# \*\*SBMD 1AC\*\*

# 1AC – Inherency

**No system exists now that can counter threats posed by Ballistic missiles**

**Independent Working Group** (The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.2007(Collective report/study) “missile defense and the space relationship and the 21st century”2007 <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

So far, however, the United States has stopped short of put­ting these principles into practice. Rather, the missile defense system that has emerged since President Bush’s historic De­cember 2002 announcement of an “initial set” of missile de­fense capabilities provides extremely limited coverage, and no global capability. Instead, by the administration’s own ad­mission, it is intended as a limited defense against a small, rogue state threat scenario. Left unaddressed are the evolv­ing missile arsenals of – and potential missile threats from – strategic competitors such as Russia and China as well as terrorists launching short-range missiles such as *Scuds* from off-shore vessels.

**Missile Defense being cut now.**

**Bloomberg** **6/15**

(Roxana Tiron, 6/15/11, "Lockheed's Anti-Missile System Targeted for Cuts in U.S. Senate ", <http://www.bloomberg.com/news/2011-06-15/lockheed-s-anti-missile-system-targeted-for-cuts-in-u-s-senate.html> [Marcus]

U.S. senators are aiming to eliminate funding for a missile defense program being developed by [Lockheed Martin Corp. (LMT)](http://www.bloomberg.com/apps/quote?ticker=LMT:US) in collaboration with [Italy](http://topics.bloomberg.com/italy/) and [Germany](http://topics.bloomberg.com/germany/). Senator Mark Begich, Democrat of Alaska, and at least six other Democratic and Republican members of the [U.S. Senate](http://topics.bloomberg.com/u.s.-senate/) Armed Services Committee, will try to strike the Pentagon’s funding request for the Medium Extended Air Defense System, or Meads.

# 1AC – Rogue States

**No system exists now that can counter threats**

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**The US will face a missile threat by 2015.**

Brinton **Turner,** SpaceNews staff writer, **10**

SpaceNews, “GOP Pledges To Fully Fund Missile Defense”, 9/27/10, <http://spacenews.com/policy/100927-gop-pledges-fund-missile-defense.html> [Marcus]

Republican members of the U.S. House of Representatives on Sept. 23 unveiled a new “Pledge to America” policy agenda that includes freezing nonmilitary spending and restoring missile defense funding that it says is needed to protect the United States from a ballistic missile attack from Iran. “There is real concern that while the threat from Iranian intercontinental ballistic missiles could materialize as early as 2015, the government’s missile defense policy is not projected to cover the U.S. homeland until 2020,” the document states. “We will work to ensure critical funding is restored to protect the U.S. homeland and our allies from missile threats from rogue states such as Iran and North Korea.” The administration of U.S. President Barack Obama last year overhauled plans for defending European allies and deployed forces from ballistic missiles. Under the previous administration’s plan, ground-based interceptors were to be placed in Poland in 2013. Obama’s plan will be implemented in four phases, starting with deploying Aegis Ballistic Missile Defense ships to European waters as soon as 2011 to defend against short- and medium-range threats. A new Aegis interceptor capable of defeating ICBMs is not planned to be ready until 2020. With the most recent U.S. intelligence estimates stating that Iran could have an ICBM capability by 2015, House Republicans say the United States may face a five-year vulnerability to an Iranian ICBM.

**Iran will attack once they have the technology, and they acknowledge the backlash to doing so.**

Jack **Spencer**, Research Fellow, Nuclear Energy Policy, Thomas A. Roe Institute for Economic Policy Studies, **2K**

Heritage Foundation, “America's Vulnerability to a Different Nuclear Threat: An Electromagnetic Pulse”, 5/26/2000, <http://www.heritage.org/Research/Reports/2000/05/Americas-Vulnerability-to-a-Different-Nuclear-Threat> [Marcus]

Scenario #5: A rogue leader wants to attack the United States but evade retaliation. Iran, which the 1998 Commission to Assess the Ballistic Missile Threat to the United States (the Rumsfeld Commission) reported "has the technical capability and resources to demonstrate an ICBM-range ballistic missile...within five years of the decision to deploy," decides to take hostile action against the United States after developing an ICBM.7 It knows that a direct nuclear attack on the United States would result in the destruction of Tehran.8 It launches two missiles with nuclear warheads that detonate 250 miles above Illinois and Wyoming. The United States does not retaliate because no one is immediately killed. Not knowing whether Iran has other nuclear warheads, the United States decides to limit its response against Iran rather than risk a direct nuclear attack on a U.S. city.

**No time to wait – missile defense is key to stop growing threats**

**Independent Working Group** (The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.2007(Collective report/study) “missile defense and the space relationship and the 21st century”**2007** <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

Given this multiplicity of ballistic missile threats, the United States must deploy a missile defense that deters hostile states from developing or acquiring missile capabilities that could threaten the United States, our allies and coalition partners, and our forces deployed abroad. Furthermore, our missile defense R&D programs, together with planned deployments, must be sufficiently robust so as to dissuade would-be missile possessors from attempting to challenge the United States. We must deter future enemies from acquiring ballistic mis­siles; just as in the past we dissuaded them from developing strategic bombers because of our ability to overwhelm such systems. Finally, our missile defense must be capable of de­feating ballistic missiles, whatever their range and type, that could be launched against us. As we dissuade future potential possessors, we must rec­ognize that threats are increasing at a pace that no longer allows the luxury of long lead times within which a missile de­fense could be developed and deployed. Therefore, the United States must develop and deploy rapidly a missile defense with global reach, capable of coping with threats against the Unit­ed States and our forces and allies *from any direction*, while we attempt simultaneously to dissuade hostile actors from acquiring missiles through our ability to render such invest­ments a poor use of limited resources. Additionally, given the uncertainty in predicting where, when, and by whom missiles might be launched – and what their targets may be – there is a need for constant defenses capable of intercepting missiles irrespective of their geographic origin.

**Space NMD deters rogue states from launching ballistic missiles toward the US.**

Lorinda A.**Frederick**, Lieutenant Colonel in the Air Force Space Command, Masters in Advanced Air and Space Studies,**09** [Air & Space Power Journal, Volume 23, No. 3, “Deterrence and Space-Based Missile Defense”, Fall 2009, http://www.airpower.au.af.mil/airchronicles/apj/apj09

/fal09/frederick.html#frederick (Ghosh)]

Cooperation on missile defense initiatives could increase global stability. By banding together in coalitions, countries can deter war by repelling an attack against any member.52 States and rogue elements will not be able to strike surreptitiously if they know that the international community could quickly discern the origin of any launch and compute potential impact points. Attempts by a rogue element to destabilize the region through the attribution of attacks to a state may initially promote the rogue elements own agenda. However, data provided by missile defense and other sensors can refute such claims. The shared international ability to identify launch and impact points might deter states and rogue elements from launching in the first place. The more nations cooperate with each other, the more stable the world becomes. Policy makers need to invest in the development of many different capabilities, includingSBMD, to negate missiles in their boost phase and use the information gleaned from these developments to inform decisions. One approach involves bringing a system to the prototype stage for testing and accurately gauging its performance. This approach could let the United States invest in only a limited number of prototypes, thus deferring large-scale production to allow further research, development, and testing. These efforts could decrease the risk of failure during production and deployment.53 When the need arises, the United States should capitalize on preexisting prototypes as long as the industrial base could support rapid production. By funding R&D for SBMD, the UnitedStateswould ensure the viability of these technologies. The DOD cannot expect developments in commercial industry to be available for national security purposes. Competitive pressures force industry to fund near-term R&D programs and choose near-term survival over long-term possibilities.54Applied research into SBMD technologies would allow the UnitedStatesto gain more knowledge about boost-phase defenses. America will get as much R&D in SBMD technologies as it is willing to fund.

