence of the government is most strongly felt through a navy of a size commensurate with the size of shipping and economy.²⁸ Of course, when war breaks out it may be too late to try to build a navy of sufficient size. Its peacetime size should be sufficient to halt any aggressor and to supply a good foundation for wartime expansion on which to build and defeat the enemy. While Mahan focused on the navy, the character of the government affects all components of military and national power.

As evidenced by the global economic position of the United States, the government has implemented policies that have encouraged the economic growth of the nation and has maintained

²⁸ Mahan, *The Influence of Sea Power Upon History 1660-1783*, 82-83.

a military of sufficient size and capability to facilitate the growth of the nation and secure its strategic position.

Continued application of these favorable policies will ensure continued global dominance by the United States.

The following pages will address how Mahan's principles apply to Sea Power, Air Power, Space Power, Information Dominance, and the National Security Strategy of the United States today.

For the purposes of this paper I will combine geographical position, physical conformation, and extent of territory into one category "geography". Likewise, I will combine population and character of people into one category "people". I will leave character of the government in a category by itself.

XI. SEA POWER

Many have tried to define sea power, but most attempts have resulted in unwieldy definitions. These definitions have included such things as ensuring access of one's own military and merchant trade to the sea, and denying an enemy's military and merchant trade access to the sea. Mahan's definition, which takes up three pages, includes trade and the protection thereof by the navy. My definition of sea power, which I believe to be more concise and better suited to this discussion, is "a country having global power or influence on the sea". Using this

definition, there may be more than one country that exercises sea power at any one time. During the height of the Cold War, the Soviet Navy and the United States Navy both embodied this definition of sea power. Today, however, the United States is the only country meeting the criteria established by this definition.

Admiral Vern Clark, the current Chief of Naval Operations has recently announced his vision of sea power, termed Sea Power 21. Sea Power 21 has three components: Sea Strike (Projecting Precise and Persistent Offensive Power); Sea Shield (Projecting Global Defensive Assurance); and Sea Basing (Projecting Joint Operational Independence by secure sovereign platforms operating in the maritime domain).²⁹ Sea Power 21 as envisioned will provide the United States with enhanced sea power capabilities.

How do Mahan's principles apply to Sea Power in the 21st century? Let us look at each in some detail.

A. GEOGRAPHY.

The United States is well situated globally (in terms of geography) to project Sea Power. The United States has many ports in the 50 states and overseas possessions. In addition, the United States Navy operates from bases in Iceland, Spain,

²⁹ Vern Clark, Admiral, USN, "Sea Power 21", *Proceedings*, October 2002, 32-41.

Italy, Greece, Japan, and the Indian Ocean. Many U. S. allies permit co-usage of additional ports and bases (subject to negotiation) during times of crisis. The Sea Basing component of Sea Power 21 will enhance the afloat positioning of joint assets and provide pre-positioned warfighting capabilities for immediate employment. Sea Basing will provide the nation with additional flexibility, allowing the United States to fight a war against a nation when neighbors refuse our forces access to their bases.³⁰

B. PEOPLE.

The United States continues to be able to provide the Navy with an adequate number of people who are sufficiently educated. The all-volunteer force has been in place for three decades, and over the last several years the Navy has been able to meet all recruiting goals.

Currently there is talk in political circles of bringing back the draft, but this is solely political posturing. Militarily there is no requirement to do so and to do so would probably be counter-productive.

Overall education levels have risen substantially in the past 100 years, and this has provided the Navy with an educated

³⁰Vern Clark.

work force capable of maintaining and operating sophisticated systems. The all-volunteer force has also provided the Navy with personnel that are better motivated and have fewer disciplinary problems than the conscription force of the 1960's and 1970's.

The United States currently has the preeminent navy in the world, and the Navy has not had any major difficulty in manning its ships with qualified personnel. Shipyard workers in the United States produce sophisticated ships with advanced electronics and weapons systems with relative ease.

The population of the United States, the number of people willing to work in maritime industry, the number willing to go to sea, education levels, and the all-volunteer force all bode well for Sea Power in the United States. In addition, no potential problems are looming on the horizon that cannot be overcome with relative ease.

