

# Dominance on the High Seas of Space

Can The United States Afford To Surrender In The Next  
Conflict To Another Nation's Dominance In Space

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Themistocles, an Athenian politician and naval strategist of early Greece, was an astute observer who wrote<sup>1</sup> that *He who commands the sea has command of everything*. Themistocles was the creator of Athenian sea power and the chief savior of Greece from being conquered by the Persians. The navy he designed defeated the Persian fleet in the Battle of Salamis in 480BC, thus saving Athens from subjugation. Victory by the fleet that Themistocles' fashioned was all but foreordained due to his naval brilliance.<sup>2</sup>

In those ancient times, it must be noted that the fastest means of travel was on the seas, since ships outdistanced all other methods of travel. Over the centuries, we have seen an upward progression in the speed of travel from ships on the sea to railroads and highways on the surface up through airplanes in the atmosphere and, in this *fin de siecle*, to the flashing speed of rockets in space. Consequently, while giving due respect to Themistocles, it must be concluded that we have presently reached that era in which:

***Whoever commands in space has command of everything.***

The United States and our Air Force would do well to accept that statement as *a basic doctrinal verity* in any conflict. Note that the Gulf War played out to be an excellent, though partial, proving ground for that axiom. Our dominance there in *passive* space tools helped to provide the US and friendly fighting forces with a commanding position over hostile terrestrial forces. After a period of decisive air strikes and only one hundred hours of ground warfare, the stated United Nations' goals were achieved. Due in great part to these superior United States advantages in space, victory in the conflict was celebrated.

We must initiate the struggle for the creation and operation by the Air Force of those aerospace forces capable in wartime of achieving *a commanding presence on the high seas of space*. When realized, that commanding position would permit the protection of valuable U.S. space-traveling assets from electronic tampering, predators, pirates, and hostile nations. "Spacefaring nations would prefer to see the international community adopt a *Live-and-Let-Live* stance on the use of space, building on the proven *Law of the Sea* model. All nations can freely use the open seas, but shipment of goods along sea lanes can be protected during conflicts."<sup>3</sup> It is believed that the same philosophy should apply to space.

The world has reached the situation in which many nations and businesses have extensive commercial capabilities in space for television and communications. Aggressive acts by unprincipled nations or terrorists will be a likely prospect. Industrial espionage on space secrets of a competing firm or military spying on the automated or manned space stations of our nation could become common. Our United States corporations will expect Air Force aerospace forces to

provide security for all their peaceful space ventures. Such expectations would parallel our ocean naval forces providing protection for our merchantmen, tankers and fishing fleets, or as the cavalry in our early West escorted and defended the prairie schooners venturing into our unpopulated frontiers.<sup>4</sup>

In order to establish national policy and military doctrine, the United States would do well to make these declarations:

**As to United States National Policy:**

It shall be the policy of the United States that freedom of passage on the high seas of space is considered an inalienable right of all nations.

**As to United States Air Force Doctrine:**

*In every conflict, Air Force forces shall be prepared to achieve early dominance in space so as to guarantee freedom of passage for United States commercial ventures and for all United States' governmental and military assets.*

**DISCUSSION**

Question: Could it possibly occur that the United States, presently one of the world's most powerful nations on the sea, on the land, in the air and currently masterful in space, would ever *fail to strive for wartime dominance* in space? The alternative---that is to *fail* to create and exercise US Air Force commanding forces in space, would in effect, be to *abandon* our commercial, communication, reconnaissance, transportation and military space assets to potential or even certain loss. By such a failure to act, would not the U.S. be engaging in *surrender* before the fact? Can we in the U.S. afford to turn our heads and permit a form of military *laissez faire* to be our guiding doctrine? No! Even any *middle or compromise* solution taken by the United States to protect our space assets can hardly be envisioned as approaching success against direct hostile interference.

The medium of aerospace is the combat operating environment of our Air Force, just as surely as the ground-based forces belong to the Army and the sea-borne forces belong to the Navy. The Aerospace Environment is defined in Air Force Manual 1-1, March 1992, in this way: "Aerospace consists of the entire expanse above the earth's surface." I believe that the US Air Force should be charged promptly by the Congress and the Executive Branch with the mission of achieving and exercising *wartime dominance* on the high seas of space. Upon hostile foreign challenge of U.S. space assets to conclude otherwise, or to attempt to find some compromise in a lesser solution, *would border on sheer capitulation*.