**Even if countries attack, Space NMD would destroy the missiles in boost phase Only SBLs can knock down missiles before they reach boost mode.**

Matthew **Mowthorpe**, writer for Air and Space Power Journal (Branch of Air Force Research Institute) **02**

Air and Space Power Journal, “The Revolution in Military Affairs and Directed Energy Weapons”, 3/8/02, <http://www.airpower.maxwell.af.mil/airchronicles/cc/mowthorpe02.html> [Marcus)

SBLs would be located on satellites placed in low-earth orbit. The type of orbit would depend on the nature of the threat. A satellite’s orbital altitude is an important factor since it must place the laser, as frequently as possible, in a position where it can destroy the largest number of missiles in their boost phase. The satellite needs to be at an altitude sufficient to enable it to intercept the farthest boosting missile it can see without focusing the beam in such a way that closer and more vulnerable missiles are missed. The optimal altitude depends upon the height at which the booster's engines stop firing, the capacity of the laser, and the hardness of the missiles. When the Soviet Union’s ICBMs were considered the main threat, polar orbits were chosen since they provided good coverage of the northern latitudes. However, polar orbits concentrate SBLs at the poles where there are no ballistic missiles deployed. The optimum configuration would be a number of orbital planes inclined about 70o to the equator.7 It is generally accepted that SBLs would be incapable of lasing a missile re-entry vehicle with a destructive dose of energy during its midcourse and re-entry trajectory. Re-entry vehicles are hardened to survive the launch, midcourse and thermal re-entry phases of missile flight, then successfully detonate and destroy even hard targets.8 The missile must therefore be targeted during the time when it is above the clouds and atmosphere and before it deploys re-entry vehicles.

**A successful attack on the US would empower other states to attack as well – causes global conflict.**

**Goldstein 07** - Professor of Global Politics and International Relations @ University of Pennsylvania [Avery Goldstein, “Power transitions, institutions, and China's rise in East Asia: Theoretical expectations and evidence,” [Journal of Strategic Studies](http://www.informaworld.com/smpp/title~db%3Dall~content%3Dt713636064), Volume [30](http://www.informaworld.com/smpp/title~db%3Dall~content%3Dt713636064~tab%3Dissueslist~branches%3D30#v30), Issue [4 & 5](http://www.informaworld.com/smpp/title~db%3Dall~content%3Dg780703608) August 2007, pages 639 – 682]

Two closely related, though distinct, theoretical arguments focus explicitly on the consequences for international politics of a shift in power between a dominant state and a rising power. In War and Change in World Politics, Robert Gilpin suggested that peace prevails when a dominant state’s capabilities enable it to ‘govern’ an international order that it has shaped. Over time, however, as **economic and tech**nological **diffusion** proceeds during eras of peace and development, other states are empowered. Moreover, the burdens of international governance drain and distract the reigning hegemon, and challengers eventually emerge who seek to rewrite the rules of governance. As the power advantage of the erstwhile hegemon ebbs, it may **become *desperate enough to resort to*** the ultima ratio of international politics, ***force***, to forestall the increasingly urgent demands of a rising challenger. Or as the power of the challenger rises, it may be tempted to press its case with threats to use force. It is the rise and fall of the great powers that creates the circumstances under which major wars, what Gilpin labels **‘hegemonic wars’**, break out.13

Gilpin’s argument logically encourages pessimism about the implications of a rising China. It leads to the expectation that international trade, investment, and technology transfer will result in a steady **diffusion of American economic power**, benefiting the rapidly developing states of the world, including China. As **the US** simultaneously scurries to put out the many brushfires that threaten its far-flung global interests (i.e., the classic problem of overextension), it **will be unable to devote sufficient resources to maintain or restore** its former advantage over emerging competitors like China. While the erosion of the once clear American advantage plays itself out, the US will find it ever more difficult to preserve the order in Asia that it created during its era of preponderance**. The expectation is an** **increase in the likelihood for the use of force** – **either by a** Chinese **challenger** able to field a stronger military in support of its demands for greater influence over international arrangements in Asia, **or by a besieged American hegemon desperate to head off further decline**. Among the trends that alarm those who would look at Asia through the lens of Gilpin’s theory are China’s expanding share of world trade and wealth (much of it resulting from the gains made possible by the international economic order a dominant US established); its acquisition of technology in key sectors that have both civilian and military applications (e.g., information, communications, and electronics linked with to forestall, and the challenger becomes increasingly determined to realize the transition to a new international order whose contours it will define. the ‘revolution in military affairs’); and an expanding military burden for the US (as it copes with the challenges of its global war on terrorism and especially its struggle in Iraq) that limits the resources it can devote to preserving its interests in East Asia.14

Although similar to Gilpin’s work insofar as it emphasizes the importance of shifts in the capabilities of a dominant state and a rising challenger, the power-transition theory A. F. K. Organski and Jacek Kugler present in The War Ledger focuses more closely on the allegedly dangerous phenomenon of ‘crossover’– the point at which a dissatisfied challenger is about to overtake the established leading state.15 In such cases, **when the power gap narrows**, the dominant state becomes increasingly desperate.

Though suggesting why a rising China may ultimately present grave dangers for international peace when its capabilities make it a peer competitor of America, Organski and Kugler’s power-transition theory is less clear about the dangers while a potential challenger still lags far behind and faces a difficult struggle to catch up. This clarification is important in thinking about the theory’s relevance to interpreting China’s rise because a broad consensus prevails among analysts that Chinese military capabilities are at a minimum two decades from putting it in a league with the US in Asia.16 Their theory, then, points with alarm to trends in China’s growing wealth and power relative to the United States, but especially looks ahead to what it sees as the period of maximum danger – that time when a dissatisfied China could be in a position to overtake the US on dimensions believed crucial for assessing power. Reports beginning in the mid-1990s that offered extrapolations suggesting China’s growth would give it the world’s largest gross domestic product (GDP aggregate, not per capita) sometime in the **first** few **decades of the twentieth century** fed these sorts of concerns about a potentially dangerous challenge to American leadership in Asia.17

The huge gap between Chinese and American military capabilities (especially in terms of technological sophistication) has so far discouraged prediction of comparably disquieting trends on this dimension, but inklings of similar concerns may be reflected in occasionally alarmist reports about purchases of advanced Russian air and naval equipment, as well as concern that Chinese espionage may have undermined the American advantage in nuclear and missile technology, and speculation about the potential military purposes of China’s manned space program.18 Moreover, because a dominant state may react to the prospect of a crossover and believe that it is wiser to embrace the logic of **preventive war** and act early to delay a transition while the task is more manageable, Organski and Kugler’s power-transition theory also provides grounds for **concern about the period prior to the possible crossover**.19 pg. 647-650

Lack of leadership leads to nuclear exchanges.

**Khalilzad ‘95** (Zalmay, RAND Corporation, The Washington Quarterly, Spring 1995)

On balance, this is the best long-term guiding principle and vision. Such a vision is desirable not as an end in itself, but because a world in which the United States exercises leadership would have tremendous advantages. First, the global environment would be more open and more receptive toAmerican values -- democracy, free markets, and the rule of law. Second, such a world would have a better chance of dealing cooperatively with the world's major problems, such as nuclear proliferation, threats of regional hegemonyby renegade states, and low-level conflicts.Finally,U.S. leadership would help preclude the rise of another hostile global rival, enabling the United States and the world to avoid another global cold or hot war and all the attendant dangers, including a global nuclear exchange.U.S. leadership would therefore be more conducive to global stability than a bipolar or a multipolar balance of power system.

**US retaliation leads to Middle East conflict.**

Michael **Chossudovsky**, Global Research staff writer, director of the Centre for Research on Globalization (CRG), Montreal, **10**

Global Research, “Preparing for World War III, Targeting Iran”, 8/1/10, <http://www.globalresearch.ca/index.php?aid=20403&context=va> [Marcus]

Were Iran to be the object of a "pre-emptive" aerial attack by allied forces, the entire region, from the Eastern Mediterranean to China's Western frontier with Afghanistan and Pakistan, would flare up, leading us potentially into a World War III scenario. The war would also extend into Lebanon and Syria.

Global nuclear war

John Steinback, converge.org staff writer, 2002

Converge, “Israeli Weapons of Mass Destruction: a Threat to Peace”, 3/3/02, <http://www.converge.org.nz/pma/mat0036.htm>)

Meanwhile, the existence of an arsenal of mass destruction in such an unstable region in turn has serious implications for future arms control and disarmament negotiations, and even the threat of nuclear war. Seymour Hersh warns, "Should war break out in the Middle East again,... or should any Arab nation fire missiles against Israel, as the Iraqis did, a nuclear escalation, once unthinkable except as a last resort, would now be a strong probability."(41) and Ezar Weissman, Israel's current President said "The nuclear issue is gaining momentum (and the) next war will not be conventional."(42) Russia and before it the Soviet Union has long been a major (if not the major) target of Israeli nukes. It is widely reported that the principal purpose of Jonathan Pollard's spying for Israel was to furnish satellite images of Soviet targets and other super sensitive data relating to U.S. nuclear targeting strategy. (43) (Since launching its own satellite in 1988, Israel no longer needs U.S. spy secrets.) Israeli nukes aimed at the Russian heartland seriously complicate disarmament and arms control negotiations and, at the very least, the unilateral possession of nuclear weaponsby Israel is enormously destabilizing, anddramatically lowers the threshold for their actual use, if not for all out nuclear war. In the words of Mark Gaffney, "... if the familar pattern(Israel refining its weapons of mass destruction with U.S. complicity) is not reversed soon- for whatever reason- the deepening Middle East conflict could trigger a world conflagration."