As previously mentioned in the section on national character, Mahan's main concern was how a nation promoted industry and trade. The United States remains the world leader in seeking to promote a global reduction in trade barriers. The United States concentration on production and trade has resulted in the largest economy in the world. This large economy is well

placed to be able to continue to maintain the United States as the sole country with truly global Sea Power.

C. GOVERNMENT

The United States government supports economic growth and military strength. Taxes are kept relatively low and interference in business affairs is avoided if possible. In addition, the United States spends about three percent of GDP on defense, or about \$364 billion per year. This compares favorably with the European Union, which spends about \$153 billion.³¹ Continued government policies of low taxes and minimal interference in business will support future economic growth. Future economic strength buttressed by a robust and stable sea power structure guarantees the status of the sole super power.

There are, however, areas for concern. The rate of ship construction is not sufficient to maintain the Navy at its current strength. The United States Navy has proposed a construction rate that will reverse the decline and allow for a

³¹ "Demography and the West", Special Report, *Economist Magazine*, August 24th 2002, 22.

modest increase in ships over the coming decade. It remains to be seen if Congress will fund this proposal.

The government will always need to be vigilant and aware of the strengths and capabilities of other regional powers. China in particular comes to mind. Should the United States see that in the future the navy of another regional power is growing large enough to threaten the United States Navy, additional resources should be dedicated to the navy.

XII. SPACE DOMINANCE

Space dominance is critical to United States military operations. The 1991 Gulf War demonstrated the importance of space to the United States military. U.S. space systems assured effective command and control of deployed forces, provided missile alert warnings, allowed forces to navigate through barren terrain, provided information for weather forecasts, and provided accurate indications of enemy troop movements.

The United States military reliance on space-based assets includes satellites for worldwide communications, navigation, attack warning, meteorology, treaty monitoring, and various forms of surveillance. Since 1981, U.S. military space funding

has exceeded that of civil space funding.³² The use of space for military purposes will continue to increase in the foreseeable future due to the ever increasing need for command, control and intelligence systems.

Control of space in many ways resembles sea control and involves offensive and defensive military operations aimed at ensuring the freedom to operate in space, while denying that freedom to a potential enemy. Various systems have been tested or are being developed for space control, including Anti-Satellite (ASAT) weapons and Ballistic Missile Defense weapons (BMD).³³

While the United States does not currently possess any satellites with the capability to deploy offensive weapons (either against targets in space or targets on earth) the advantage of such weapons is readily apparent. Space-based weapons would contribute to any war effort and also serve as a deterrent during times of peace. This will become an area of growth for United States space assets if a decision is made to deploy weapons in space.

While the United States dominates in the military use of space, many other nations have space-based systems and are seeking to increase their capabilities. Russia has many of the

³²*International Military and Defense Encyclopedia*, Volume 5, under "space". (Washington: Brassery's U.S. Inc/Division of Maxwell Macmillan, 1993) 2488.

³³*International Military and Defense Encyclopedia*, "space," 2499.

systems remaining from the Soviet Union, and maintains the expertise to confront the United States in space. Other regional powers including India, China, Brazil, Japan, France, and Israel are active in space. China is also in the process of attempting to put a man in space, and if successful, will be the third country to do so behind Russia and the United States. Many others, including North Korea, are seeking space-based capabilities.

With success in space becoming a precondition for success on the battlefield, and with the continued development of ASAT and BMD weapons, the importance of space will continue to grow. If space-based weapons are fielded, space and space-based systems will assume the same importance that skies and air forces assumed in the twentieth century. The United States is well positioned to continue to dominate in space.³⁴

A. GEOGRAPHY.

The United States' geographic position lends itself favorably to the pursuit of space activities. The launch location at Cape Kennedy is situated to allow the launch of manned and unmanned rockets to leave from land and then immediately proceed out over the water, preventing any danger to

³⁴ *International Military and Defense Encyclopedia*, "space," 2501.

life or property. Space-related facilities are located in Florida and California, states with generally mild climates enhancing their utility for space launch and recovery. In addition, the United States has access to vast areas of the Pacific for research and development of weapon systems.

The United States is not the only country with geography that supports space operations. China, Russia, and Brazil all have expansive countries, and France has possessions in the Pacific Ocean that support space launch and recovery.