**ROLE OF THE AIR FORCE IN SPACE:**

The considered policy of the United States, as laid out in the basic doctrine of the Department of Defense by the Joint Chiefs of Staff, calls for all our fighting forces to strive for supremacy in battle as a guiding premise. The U.S. Air Force has duly published such doctrine<sup>5</sup> stressing that

*Air Supremacy* must be achieved early in any conflict. Presently, Air Supremacy is often referred to by some flag officers as *Air Dominance*. Accomplishing that state of supremacy or dominance in a conflict is directed to serve as the cornerstone of success in any campaign---be it air, ground or sea. Because AFM1-1 considers that "The aerospace environment can be most fully exploited when considered as an indivisible whole," the term *air dominance* leads across the continuum to the expression *Space Dominance*.

With the United States moving more comprehensively into space, such Air Force space-dominance, when achieved in a conflict, will show itself to be the critical turning point for our aerospace forces *and surface forces* to realize success. There may even exist the potential for the Air Force, solely with Air and Space Dominance, to accomplish early resolution of some limited conflicts to the beneficial advantage of the United States. Hostile nations, when encountering such manifest United States Air Force dominance, may realize that they face early defeat, because they have been denied the proven protection of that overarching, war-winning potential.

### **UNDERSTANDING WARTIME DOMINANCE IN SPACE:**

The necessity for embracing such a wartime doctrine will undoubtedly not be fully grasped nor readily accepted by everyone. General Howell M. Estes, 3rd stated recently, "Space, to a large extent, is an unknown to many throughout our country and to many leaders in our government who are being asked to make critical decisions that will chart the course of space for the United States---both inside and outside the military." General Estes is the commander of the U.S. Air Force's rapidly growing Space Command.<sup>6</sup>

The U.S. citizenry's unswerving majority belief in these doctrinal and policy matters must be fostered through proper education of the populace implemented by responsible professionals, policy-makers and executives. To that very objective, this author has assayed the completion of a novel as one small contribution. That novel<sup>7</sup> is designed to place in the reading public's mind the seeds of understanding about the prerequisite that our Air Force effect wartime dominance in space. Certainly, other more comprehensive exploitation of electronic and print media are certain to be required so as to achieve appropriate and widespread public belief in, and support of, these guiding policies and doctrines. Further, with full understanding of space dominance by the Air Force as a vehicle for preserving freedom of passage, United States citizenry will demand that Congress should fully fund the requisite forces and infrastructure within the Air Force.

### **OF WHAT DOES DOMINANCE IN SPACE CONSIST?**

To ask ourselves what the achieving of wartime dominance in space would consist is critically important to those leaders in Congress and the Air Force eventually charged with that responsibility. The simple and obvious answer would be that such important aerospace-forces fighting-tasks would require powerful weapons carried by special vessels attuned to maneuver in space so as to defeat aggressors. One might presume that the first to be considered would be manned weapon systems created for combat in space, much as atmospheric F-15 or F-22 fighters are below. The Boeing 747 armed with a powerfully destructive laser weapon for space defense, already in the process of construction, may instantly be called to mind as well. *But dominance in space is more than just manned fighting vehicles or space weapons.* It is really drawn from a

wide assembly of contributors. More to the point, it is the sum of manned and unmanned weapons *plus* other space tools and related factors of a passive nature. We must consider these.

### **PASSIVE SPACE ASSETS.**

Looking back at the Gulf War gives us a clue to these vital systems. Fighting space weapons were all but absent in that war. Most agree, however, that those space tools that were in orbit, or were placed in orbit on demand, had a profound influence on the successful prosecution of the war. Those orbital satellites capable of regular and timely acquisition of images or photographs of the disposition of Iraqi war assets were of enormous value. Among data other than Order of Battle, our space assets obtained weather information, communications-intercepts, transmission of logistical formalities, relay of command and control actions and other data. Much of it was handled on an intercontinental basis.

It became apparent that there existed some not unexpected difficulties within gathering establishments in directing such intelligence to proper combat commands. As well, anecdotal evidence tells us that deficiencies occurred in achieving in-time delivery. Suffering some delays were those officers commanding the daily wartime strike and aerial delivery missions, terrestrial maneuver of ground and naval forces and others in staff and command most able to exploit the knowledge to advantage in combat. What cannot be ignored is that there existed some unthinkable exercising of tightly-held parochial "turf" which kept *some* space-originated intelligence products from reaching combat commanders. In the main however, most such data was well directed, promptly transmitted and successfully employed as confirmed by the ultimately successful campaign.