# 1AC – China

**China’s space capabilities and defense industries threaten US hegemony**

Erik, **Quigley**, Air Command and Staff Coll Maxwell afb al, **09** “Geo-Political Considerations to China's Rise in Space Power”, 4/2009, http://handle.dtic.mil/100.2/ADA539644

“Space is now considered to be one of China’s strategic frontiers‟…military satellites are now legitimate targets in war.” Steven Lambakis, author, On the Edge of Earth, The Future of American Space Power Now more than ever, China‘s military, economy, and resource consumption is growing at a monumental pace. China has the desire to become a world recognized regional superpower in the 21st century. As a result, China is posturing itself with a peaceful rise‘grand strategy that will eventually compete with the US for hegemon status. Polls show that half of the American public believes China will pose ―the biggest challenge to U.S. world power status in the next hundred years. Robert Kagan, in an article entitled ―*What China Knows That We Don‟t”*, contends that China aims ―in the near-term to replace the United States as the dominant power in East Asia and in the long-term to challenge America‘s position as the dominant power. China‘s recent rise in space capability can be attributable to three areas: one, by its recent booming economy, second, by its recent technological revolution, and third, by its cultural ideology or tradition. Economically, China has the 4th highest GDP in the world with $3.3 trillion dollars, only slightly behind Germany and Japan compared to the US. Technologically, ever since the late 1990s, the Chinese continue to focus on a fundamental restructuring of its defense industry evidenced by its shifting control of defense enterprises from the military to the civilian government. Culturally, China will likely choose to remain consistent with its ‗People‘s War‘ strategy to only engage in military action when they know they can succeed. China is therefore building up its space military capability to support this cultural ideology.

**Chinese ASATS poses a militarized space threat - ASAT is a weapon**

Erik, **Quigley,** Air Command and Staff Coll Maxwell afb al, **09** “Geo-Political Considerations to China's Rise in Space Power”, 4/2009, http://handle.dtic.mil/100.2/ADA539644

On 11 January 2007, China demonstrated ground-based offensive anti-satellite (ASAT) capability by shooting down one of its inactive weather satellites. No advance notice of the test was given, nor has China convincingly explained the intention of the test, other than that it was for peaceful purposes. This act needs to serve as a wake-up call for the US acknowledging China‘s rise in military space power. During a Dec 2007 report to Congress, Jeffrey Logan stated that although the ASAT test may have been a strategic demonstration of Chinese deterrence, others may see it as a ―nefarious display of China‘s space capabilities, and a sign that China has more ambitious objectives in space. The ground-based ASAT test by itself may have proved to be a benign space event, however, when combined with previous statements of space militarization, it strengthens the argument that China may be posturing itself more strongly for space dominance in their region. Two open-source examples are worth mentioning. First, China openly declared the development of ―parasitic satellites as an additional method to deploy an ASAT weapon. According to the latest thinking among Chinese defense professionals, ―ASATs are legitimate weapons.

**The US and other countries need a counter-ASAT weapon in space**

Theresa, **Hitchens**, Debris, Traffic Management, and Weaponization, **08** Opportunities for and Challenges to Cooperation in Space Politics, 2008, http://media.web.britannica.com/ebsco/pdf/801/33119801.pdf

As noted above, the Chinese ASAT test—the first such test in more than 20 years—has solidified fears that modern military powers may develop both earth-to-space and space based weapons to attack satellites, as well as on-orbit weapons to attack terrestrial targets. There have been calls in the United States, India, Russia, and Israel for development of ASAT and counter-ASAT weapons based in space in the wake of the Chinese test, and political agitation in Japan regarding missile defense and military space. Containment of the negative action-reaction dynamic now emerging will surely challenge the international community, given the myriad obstacles—both technical and political—that continue to face efforts to hammer out a treaty banning space weapons.

**Chinese Perception of Space wars necessities SB-BMD**

L.M. **Wortzel,** Vice-President for Foreign Policy and Defense Studies Area(s) of Expertise: China, Asia, intelligence issues, foreign policy, national security, and military strategy, 20**08.** Astropolitics, “THE CHINESE PEOPLE’S LIBERATION ARMY AND SPACE WARFARE.”

Space operations and warfare in space are components of what the PLA calls ‘‘informationalized,’’ or information age, warfare. In general, PLA strategists are convinced that space will be one of the natural domains of war and that war in space will be an integral part of other military operations. Moreover, PLA authors are convinced that ‘‘future enemy military forces will depend heavily on information systems in military operations;’’ therefore, they believe, China needs to break through the technological barriers and develop information system countermeasures in space. Two authors in China Military Science, the PLA’s premier military theory journal, believe that ‘‘it is in space that information age warfare will come to its more intensive points. Future war must combine information, firepower, and mobility.’’ They believe that future latent military threats will primarily come in aerospace.

Space BMD solves ASATs - Two shots at stopping

Howard **Kleinberg**, member of the graduate faculty of the Department of Public & International Affairs at University of North Carolina Wilmington, April 20**11**. US Army Field Artillery Association, “A Global Missile Defense 'network': Terrestrial High-Energy Lasers and Aerospace Mirrors,”

Fortunately, this recently -revealed, real-world ASAT threat also brings a silver lining in it. As is the case with ballistic missiles, SBBMD weapons can also defend against ASATs. All ASATs, at least, whether direct-ascent or co-orbiting, must first be launched from the Earth's surface, regardless of the launch platform, and must first go through a boost phase. And since SB-BMD provides the single best way to stop any such missile attack from taking place, Robert Butterworth, suggests in his article, "Assuring Space Support Despite ASATs," it would also provide the single best way to defend against ASAT attacks; same mission, different payload inside the threat missile. SB-BMDs could also intercept ASATs in other phases of their flight, at least within lower Earth orbit. For instance, the Missile Defense Agency's GMD can intercept ICBM warheads at the peak of their trajectories, some 1, 100 km (500 miles) or so. Similarly, an ASAT (direct-ascent or co-orbiting) on terminal approach towards a satellite in LEO would present a target of comparable size, density and velocity as a "mid-course" ICBM warhead (if not even larger), at a similar altitude, and possibly similar speed and trajectory. As a result, the ASAT could also be targeted and intercepted by a midcourse defense-capable SB-BMD weapon, in addition to its primary role of boost-phase defense, giving a "second-chance" round of shots with which to try to stop any ASAT.

Chinese ASAT development puts the U.S. on hair-trigger alert – leads to miscalc and accidental shootouts.
Theresa Hitchens, vice president and director of the Space Security Project at the Center for Defense Information, “Worst-Case Mentality Clouds USAF Space Strategy,” February 14, 2005, Center for Defense Information, <http://www.cdi.org/program/document.cfm?DocumentID=2885&from_page=../index.cfm>