B. PEOPLE

The United States continues to provide the nation with an adequate number of scientists and engineers who maintain a formidable space program. NASA and the United States military cooperate in space endeavors. The United States military supplies NASA with pilots sufficiently trained and physically capable of becoming astronauts, while NASA supplies the nation with a civilian space program.

In addition, the National Reconnaissance Office provides the nation with satellites that are technically advanced and able to perform a wide variety of surveillance capabilities. The population of the United States and the number of people willing

to work in space-related industries bode well for space power in the United States.

As previously mentioned in the section on national character, Mahan's main concern was how a nation promotes industry and trade. The United States' concentration on production and trade has resulted in the largest economy in the world. This has allowed the United States to become very active in space, not only in terms of quality, but also in terms of quantity. This large economy is well placed to continue to maintain the United States as the world leader in space and space related industries.

C. GOVERNMENT

The United States government implements policies that support economic growth and military strength. In the future, these policies will ensure the United States status as a world leader in space and its related industries.

Over the past few years there appears to be a willingness by the United States government to consider in greater detail the military aspects of space. While the United States has used space for military communications and surveillance, there has been reluctance to station weapons in space. With the current administrations willingness to pursue weapons designed to defend

the United States from ballistic missile attack, consideration is being given to placing weapons in space. If they are in fact deployed, the importance of space to the military will increase dramatically.

XIII. AIRPOWER

According to the International Military and Defense Encyclopedia, airpower is defined as "a nation's ability to exploit the air for national security purposes" and further goes on to say that some believe that the definition of airpower should be "expanded to include the total aviation community, both military and civilian".³⁵ Using either definition, the United States stands at the forefront of global aviation.

The United States Air Force is the preeminent air force in the world, and all of the other components (Army, Navy, Marines, Coast Guard) maintain an aviation branch. The success in the air of United States forces during the 1991 Gulf War validated the supremacy of United States aviation.

Many of the fixed and rotary wing aircraft produced in the United States are purchased by a wide variety of countries to fulfill their aviation needs, adding to the economic output of

³⁵ *International Military and Defense Encyclopedia*, Volume 1, under "air power". (Washington: Brassey's U.S. Inc/Division of Maxwell Macmillan, 1993), 77.

the United States. The United States remains the only nation building and using aircraft with stealth technology and is in various phases of developing, testing, and fielding new aircraft, including the F-22 RAPTOR, F-35 JOINT STRIKE FIGHTER, and the V-22 OSPREY (with its revolutionary tiltrotor technology).

The United States Navy also has a significant aviation capability based on 12 aircraft carriers and associated air wings. During times of crisis, these aircraft carriers provide the nation with a very flexible way to apply national power. During DESERT STORM, six aircraft carriers were stationed in the Red Sea and Arabian Gulf, providing a large portion of the total sorties flown by coalition assets. Aircraft carriers also provide the flexibility of operating in regions where the United States does not have any bases, and due to political considerations, no landing/operating rights can be negotiated.

In addition to this superiority in military aviation, the United States is a world leader in civil aviation. The Seattle, Washington-based Boeing corporation was the world leader in producing airliners during the twentieth century and today shares the global market with only one company, the European Airbus corporation. According to a 2001 survey of air travel, the United States government has been the driving force behind the "open skies" agreements, which have opened up international

aviation. These "open skies" agreements are a series of bilateral agreements between the United States and another country allowing any airline in the two countries to fly between the two countries with minimal restrictions. Today, United States airlines account for more than a third of the world aviation market.³⁶

A. GEOGRAPHY.

The geography of the United States is one that enhances air power. The continental United States is a great distance from any potential adversary, providing a defensive shield that few nations have the capability of penetrating. The nations that do possess aircraft capable of reaching the United States in time of war would find their aircraft detected and engaged by the time they reached our shores. In addition to overseas territories, the United States has bases worldwide from which to counter any potential adversary.

While the geography of the United States protects the nation from attack by aircraft, it does not protect the nation from intercontinental ballistic missiles launched from Russia, China, or North Korea.

³⁶ Economist Magazine, 2001 Survey of Air Travel, 8 March 2001 on line edition, URL: http://www.economist.com/displayStory.cfm?Story_id=525723, accessed 02 January 2003.