*Clearly stated space policy and doctrine should help remedy any deficiencies that may occur in the future.*

In the Gulf War, it can be summarized that command, communications, reconnaissance, intelligence-gathering and logistical traffic, *moving in and through space*, were of inestimable value. Most agree that all of these space assets were extremely useful in reaching that commanding position, *that Space Dominance*, in the prosecution of the conflict. Yet when viewed as contributing to supremacy or dominance, not one of enumerated space assets can be classified as *war-fighting* hardware. No *manned* space weapons joined the battle and our *unmanned* space assets neither carried nor brought fire-power to bear on hostile forces. Even though of a *passive character*, our Gulf War space-borne assets contributed heavily to our dominance in space and the final victory, each in its own singular way.

### **MANNED AIR FORCE SPACE SYSTEMS FOR COMBAT:**

Revised doctrine recommended herein will require Congress to adequately fund, and the Air Force to create, newly-constituted and unique space forces. Those forces must add *manned* space-borne fighting vehicles and *unmanned* earth-based and space-borne weapons able to contribute positively to *Space Dominance*. The vessels and the crews or operators must be made ready and be prepared to respond when freedom of passage of our United States space assets is abridged by hostile force. The required *manned* fighting space-craft must be endowed with

special environmental characteristics. Those attributes, among others, will be space-capable propulsions, precise navigation gear, innovative weapons and deft controls to maneuver properly and bring their armament to bear on violators or combatants. Unique Air Force space-borne and earth-located infrastructures must be funded by the Congress and constructed in tandem with weapons. Proper command and control establishments must be created for the essential detection and direction as well as launch and recovery.

Problem: At the present time, space ventures requiring onboard human guidance are vested not in the Air Force, but rather in a civilian space agency, the National Air and Space Administration.

*But NASA is not constituted to operate as a war-fighting institution.*

With the early adoption of the above-cited National Policy regarding space, as well as the recommended published doctrine of the Air Force, we can move ahead. Design, construction and assembly of components as well as the specialized training of Air Force pilots and operators for United States space forces should begin promptly. Long lead times involved in the conception, design, construction, proving and implementing are the mark of the times.

To this reality, General Estes of the U.S. Air Force Space Command reminds us that,<sup>8</sup> "We will never become a space and air force if we do not begin to invest greater sums in space." To the Air Force Association, he said, "Our actions regarding space over these next few years will set the course for the next quarter century, and I propose we had better choose carefully." It is of intense importance that our lawmakers in Congress become truly knowledgeable and act with resolve to allocate tasks and funding as General Estes urges. Only then can the Air Force expect to achieve Space Dominance believed to be required in time of space challenges or terrestrial conflict.

## **ROBUST NATIONAL ECONOMY.**

Dominance in the space regime in wartime can hardly be accomplished by a nation-state that does not have a visionary leadership, skilled technicians, a stable society and a monetarily-solid economy. The false conclusion must not be reached that the United States is the only nation that may find it prudent to aspire to wartime space dominance. We are not alone. Russia also is highly proficient in space technologies as well as manned and unmanned applications and could be competent. That country presently lacks a healthy financial basis due to its glacial transition to a market economy, but will recover. The Peoples Republic of China has a rapidly growing but occasionally stumbling space capability.

It is difficult to imagine a third-world country capable of realizing even the most rudimentary elements of space power, let alone reaching dominance. Space dominance for those nations would certainly seldom be an objective and rarely achieved.

On the other hand, many presently robust industrial nations have space-launch facilities with a base of manufacturing and a technical personnel pool. Those nations are capable of placing dangerous payloads in space to menace United States space-traveling assets, but only a few

might be expected to do so. Hard-to-detect techniques such as placing of space-mines, use of electromagnetic-pulse devices, killer-laser or particle-beam weapons and others, are among the weapons that such hostile industrial nations could bring to bear. Many nations can be brought to mind that harbor malice for the United States and this animosity could be expressed by disruptive actions against our space assets. Present and real in the news are those countries cottoning to known terrorists. Their future actions could do irreparable damage to U.S. space resources. Among surreptitious deeds, terrorists could disrupt radio-transmission of directive commands to space-borne assets---even though encrypted, critically alter positioning of satellites, counter with jamming the transmission and reception of space-earth communication and television relays, obstruct geo-stationary-orbit positioning and faculties, as well as other disastrous procedures. For the United States to counter these, as a minimum even today, radio traffic to and from space must feature agile-frequency modes or innovative encryption techniques.