The case being argued by space weapon enthusiasts goes like this: U.S. space assets are vulnerable, potential adversaries have woken up to this fact, therefore, actual threats (enemy systems to attack our satellites based on newly available technologies) will inevitably emerge – thus, U.S. space weapons are required to counter those threats. And true to salesmen everywhere, the pitch is often served with a generous helping of hyperbole. However, there comes a time – such as when a candidate is actually elected – when it is dangerous to fail to see through one’s own PR. Proponents of space weapons are in danger of being blinded by their own hype. A recent case in point: Maj. Gen. (select) Daniel Darnell, head of the Air Force Space Command’s Space Warfare Center, was quoted in the January 2005 issue of Air Force Magazine asexhorting all satellite operators to not only beware potential attacks, but to assume – as a first-case rather than worst-case scenario – that any disruption of a space system is most likely an attack**.** The first response when something goes wrong, said Darnell, should be "think possible attack." Even if one gives the general the benefit of the doubt as simply playing the campaign game, such a pronouncement is not only based on false premises, but also highly dangerous. Especially if operators really believe it. Careful probing of even the most ardent space weapon proponents reveals that no one seriously believes major threats to on-orbit systems exist today. While Air Force space officials are inordinately (and somewhat disingenuously) fond of pointing to attempts by Iraqi forces to jam the Global Positioning System during the 2003 Gulf War as part of their space-warfare-is-inevitable argument, it is important to recognize that those incidents involved ground-based jammers aimed at ground-based receivers, not any direct attack against on-orbit assets themselves. Indeed, there is no country, not even the United States, that currently has a working anti-satellite system in its arsenal. Direct threats to space assets are possible in the mid- to long term, but do not exist today (outside of the remote chance of someone launching a nuke into space, a threat that has existed since the dawn of the ballistic missile). More worrisome is the fact, subsequently admitted in the Air Force Magazine article, that the Air Force does not have the capability at this time to ascertain on the spot whether any disruption of satellite operations is due to a malfunction, such as faulty software or space weather, or the result of some sort of deliberate interference or attack. Some problems can be pinpointed over time, but not always with complete certainty. Taking Darnell’s logic at face value, however, these facts don’t matter. Any problems encountered by a satellite should be treated as a likely attack – an attack that under current Air Force doctrine would be considered an act of war subject to military response. In other words, we will shoot back. But at whom or what? The satellite that happens to be nearest the disabled one? The "rogue state" du jour? The wholesale adoption by the Air Force of such trigger-happy thinking would obviously be a recipe for disaster, raising the likelihood of the United States launching an accidental war. Furthermore, one can be doubly sure that if the United States has expensive space weapons on orbit, trigger fingers will be even itchier due to concerns about losing those assets before they can be used. The upshot will be a "shoot first and let God sort ‘em out" strategy that will no doubt backfire on U.S. security sooner or later. Suffice it to say, there will be a price to pay the first time a U.S. anti-satellite weapon shoots down an innocent Chinese communications satellite because a crucial widget on a U.S. satellite conked out due to faulty manufacturing processes.

Space war with China risks escalation and war.
William C. **Martel**, Prof. Nat'l Security Affairs at the Naval War College, **and** Toshi **Yoshihara**, doctoral candidate at the Fletcher School of Law and Diplomacy - Tufts U, research fellow at the Institute for Foreign Policy Analysis, "Averting a Sino-U.S. Space Race," Autumn, **2003**, The Washington Quarterly, 26:4, pp. 19-35

Strategists in the United States and in China are clearly monitoring the other’s developments in space. How the United States judges Chinese intentions and capabilities will determine Washington’s response; of course, the reverse is equally true. As each side eyes the other, the potential for mutual misperceptions can have serious and destabilizing consequences in the long term. In particular, both countries’ exaggerated views of each other could lead unnecessarily to competitive action-reaction cycles. What exactly does such an action-reaction cycle mean? What would a bilateral space race look like? Hypothetically, in the next 10 years, some critical sectors of China’s economy and military could become increasingly vulnerable to disruptions in space. During this same period, Sino-U.S. relations may not improve appreciably, and the Taiwan question could remain unresolved. If Washington and Beijing could increasingly hold each other’s space infrastructure hostage by threatening to use military options in times of crisis, then potentially risky paths to preemption could emerge in the policy planning processes in both capitals. In preparing for a major contingency in the Taiwan Strait, both the United States and China might be compelled to plan for a disabling, blinding attack on the other’s space systems before the onset of hostilities. The most troubling dimension to this scenario is that some elements of preemption (already evident in U.S. global doctrine) could become a permanent feature of U.S. and Chinese strategies in space. Indeed, Chinese strategic writings today suggest that the leadership in Beijing believes that preemption is the rational way to prevent future U.S. military intervention. If leaders in Beijing and Washington were to position themselves to preempt each other, then the two sides would enter an era of mutual hostility, one that might include destabilizing, hair-trigger defense postures in space where both sides stand ready to launch a first strike on a moment’s notice. One scenario involves the use of weapons, such as lasers or jammers, which seek to blind sensors on imaging satellites or disable satellites that provide warning of missile launches. Imagine, for example, Washington’s reaction if China disabled U.S. missile warning satellites or vice versa. In that case, Sino-U.S. relations would be highly vulnerable to the misinterpretations and miscalculations that could lead to a conflict in space. Although attacks against space assets would likely be a precursor or a complement to a broader crisis or conflict, and although conflicts in the space theater may not generate many casualties or massive physical destruction, the economic costs of conflict in space alone for both sides, and for the international community, would be extraordinary given that many states depend on satellites for their economic well-being.

Strong American capabilities and the containment of China is critical to prevent aggression and war over Taiwan.

Khalilzad 95 (Zalmay, US Ambassador to the United Nations. “Losing the Moment? The United States and the World After the Cold War.” The Washington Quarterly, Vol. 18, No. 2. pg. 84 Spring 1995)

Third, the United States should seek to strengthen its own relative capabilities and those of its friends in East Asia to deter possible Chinese aggression and deal effectively with a more powerful, potentially hostile China. China's military leaders are considering the possibility of a conflict with the United States. They recognize the overall superiority of the U.S. military but believe there are weaknesses that could be exploited while preventing the United States from bringing its full power to bear in case of a conflict over Taiwan. According to the Chinese, U.S. weaknesses include vulnerability of U.S. bases to missile attacks, heavy U.S. reliance on space, America's need to rapidly reinforce the region in times of conflict, susceptibility of U.S. cities to being held hostage, and America's sensitivity to casualties. According to the emerging Chinese doctrine, the local balance of power in the region will be decisive because in this new era wars are short and intense. In a possible Taiwan conflict China would seek to create a fait accompli, forcing the United States to risk major escalation and high levels of violence to reinstate the status quo ante. China might gamble that these risks would constrain the U.S. response. Such an approach by China would be extremely risky and could lead to a major war. Dealing with such possible challenges from China both in the near and long term requires many steps. Burden-sharing and enhanced ties with states in East and Southeast Asia will be important. New formal alliance relationships--which would be the central element of a containment strategy--are neither necessary nor practical at this time, but it would be prudent to take some preparatory steps to facilitate the formation of a new alliance or the establishment of new military bases should that become necessary. They would signal to China that any attempt on their part to seek regional hegemony would be costly. The steps we should take now in the region must include enhancing military-to-military relations between Japan and South Korea, encouraging increased political- military cooperation among the ASEAN states and resolving overlapping claims to the Spratly Islands and the South China Sea; fostering a Japanese-Russian rapprochement, including a settlement of the dispute over the "northern territories;" and enhancing military-to-military cooperation between the United States and the ASEAN states. These steps are important in themselves for deterrence and regional stability but they can also assist in shifting to a much tougher policy toward China should that become necessary. Because of the potential for conflict between the United States and China over issues such as Taiwan, the U.S. military posture in general should take this possibility into account.Measures should be taken to correct the Chinese belief that they can confront the world with a fait accompli in Taiwan. The United States needs expanded joint exercises with states in the region. Ensuring access to key facilities in countries such as the Philippines, pre-positioning stocks in the region, and increasing Taiwan's ability to defend itself would also be prudent. The large distances of the East Asian region also suggest that a future U.S. force-mix must emphasize longer-range systems and stand-off weapons. The United States must develop increased capabilities to protect friendly countries and U.S. forces in the region against possible missile attacks.