B. PEOPLE

The United States continues to be able to provide the nation with an adequate number of scientists and engineers to be able to maintain the world's preeminent air force. Not only does the nation supply the United States Air Force with adequate numbers of recruits, it also supplies it with scientists and engineers capable of building some of the most sophisticated fighters and bombers in the world.

In addition, the civilian aircraft industry continues to supply the nation and many overseas countries with competitive aircraft. The population of the United States and the number of people willing to work in both the military and civilian aircraft-related industries indicate that the future of air power in the United States is bright.

As previously mentioned, Mahan was concerned with how a nation promotes industry and trade. The United States' economy speaks for itself and has resulted in a nation with significant air power, both in civilian and military terms. This large economy is well placed to be able to continue to maintain the United States as the world leader in civilian and military aircraft related industries.

C. GOVERNMENT

The United States government implements policies that support the airline industry and military aviation. As previously mentioned, the United States spends three percent of GDP on defense, and a large portion of the defense budget is spent on the United States Air Force and on the aviation branches of the Navy, Army, and Marines. This generous funding allows the United States Air Force and sister branches to be the preeminent air forces in the world.

In the United States, airlines have always been privately owned, giving them an incentive to be competitive and profitable. Most other nations are following the example of the United States and are privatizing their airlines.

Airline deregulation in the United States has resulted in a fiercely competitive industry, benefiting the consumer. These policies, if continued, should allow the United States to maintain its status as the world leader in air power and in aircraft industries.

XIV. INFORMATION DOMINANCE

According to a paper prepared by Dr. Martin C. Libicki for the National Defense University Institute for National Strategic Studies,

Information dominance may be defined as superiority in the generation, manipulation, and use of information sufficient to afford its possessors military dominance. It has three sources: Command and control that permits everyone to know where they (and their cohorts) are in the battlespace, and enables them to execute operations when and as quickly as necessary; Intelligence that ranges from knowing the enemy's dispositions to knowing the location of enemy assets in real-time with sufficient precision for a one-shot kill; Information warfare that confounds enemy information systems at various points (sensors, communications, processing, and command), while protecting one's own.³⁷

As the driving force behind the development of such information systems as the Internet, the United States is the world leader in information systems. United States military forces (already the recognized world leader in command and control) continue the relentless pursuit for better command and control systems.

The United States military has at its disposal a wide array of intelligence systems that allow its military forces to access global information in a short

³⁷ Martin C. Libicki, "Information Dominance" prepared for the National Defense University, Institute for National Strategic Studies, Strategic Forum number 132, dated November 1997, HTTP: <http://www.ndu.edu/inss/strforum/forum132.html>, accessed 02 January 2003.

period of time. Here again, the United States is the recognized world leader in intelligence and intelligence systems, many of which are space-based. When United States forces deploy as part of a coalition (which has often been the case in recent years), allied forces rely extensively on intelligence provided by United States forces.

Information warfare continues to be a growth industry in the United States military, and forces are able to control the information environment with relative ease.

While the United States is the global leader in information warfare and is able to dominate the information environment, many other nations possess limited capabilities, and the vulnerability of many of our vital systems remains suspect.

Interoperability is increasingly becoming a problem when United States forces deploy abroad as a part of a coalition. While the United States continues to upgrade command and control, intelligence, and information warfare systems, our Allies are not upgrading their systems at the same pace. This causes an increasing disparity between the capabilities of the United States and Allied forces.

A. GEOGRAPHY

While geography tends to have little to do with information dominance, the United States does influence Europe through NATO and the Atlantic link. In addition, the United States does influence Asian nations through a number of bilateral relationships and the Pacific link. These allow the media of the United States to have varying degrees of access to local markets.

B. PEOPLE

The United States continues to be able to provide the information industry with an adequate number of people who are sufficiently educated. In addition, the United States has been willing over the past few years to allow people with needed skills in the information industry to immigrate into the United States. The growing population of the United States and the number of people willing to work in the information industry all bode well for information dominance by the United States.

As previously mentioned in the section on national character as defined by Mahan, the main concern here is how a nation promotes industry and trade. The United States remains the world leader in seeking to promote a global reduction in

trade barriers. This emphasis on trade has resulted in the largest economy in the world. Over the last decade, the United States has emerged as the global leader in information technology. This position as the global leader allows the United States to develop and use commercial and military information systems that are the best in the world. This gives industries and commerce in the United States a global competitive edge and gives the United States a military edge in the areas of communications, intelligence, command and control, and psychological operations. Together, these areas amount to information dominance.