### **RELATED FACTORS:**

The days of regular and frequent space voyages are upon us. No longer are space flights the sole ventures of governments. Commercial enterprises in space are becoming massive in dimension and greater in the size of invested capital. The risks are high, but with success the rewards could be staggering in size. On the high seas of space, voyagers and entrepreneurs have a right to feel confident that their country will provide appropriate protection for their vessels from the hazards of foreign intervention, acts of piracy, tampering, or other aggressive acts. Commercial assets as well as Department of Defense systems presently in orbit, or in transit through earth's neighboring space, may soon be subject to both overt and covert hostile acts, even in the absence of declared war.

Back in the early Seventies, few would have predicted the seizure of an obscure United States flag cargo ship and its civilian crew on the high seas off Indochina. Yet the *Mayaguez* became a *cause celebre*. Our national honor was challenged in international waters. The full resources of the United States armed forces were brought to bear on the situation by the President, himself, to protect our nation's commerce and defend the concept of *freedom of the seas*. In other years, a similar event involved the seizure in ocean waters of a United States Naval vessel, the *USS Pueblo*. Granted, the crew's mission was gathering intelligence data on North Korea. But the seizure in international waters of the ship and crew by North Korean forces was resoundingly protested by our government. Based on these incidents, we look to space.

Who can predict accurately when, or by whom, the first of such confrontations to *freedom of passage on the high seas of space* will occur? When one of our space-faring vessels in near-earth orbit is challenged by a foreign power, will the United States with its Air Force be prepared? Will we be able to direct appropriate, manned space vessels or unmanned space weapon systems to counter such hostile acts? Will we, on the other hand, be forced to submit to the *space dominance of a foreign power*, one that has prepared itself with proper doctrine and capable fighting forces? I submit that the United States cannot permit itself to be so dominated.

### **CONCLUSIONS:**

General Estes said<sup>9</sup> "In the decades to come, space power will accomplish many of the same functions that air power accomplishes today. Space power will encompass space superiority, space control, space surveillance missions, information superiority, and the list goes on. I envision a day when space power will also represent the ultimate in rapid global mobility and global precision attack."

Preserving the freedom to operate on the high seas of space is essential to the future well-being of all nations. Securing space for free travel and commerce to the benefit of all, ideally, should be the aim of all the nations of the world. But where unscrupulous nations or groups seek a special advantage that would threaten the space lanes, then responsible people and nations must act together to restore the freedom of space passage through strength and collective will or, in the last resort, by force of arms.<sup>10</sup>

The United States must have the forces and capability in-being for counterattack upon hostile challenge in space. Be it understood by all, that such United States forces will be used only when peaceful means have been exhausted and we must resort to armed response. When under such attack, the United States Air Force must be prepared with a well-defined space doctrine, peerless space-fighting personnel and with technologically-superior weapons along with supporting earth-systems to respond swiftly and decisively in attaining Space Dominance. With dominance achieved by the Air Force, the avenue is open to ultimately restore for the United States, as well as all nations, the *freedom of passage on the high seas of space*.

## NOTES

1. Cicero, *Ad Atticum*, X, 8, as obtained from *Familiar Quotations*, John Bartlett, 14th Edition, 1968, Little Brown and Company, Inc.
2. Encyclopaedia Britannica, Micropaedia Vol. IX
3. *Aviation Week & Space Technology*, 18 September 1995, page 60.
4. *Freedom of Passage on the High Seas of Space*, Richard Earl Hansen, Lt. Colonel, USAF, Retired, page 84, *Strategic Review*, Fall 1977. A comprehensive examination of the challenges to space freedoms and recommended responses.
5. Air Force Manual 1-1, Doctrine, March 1992.
6. *Aviation Week & Space Technology*, 1 December 1997, page 69, quoting General Howell M. Estes 3rd, commander of the U.S. Air Force Space Command.
7. The novel is *Check Six!*, a space fiction that envisions a hostile space-mine grappling a U.S. DOD satellite. The mine, awaiting fusing by radio from the ground, is discovered by Space Shuttle Astronauts sent to repair the "broken" DOD satellite. Author is Richard Earl Hansen, Available in its entirety on the *Internet* for on-line reading or as a download at URL: <<http://www.novelnovels.com>> Novelnovels, PO Box 1602, Murphys CA 95247-1602.

8. Op. Cit. Note 6.

9. Ibid.

10. Op. Cit. Note 4, page 91, paraphrased.

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