**SBMD key to deter China – the Taiwan deterrence equation requires the ability to halt Boost Phase missiles**

**Ross 11** [ Ed Ross, ePresident and CEO of EWRoss a company that provides global consulting services, former Principal Director, Security Cooperation Operations Defense Security Cooperation Agency Acting Deputy Assistant Secretary of Defense China Brief Volume: 11 Issue: 3 on February 10, 2011]

The PRC military threat to Taiwan has increased dramatically over the years as China has deployed approximately 1500 short- and medium-range ballistic missiles along the Taiwan Strait [2]. While China’s ability to coerce or attack Taiwan with its increasingly sophisticated fighter aircraft and submarine fleets are ever-increasing threats, in the absence of a comprehensive Taiwan missile-defense system, the military and political risk for China of a missile attack remains significantly less than that of air strikes or a blockade. Moreover, China’s ability to launch an amphibious invasion of Taiwan remains limited by its sea lift and amphibious attack capabilities [3]. Since 2002, the U.S. government has assessed that Taiwan no longer has the capability to maintain air dominance over its territory [4]. Taiwan’s ground-based air defenses—its U.S.-supplied Patriot and I-Hawk missiles, it’s domestically produced Tien Kung I and II (Sky Bow) missiles [5], and its air force still pose a major risk for Chinese fighter and bomber aircraft. How long would it take for China to overcome Taiwan’s air defenses, what loses China would incur in achieving that goal, and how long would it take the U.S. Pacific Fleet to come to Taiwan’s defense are part of a dynamic deterrence equation that has been shifting in China’s favor for at least the past decade [6]. Operational deployment of China’s recently unveiled J-20 “stealth” fighter [7] remains several years away. Its introduction certainly would further tip the balance of power toward China and gives further arguments for the sale of new F-16C/D fighters to Taiwan. Sustaining a military blockade of Taiwan is also not without risk for China. It risks igniting a broader conflict; and if Taiwan sunk just one PRC warship in response, it would be an embarrassment for the People’s Liberation Army (PLA). It is not clear how Taiwan’s major trading partners, Japan and the United States, would react should the PRC take military action against an American or Japanese flagged ship attempting or perceived to be attempting to challenge the blockade. They and the United Nations would have plenty of time to condemn China and take other actions to mitigate the result a blockade was intended to produce. A missile attack on Taiwan, in the absence of an adequate missile-defense, however, poses little risk for China beyond the international condemnation that would follow. How the international community would react to a ballistic-missile attack on Taiwan depends largely on the events leading up to it. From a purely military perspective, however, no aircraft, ships, or PRC military personnel would be at hazard. Certainly, Taiwan could attack targets on the Chinese mainland in retaliation, but Taiwan’s capability to do that with missiles and aircraft is limited, and the systems and bases Taiwan would use for such attacks would be among the primary targets of a PRC ballistic-missile strike.

**Sophisticated BMD Key to avoid China war – prevents them from crossing the Taiwan strait**

**Lister** in 20**10**[ Charles R. Lister, Research Assistant Institute for Foreign Policy Analysis, Researcher The Centre for the Study of Terrorism & Political Violence, Editorial Assistant at The Diplomat, Article on e-IR “ US Missile Defence and Space Security: a Security Dilemma for China? “

Taiwan is a major foreign policy issue for China and has been largely since 1949 when the People’s Republic was established. Beijing’s ‘One China’ policy foresees that eventually, Taiwan will ‘reunify’ with the mainland – until that time, Beijing considers it a ‘renegade province’ illegitimately seeking independence (taidu).[25] Officially, Beijing has a policy that accepts the necessary use of ‘non-peaceful means’ in the event of a Taiwanese push for independence. U.S. support for Taiwan has been clear ever since the outbreak of the Korean War in 1950 and the subsequent 1954 Mutual Security Pact that placed “China’s Taiwan ‘province’ under U.S. protection.”[26] Crucially regarding the focus of this paper is the 1979 Taiwan Relations Act that committed the U.S. to provide Taiwan with “arms of a defensive character”[27] in order to prevent Chinese coercive (re)unification. In January 2010, President Obama announced the approval of an arms deal with Taiwan worth $6.7 billion that crucially included one-hundred and fourteen Patriot-3 anti-ballistic missiles (ABMs),[28] the purpose of which is clearly to deter the one thousand four-hundred Chinese offensive missiles and rockets currently deployed across the Strait.[29] For China, this considerably undermines hopes for eventual reunification and serves only to bolster Taiwanese self-confidence and give the U.S. more freedom of action in any conflict over Taiwan. For Rex Li, the U.S. sale of TMD systems to Taipei is part of a wider U.S. policy of “using Taiwan to constrain China” (yitai zhihua)[30] and undermines previous U.S. assurances of ‘strategic ambiguity’ over the Taiwan issue. For others, such a sale is “tantamount to a military alliance”[31] directed against China, and, because the People’s Liberation Army (PLA) arguably represents the most notable ‘nationalist’ or realist voice within China, will serve only to encourage escalatory moves such as incentivizing increased missile deployments opposite Taiwan – thus exemplifying a security dilemma. Further to this, China has serious concerns regarding the stability of various outlying provinces, like Tibet or Xinjiang, where secessionist, anti-government movements could be bolstered by an increasingly confident Taiwanese independence movement backed by U.S. weapons and support. Even though one-hundred and fourteen Patriot-3 missiles cannot defend Taiwan from a full-scale Chinese missile strike, sophisticated BMD technology in the hands of Taipei symbolizes a highly significant shift in the power balance. China has, as the result of one U.S. action, lost a crucial measure of strategic leverage over American regional power and will presumably have to respond counteractively.

**SBMD key to deterring China and protecting Taiwan in a nuclear conflict**

**McDevitt 02** [ Michael, Rear Admiral, U.S. Navy (Retired) and Director, Center for Strategic Studies, CNA Corporation “ Missile Defense and U.S. Policy Options Toward Beijing” 2002 The Henry L. Stimson Center issue 47]

It is difficult to overstate the importance of Taiwan to any calculation of strategic nuclear relations with China. All such calculations must consider the possibility of conflict with China over Taiwan, either because Taiwan rashly declares independence and the U.S. feels compelled to come to the aid of a small democracy and longtime “friend” (even if it was Taiwanese rashness that precipitated the crisis), or because China becomes tired of waiting and decides to act based upon its declaratory policy found in the February 2000 White Paper on Taiwan, and attacks Taiwan because the island hasn’t begun dialogue leading to reunification. While both scenarios are plausible, the likelihood of one or the other actually taking place seems too remote to this author—because China has deterred Taiwan, and we have deterred China. But not so remote that prudent planning should not be taken to ensure that if the United States becomes embroiled in a shooting war with China, we have thought through all the implications of engaging in armed conflict with a country armed with nuclear weapons. The United States has never actually had to really do this because, happily, the Cold War with the Soviets never went hot. It is worth remembering that it did go hot with China, but that was before China had nuclear weapons. One of the implications of conflict over Taiwan must be whether or not the United States should focus on defending against Chinese ballistic missiles. Certainly if conflict broke out with China over Taiwan and the U.S. had already fielded a missile defense system, such a system would be used to the extent of its capability to defend the United States from any Chinese missiles. The issue is not whether we would use any and all defenses if attacked—of course we would. The issue is what capabilities the country should strive to achieve vis-àvis China’s ICBMs within the context of a plausible conflict over Taiwan. How one answers this question will help inform judgments on U.S. interests and U.S. policy choices. Before turning to U.S. interests and policy options, an important point of context is provided in an early January 2002 DoD directive from Secretary of Defense Rumsfeld which provides specific guidance as to its missile defense priorities: ƒ First, to defend the United States, deployed forces, allies and friends. Second, to field a missile defense system that layers defenses to intercept ballistic missiles in all phases of their flight (i.e., boost phase, midcourse flight and terminal) against ballistic missiles of all ranges. ƒ Third, to field specific elements of the overall Ballistic Missile Defense System (BMDS) as soon as practicable. For xample, deployment of Patriot PAC-3, as the first line of defense against short-range missiles, is under way. ƒ Fourth, to develop and test a full range of technologies, conduct an aggressive testing program and then field the most promising technologies as they become available. This is what some have called Secretary Rumsfeld’s “pharmaceutical” approach—i.e., to look at all possibilities and select the best as opposed to “putting all eggs into one basket” by making an early determination of just one approach. To accomplish these priorities, the Defense Department is in the process of reorganizing itself to put one organization in charge. This new entity is to be called the Missile Defense Agency (MDA). What is interesting about these priorities is the implied uncertainty over the size and nature of layered missile defense. It is also interesting that the defensive “requirement” is very broad—encompassing friends and allies.