C. GOVERNMENT

The United States Government implements policies supportive of both economic growth and military strength. The Internet was developed by the United States military through the funding of the Defense Advanced Research Projects Agency (DARPA)³⁸. DARPA developed the ARPANET in 1969, which expanded over time to become the Internet.³⁹ Supportive Governmental policies in the United States allow business to develop, manufacture and sell information systems worldwide. As a result, the United States

³⁸The Advanced Research Projects Agency (ARPA) was renamed the Defense Advanced Research Projects Agency (DARPA) in 1971, changed its name back to ARPA in 1993, and subsequently changed its name back to DARPA in 1996

³⁹ Eyewitness to the 20th Century (Washington D.C.: National Geographic Society, 2001), 371.

is the recognized world leader in commercial and military Information Technology.

If the United States Government continues its supportive policies, information dominance should be assured, and the United States should maintain its status as the sole super power.

XV. THE NATIONAL SECURITY STRATEGY

On 17 September 2002, President George W. Bush signed a new National Security Strategy document. This new national security strategy articulated that its aim was to help make the world not just safer but better. To achieve that aim, the new strategy outlined the following goals: political and economic freedom, peaceful relations with other states, and respect for human dignity. To meet these goals, the new strategy outlined the following endeavors that the United States will undertake:

1. Champion aspirations for human dignity.
2. Strengthen alliances to defeat global terrorism and work to prevent attacks against our friends.
3. Work with others to defuse regional conflicts.
4. Prevent our enemies from threatening us, our allies, and our friends, with weapons of mass destruction.

5. Ignite a new era of global economic growth through free markets and free trade.
6. Expand the circle of development by opening societies and building the infrastructure of democracy.
7. Develop agendas for cooperative action with other main centers of global power.
8. Transform America's national security institutions to meet the challenges and opportunities of the twenty-first century.⁴⁰

How do the three requirements and six principles as outlined by Mahan apply to this National Security Strategy? The principles of Mahan are relevant to this new National Security Strategy because together the principles have placed the United States in a position of global dominance. This position has allowed the United States to not only set the example in respecting human dignity for the rest of the world, but also to be able to influence through military, economic and political pressure, those nations that do not show the same respect for human dignity.

This position of global dominance has also allowed the United States to be able to influence through military, economic and political pressure those nations that are reluctant to support the war on terrorism.

⁴⁰ Document *The National Security Strategy of the United States, September 2002.*

At the same time, this position of global dominance has allowed the United States to be able to work with nations around the globe to defuse regional conflicts, and to prevent our enemies from threatening us, and our allies with weapons of mass destruction. It should be noted that this is not a completed action as evidenced by the current situation in North Korea, but is rather an ongoing process.

The United States achieved its position of global power by concentrating on free enterprise and free trade. These policies resulted in an era of unprecedented growth around the world. The continuation of these policies, and the continued insistence on the adoption of these same policies by other nations should go a long way towards igniting a new era of global economic growth through free markets and free trade.

XVI. CONCLUSION

Alfred T. Mahan outlined three requirements (1. production, 2. shipping and 3. colonies) deemed necessary for the success of a nation, and six principal conditions (1. geographical position, 2. physical conformation, 3. extent of territory, 4. number of population, 5. character of the people, and 6. character of the government) that affect sea power.

Mahan has often been criticized for his focus on sea power to the exclusion of all other forms of national power. The criticisms of Mahan's sole focus on sea power are valid, but it is important to understand that the requirements for the success of a nation and the principles upon which Mahan based his writings on Sea Power are just as valid today as they were in the late 19th century. As a theorist of naval power, his often-derided writings remain relevant. In fact, the global dominance of the United States today is a direct result of our adherence to his principles.

Mahan, with his focus on history, was not able to envision air power, space power, and information dominance that were to become critical elements of national power. He was, however, an astute scholar, and the three requirements deemed necessary for the success of a nation and the principles that he outlined as requirements for sea power are relevant to air power, space power, and information dominance.

The current position of the United States as the sole global super power is the direct result of adherence to his principles, and adherence to these principles remains necessary for the United States to maintain and increase its global dominance.

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