**China, Taiwan, US conflict escalates causing global nuclear war**

**Hunkovic 09 [**  Lee J. Hunkovic, Professor at The American Military University, “The Chinese-Taiwanese Conflict Possible Futures of a Confrontation between China, Taiwan and the United States of America,” 2009, <http://www.lamp-method.org/eCommons/Hunkovic.pdf>]

A war between China, Taiwan and the United States has the potential to escalate into a nuclear conflict and a third world war, therefore, many countries other than the primary actors could be affected by such a conflict, including Japan, both Koreas, Russia, Australia, India and Great Britain, if they were drawn into the war, as well as all other countries in the world that participate in the global economy, in which the United States and China are the two most dominant members. If China were able to successfully annex Taiwan, the possibility exists that they could then plan to attack Japan and begin a policy of aggressive expansionism in East and Southeast Asia, as well as the Pacific and even into India, which could in turn create an international standoff and deployment of military forces to contain the threat. In any case, if China and the United States engage in a full-scale conflict, there are few countries in the world that will not be economically and/or militarily affected by it. However, China, Taiwan and United States are the primary actors in this scenario, whose actions will determine its eventual outcome, therefore, other countries will not be considered in this study

# 1AC – SBL Solvency

**Directed energy weapons key to successful weapon advantage and ballistic missile defense**

Bayram **Deveci**, Doctorate at Naval Postgraduate School, **07** [Naval Postgraduate School, “Directed-Energy Weapons: Invisible and Invincible?”, September 2007, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA473993&Location=U2&doc=GetTRDoc.pdf (Ghosh)]

1. Advantages of Directed-Energy Weapons There are several reasons for the growing interest in directed-energy weapons. The attraction of the military to these weapons is clear when considering the unique properties they bring to the strategic, operational, and tactical battlefield. The first and most obvious advantage is that directed-energy weapons deliver lethal energy at the speed of light. This significant advantage enables instant reaction to fast, highly maneuverable targets. That means many of the problems associated with aiming and discharging existing weapons are effectively eliminated, because virtually no time elapses between firing a directed-energy weapon and its impact on the target. 23 Avoidance of collateral damage or adjustable energy is the second advantage of directed-energy weapons. Today’s war mentality prefers the option to inflict non-lethal attacks prior to the use of lethal force. In contrast to kinetic and chemical weapons that might have devastating and unintended collateral effects, flexible engagement levels dependent upon the transmitted power and irradiation time makes the DE weapons unique and valuable. A third important aspect of the directed-energy weapons is that they are extremely precise. Directed-energy weapons allow the attackers employing them to select the specific part of a fast-moving target that they wish to strike. In fact, with sufficient tracking and characterization, this unprecedented precision will accomplish surgical strikes with no collateral damage or fratricidal effects on friendly forces. 24 A fourth important feature of directed-energy weapons is their freedom from gravitational limits. Directed-energy beams are essentially immune to gravity due to their lack of mass, which also frees them from the kinematic and aerodynamic constraints that limit traditional weapons. 2 A fifth key feature of the directed-energy weapons is that they are area weapons that can engage multiple targets within a hostile area with minimal prior information on threat characteristics. They can affect all targets in that area and can be rapidly retargeted to provide protection in several directions. 26 A sixth directed-energy weapon advantage is their deep magazines, which need only fuel and battery chargers, as well as low operating costs. For example, a tactical high-energy laser shot is estimated to cost about $8,000, whereas firing a Patriot (PAC-3) missile costs $3.8 million; an AIM-7 Sparrow missile costs approximately $125,000; and a Tomahawk cruise missile costs roughly $600,000. Although the beam-generating system may be expensive to build and maintain, the price of engagements is minimal because the system expends only energy. 27 A final unique characteristic of directed-energy weapon is their all-weather attack capability to reach virtually untouchable targets. They are unaffected by weather and can penetrate deep into the earth, enabling attacks on buried bunkers, as well as targets in space. 28 2. Limitations and Problems with Directed-Energy Weapons Directed-energy weapons offer new ways of fighting that will change current doctrines, tactics, and strategies. As with the introduction of any new systems, directed energy weapons also have limitations and drawbacks that will tend to mitigate their fast growth. The first problem facing directed energy is operating under real-world conditions. While a new technology like directed-energy weapons are being transitioned out of the laboratory to the real battlegrounds, there might be relatively simple countermeasures that can restrict the effectiveness of directed-energy weapons that have been overlooked by those working in the laboratories and that may be relatively simple to implement. Fratricide is probably the second biggest drawback in using this technology. Some directed-energy weapons are not very discriminating. Radiating at an enemy will not only affect the target system, but also anything else in the beam’s path. Any friendly forces within the footprint of the beam will be at significant risk. 29 A third great limitation of some types of directed-energy weapons is that they are highly susceptible to degradation by the atmosphere in the presence of obscurants, whether natural or manufactured, such as dust, clouds, rain and smoke. Another potential limitation is damage or performance-degrading assessments. Due to little directly-observable feedback from the target as to the effects of a hit, one may not know positively if a directed-energy weapon has been successful.30 The last concern regarding directed-energy weapons is related to their usage against allied forces. High-powered microwave weapons may be relatively simple for terrorist forces (and others) to acquire and use in an asymmetric manner. In order to counter this, all electronic platforms and weapon systems must be hardened and shielded. Table 3 summarizes the advantages and disadvantages of directed-energy weapons. Like their strengths, directed-energy weapons weaknesses differ from those encountered by current technologies and contribute to the impression that these weapons are very different. Like all other weapons, directed-energy weapons have limitations and problems. However, their potential influence on the current battlefield strategies **far outweighs their limitation** E. EFFECTS ON TARGETS There are various means of affecting targets using directed-energy weapons. The following discussion includes some of the commonly used terms to discuss these various means. Deny is a temporary action, and it is defined as the ability to eliminate the enemy’s operational capacity without inflicting harm, whereas degrade means to achieve this impact with minimal injury on the enemy systems. Deny and degrade are both similar in that they both are non-permanent and affected systems will return to normal operation within a period of time. 24 The concept of damage involves moderate injury to incapacitate the enemy systems for a certain period of time. This action may be permanent, depending upon the severity of the attack. Finally, destroy reflects the idea of permanent injury on the enemy systems which would be require total replacement. 31 In principle, depending on some conditions such as distance between the weapon and target, generated power, and target-hardening level, directed-energy weapons affect their targets through either a soft-kill or a hard-kill. 1. Soft-Kill A soft-kill is achieved when the effects of a directed-energy weapon stops operation of the target system temporarily. As is understood from their definitions above, deny, degrade, and some damage effects are the practical methods of a soft-kill mechanism. Disrupting the electronics of a guided missile, causing it to miss its target, or suppressing or damaging visible, infrared, and microwave sensors might be given as examples of a soft-kill. The results are a temporary loss of function, but they can seriously compromise operational success. A soft-kill by directed-energy weapons against human targets means painful stimulation of human nerves, hearing or skin. After brain tissue absorbs an electromagnetic pulse, it slightly but rapidly expands and produces a supersonic wave which is received by the inner ear. If this pulse of energy exceeds a certain threshold and the supersonic wave is too strong, the human ear will not function. 32 The Active Denial System, discussed in a later chapter, is an example of a directed-energy weapon which uses a soft-kill mechanism by heating up the skin's surface 2. Hard-Kill Like conventional weapons, directed-energy weapons can defeat their targets by causing physical damage to the structure of the targets. A hard-kill is achieved when sufficient energy is delivered into the target system, such that it is permanently damaged or destroyed. 33 Destroying a ballistic missile with an airborne laser during its boost phase by heating, melting, or vaporizing its skin is an example of a hard-kill. A hard-kill can include: • Structural damage • Melting of components • Shorting out electronics • Fusing and immobilizing moving parts Directed-energy weapons have adjustable kill mechanisms as well as both hardkill and soft-kill capacities, which makes them unique in comparison to kinetic energy weapons. Instead of only destroying targets, directed-energy weapons have soft-kill potential which enables temporary damage and degradation.

**SBLs can achieve global BMD capability**

Bayram **Deveci**, Doctorate at Naval Postgraduate School, **07** [Naval Postgraduate School, “Directed-Energy Weapons: Invisible and Invincible?”, September 2007, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA473993&Location=U2&doc=GetTRDoc.pdf (Ghosh)]

The space-based laser (SBL) is another high-energy laser type that uses a hydrogen fluoride (HF) chemical laser to achieve an effective, global ballistic missile defense capability. The SBL is currently envisioned to be a constellation of orbital laser weapons capable of engaging and destroying several classes of missiles, launched from anywhere in the world, during the boost phase. The SBL will also have the capability to destroy or disable other space-based systems such as surveillance satellites. Moreover, a different laser type that has an appropriate wavelength other than that of the hydrogen fluoride (HF) chemical laser could attack ground targets. According to sources, the best space-based laser (Figure 13) concept would operate at an altitude of 1,300 km above the earth’s surface with twenty different spacebased platforms. This would provide a continuous worldwide defense ability to destroy hostile missiles launched anytime from anywhere on the globe. Each space-based laser platform consists of four major subsystems: • A laser device, which uses megawatt-class hydrogen fluoride (HF) chemical laser operating at 2.7 microns. • An optics and beam control system, which has a 2.4- to 4.0-meterdiameter primary beam director and an integrated beam control system. • An acquisition, tracking, pointing and fire control (ATP/FC) system, which includes a stabilized platform to maintain the beam on the target. • Associated space systems, which provide the necessary electrical power, laser reactants, on-board data processing, and command and control. 72 Two other longer term options are considered to involve space-based laser systems. The first uses space-based mirrors and places the laser on the ground. The distinct advantage of this architecture is that the high-energy laser is kept on the ground, which eliminates refueling and complex maintenance problems. Although it has an advantage, this option has disadvantages that include the requirement for higher energy levels to counter greater losses due to atmospheric transmission. A second option is deployment of space-laser weapons with large orbital mirrors. The concept behind this architecture is to increase the altitude of platforms and insert bifocal mirrors into the same orbit as the laser weapons. One distinct advantage of this architecture is the possibility of reducing the weight and expense of the system. Instead of twenty laser platforms, the concept requires roughly ten platforms and ten orbiting mission mirrors.74 This will decrease the number of laser platforms but will also require higher energy levels because of the higher orbital altitude.

**SBLs are the only form of missile defense that can prevent nuclear, chemical, and biological attacks**

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Space-based weapons, like all space systems, are predictable and fragile, but they represent significant combat power if used before they are destroyed— leading to a strong incentive to use these weapons preemptively, to “use them or lose them.” The problem is further complicated by the difficulty in knowing what is occurring in space. As the Commission to Assess United States National Security Space Management and Organization pointed out: Hostile actions against space systems can reasonably be confused with natural phenomena. Space debris or solar activity can “explain” the loss of a space system and mask unfriendly actions or the potential thereof. Such ambiguity and uncertainty could be fatal to the successful management of a crisis or resolution of a conflict. They could lead to forbearance when action is needed or to hasty action when more or better information would have given rise to a broader and more effective set of responsive options. 10 This lag in situational awareness can increase the effectiveness of attacks. That is, striking first is likely to mean inflicting disproportionate losses on the enemy; waiting increases the chances of suffering disproportionate losses oneself. SPACE-BASED WEAPON CONCEPT S : ADVANTAGES , I S SUES , AND REACTION If technical and fiscal challenges are overcome, there is little doubt that an integrated combination of airborne, terrestrial, and space-based lasers with orbiting relay mirrors would be a flexible weapons constellation. Striking at 186,000 miles a second, laser weapons and mirrors help overcome the problems posed by the large distances and high speeds for targeting in and from space. 11 Perhaps they would be most effective at space control, but they would also be useful for boost-phase intercept of ballistic missiles. This is a critical missile-defense function, particularly when dealing with nuclear, chemical, or biological warheads. If not destroyed in boost, nuclear-tipped missiles may deploy decoys, and chemical or biological warfare payloads might be broken into small, separate submunitions or canister reentry vehicles, each of which is a lethal weapon that must be destroyed. 12 In such cases there is a high likelihood that defenses would be overwhelmed. Evolutionary Air and Space Global Laser Engagement (EAGLE) Space-based systems would be logical for this important mission.

**Free-electron lasers are best: speed, precision, affordability, continuous engagements and diversity**

David M.**Mason**, Lieutenant Colonel in the United States Air Force, Masters of Strategic Studies Degree from the Air War College **09** [Air War College Maxwell Air Force Base, “Directed Energy Weapon System for Ballistic Missile Defense”, February 2009, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA540023&Location=

U2&doc=GetTRDoc.pdf (Ghosh)]

During the past two decades, this technology has advanced considerably in areas such as power, beam control, and pointing and tracking techniques which enables the system to hit a target at great ranges.57 This energy can be used to engage satellites, aircraft, and vehicles, but the most promising aspect of this technology is the ability to destroy missiles traveling at mach or supersonic speeds. In addition to being able to being able to engage rapidly moving targets,lasers can be re-directed by mirrors to hit these targets that fall outside of line-of-sight range. This all can be donewithout compromising much of the beam’s initial power.58 The unique attributes of lasers has the potential to revolutionize missile defense operations. Those attributes include: 1. Speed of Light Capability: This represents a core significant advantage of lasers.With the potential to travel at 186,000 miles per second, directed energy offers the warfighter near-instantaneous options to destroy targets at great distances. Quite naturally, this attribute also greatly simplifies tracking and targeting of missiles while also greatly reducing target counter-measure techniques. 2. Precise and Adjustable Targeting: Directed energy offers extremely precise targeting effects, which are capable of delivering energy to a small spot on a missile. This phenomenon would cause a missile to undergo aerodynamic stress which would lead to catastrophic failure. A related feature of this characteristic is the ability to adjust the amount of energy required to successfully propagate through the atmosphere from surface locations. The free-electron laser is the only form of directed energy that has demonstrated that capability. 3. Affordability: Once deployed, lasers will be able to intercept missiles at relatively low costs per shot. Although the beam-generating system may be initially expensive to build and 15maintain, the price per engagement will be relatively cheap as compared to conventional systems.59 For example, the Missile Defense Agency conducted a missile intercept experiment back in December of 2008using a kinetic energy intercept vehicle. The total cost of the experiment ranged between $120 million and $150 million, although the Agency did employ several other defense systems to ensure a successful intercept.60 Navy surveillance ships and space-based command and control platforms provided a robust network for the experiment that assisted with launch intercept. 4. Repetitive Engagements: Laser have a great capacity for continuous engagements over an extended period of time,and are constrained only by the availability of power and the need to vent energy producing by-products such as heat. Conventional weapons, especially those firing precision-guided munitions, are constrained in the number of engagements it can execute. In additionto engaging threats,lasers can be used to detect, image, track, and illuminate targets. This process can work autonomously with the “kill laser” while also enabling the platform to lock onto a multiple number of missiles. 5. Weapon System Diversity: Directed energy systems can be placed on a variety of platforms to achieve optimum results. Airborne lasers are capable of attacking targets out to several hundred kilometers, while a ground-based platform could attack targets on a global scale. A complimentary network of space-based relay mirrors is required to extend a ground-based system to a global scale.

# \*\*Rogue States\*\*

# Rogue State 1AC

**No system exists now that can counter threats**

**Independent Working Group** (The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.2007(Collective report/study) “missile defense and the space relationship and the 21st century”**2007** <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

So far, however, the United States has stopped short of put­ting these principles into practice. Rather, the missile defense system that has emerged since President Bush’s historic De­cember 2002 announcement of an “initial set” of missile de­fense capabilities provides extremely limited coverage, and no global capability. Instead, by the administration’s own ad­mission, it is intended as a limited defense against a small, rogue state threat scenario. Left unaddressed are the evolv­ing missile arsenals of – and potential missile threats from – strategic competitors such as Russia and China as well as terrorists launching short-range missiles such as *Scuds* from off-shore vessels.

**The US will face a missile threat by 2015.**

Brinton **Turner,** SpaceNews staff writer, **10**

SpaceNews, “GOP Pledges To Fully Fund Missile Defense”, 9/27/10, <http://spacenews.com/policy/100927-gop-pledges-fund-missile-defense.html> [Marcus]

Republican members of the U.S. House of Representatives on Sept. 23 unveiled a new “Pledge to America” policy agenda that includes freezing nonmilitary spending and restoring missile defense funding that it says is needed to protect the United States from a ballistic missile attack from Iran. “There is real concern that while the threat from Iranian intercontinental ballistic missiles could materialize as early as 2015, the government’s missile defense policy is not projected to cover the U.S. homeland until 2020,” the document states. “We will work to ensure critical funding is restored to protect the U.S. homeland and our allies from missile threats from rogue states such as Iran and North Korea.” The administration of U.S. President Barack Obama last year overhauled plans for defending European allies and deployed forces from ballistic missiles. Under the previous administration’s plan, ground-based interceptors were to be placed in Poland in 2013. Obama’s plan will be implemented in four phases, starting with deploying Aegis Ballistic Missile Defense ships to European waters as soon as 2011 to defend against short- and medium-range threats. A new Aegis interceptor capable of defeating ICBMs is not planned to be ready until 2020. With the most recent U.S. intelligence estimates stating that Iran could have an ICBM capability by 2015, House Republicans say the United States may face a five-year vulnerability to an Iranian ICBM.

**Iran will attack once they have the technology, and they acknowledge the backlash to doing so.**

Jack **Spencer**, Research Fellow, Nuclear Energy Policy, Thomas A. Roe Institute for Economic Policy Studies, **2K**

Heritage Foundation, “America's Vulnerability to a Different Nuclear Threat: An Electromagnetic Pulse”, 5/26/2000, <http://www.heritage.org/Research/Reports/2000/05/Americas-Vulnerability-to-a-Different-Nuclear-Threat> [Marcus]

Scenario #5: A rogue leader wants to attack the United States but evade retaliation. Iran, which the 1998 Commission to Assess the Ballistic Missile Threat to the United States (the Rumsfeld Commission) reported "has the technical capability and resources to demonstrate an ICBM-range ballistic missile...within five years of the decision to deploy," decides to take hostile action against the United States after developing an ICBM.7 It knows that a direct nuclear attack on the United States would result in the destruction of Tehran.8 It launches two missiles with nuclear warheads that detonate 250 miles above Illinois and Wyoming. The United States does not retaliate because no one is immediately killed. Not knowing whether Iran has other nuclear warheads, the United States decides to limit its response against Iran rather than risk a direct nuclear attack on a U.S. city.

**No time to wait – missile defense is key to stop growing threats**

**Independent Working Group** (The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.2007(Collective report/study) “missile defense and the space relationship and the 21st century”**2007** <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

Given this multiplicity of ballistic missile threats, the United States must deploy a missile defense that deters hostile states from developing or acquiring missile capabilities that could threaten the United States, our allies and coalition partners, and our forces deployed abroad. Furthermore, our missile defense R&D programs, together with planned deployments, must be sufficiently robust so as to dissuade would-be missile possessors from attempting to challenge the United States. We must deter future enemies from acquiring ballistic mis­siles; just as in the past we dissuaded them from developing strategic bombers because of our ability to overwhelm such systems. Finally, our missile defense must be capable of de­feating ballistic missiles, whatever their range and type, that could be launched against us. As we dissuade future potential possessors, we must rec­ognize that threats are increasing at a pace that no longer allows the luxury of long lead times within which a missile de­fense could be developed and deployed. Therefore, the United States must develop and deploy rapidly a missile defense with global reach, capable of coping with threats against the Unit­ed States and our forces and allies *from any direction*, while we attempt simultaneously to dissuade hostile actors from acquiring missiles through our ability to render such invest­ments a poor use of limited resources. Additionally, given the uncertainty in predicting where, when, and by whom missiles might be launched – and what their targets may be – there is a need for constant defenses capable of intercepting missiles irrespective of their geographic origin.

**Space NMD deters rogue states from launching ballistic missiles toward the US.**

Lorinda A.**Frederick**, Lieutenant Colonel in the Air Force Space Command, Masters in Advanced Air and Space Studies,**09** [Air & Space Power Journal, Volume 23, No. 3, “Deterrence and Space-Based Missile Defense”, Fall 2009, http://www.airpower.au.af.mil/airchronicles/apj/apj09

/fal09/frederick.html#frederick (Ghosh)]

Cooperation on missile defense initiatives could increase global stability. By banding together in coalitions, countries can deter war by repelling an attack against any member.52 States and rogue elements will not be able to strike surreptitiously if they know that the international community could quickly discern the origin of any launch and compute potential impact points. Attempts by a rogue element to destabilize the region through the attribution of attacks to a state may initially promote the rogue elements own agenda. However, data provided by missile defense and other sensors can refute such claims. The shared international ability to identify launch and impact points might deter states and rogue elements from launching in the first place. The more nations cooperate with each other, the more stable the world becomes. Policy makers need to invest in the development of many different capabilities, includingSBMD, to negate missiles in their boost phase and use the information gleaned from these developments to inform decisions. One approach involves bringing a system to the prototype stage for testing and accurately gauging its performance. This approach could let the United States invest in only a limited number of prototypes, thus deferring large-scale production to allow further research, development, and testing. These efforts could decrease the risk of failure during production and deployment.53 When the need arises, the United States should capitalize on preexisting prototypes as long as the industrial base could support rapid production. By funding R&D for SBMD, the UnitedStateswould ensure the viability of these technologies. The DOD cannot expect developments in commercial industry to be available for national security purposes. Competitive pressures force industry to fund near-term R&D programs and choose near-term survival over long-term possibilities.54Applied research into SBMD technologies would allow the UnitedStatesto gain more knowledge about boost-phase defenses. America will get as much R&D in SBMD technologies as it is willing to fund.

**Even if countries attack, Space NMD would destroy the missiles in boost phase Only SBLs can knock down missiles before they reach boost mode.**

Matthew **Mowthorpe**, writer for Air and Space Power Journal (Branch of Air Force Research Institute) **02**

Air and Space Power Journal, “The Revolution in Military Affairs and Directed Energy Weapons”, 3/8/02, <http://www.airpower.maxwell.af.mil/airchronicles/cc/mowthorpe02.html> [Marcus)

SBLs would be located on satellites placed in low-earth orbit. The type of orbit would depend on the nature of the threat. A satellite’s orbital altitude is an important factor since it must place the laser, as frequently as possible, in a position where it can destroy the largest number of missiles in their boost phase. The satellite needs to be at an altitude sufficient to enable it to intercept the farthest boosting missile it can see without focusing the beam in such a way that closer and more vulnerable missiles are missed. The optimal altitude depends upon the height at which the booster's engines stop firing, the capacity of the laser, and the hardness of the missiles. When the Soviet Union’s ICBMs were considered the main threat, polar orbits were chosen since they provided good coverage of the northern latitudes. However, polar orbits concentrate SBLs at the poles where there are no ballistic missiles deployed. The optimum configuration would be a number of orbital planes inclined about 70o to the equator.7 It is generally accepted that SBLs would be incapable of lasing a missile re-entry vehicle with a destructive dose of energy during its midcourse and re-entry trajectory. Re-entry vehicles are hardened to survive the launch, midcourse and thermal re-entry phases of missile flight, then successfully detonate and destroy even hard targets.8 The missile must therefore be targeted during the time when it is above the clouds and atmosphere and before it deploys re-entry vehicles.

**A successful attack on the US would empower other states to attack as well – causes global conflict.**

**Goldstein 07** - Professor of Global Politics and International Relations @ University of Pennsylvania [Avery Goldstein, “Power transitions, institutions, and China's rise in East Asia: Theoretical expectations and evidence,” [Journal of Strategic Studies](http://www.informaworld.com/smpp/title~db%3Dall~content%3Dt713636064), Volume [30](http://www.informaworld.com/smpp/title~db%3Dall~content%3Dt713636064~tab%3Dissueslist~branches%3D30#v30), Issue [4 & 5](http://www.informaworld.com/smpp/title~db%3Dall~content%3Dg780703608) August 2007, pages 639 – 682]

Two closely related, though distinct, theoretical arguments focus explicitly on the consequences for international politics of a shift in power between a dominant state and a rising power. In War and Change in World Politics, Robert Gilpin suggested that peace prevails when a dominant state’s capabilities enable it to ‘govern’ an international order that it has shaped. Over time, however, as **economic and tech**nological **diffusion** proceeds during eras of peace and development, other states are empowered. Moreover, the burdens of international governance drain and distract the reigning hegemon, and challengers eventually emerge who seek to rewrite the rules of governance. As the power advantage of the erstwhile hegemon ebbs, it may **become *desperate enough to resort to*** the ultima ratio of international politics, ***force***, to forestall the increasingly urgent demands of a rising challenger. Or as the power of the challenger rises, it may be tempted to press its case with threats to use force. It is the rise and fall of the great powers that creates the circumstances under which major wars, what Gilpin labels **‘hegemonic wars’**, break out.13

Gilpin’s argument logically encourages pessimism about the implications of a rising China. It leads to the expectation that international trade, investment, and technology transfer will result in a steady **diffusion of American economic power**, benefiting the rapidly developing states of the world, including China. As **the US** simultaneously scurries to put out the many brushfires that threaten its far-flung global interests (i.e., the classic problem of overextension), it **will be unable to devote sufficient resources to maintain or restore** its former advantage over emerging competitors like China. While the erosion of the once clear American advantage plays itself out, the US will find it ever more difficult to preserve the order in Asia that it created during its era of preponderance**. The expectation is an** **increase in the likelihood for the use of force** – **either by a** Chinese **challenger** able to field a stronger military in support of its demands for greater influence over international arrangements in Asia, **or by a besieged American hegemon desperate to head off further decline**. Among the trends that alarm those who would look at Asia through the lens of Gilpin’s theory are China’s expanding share of world trade and wealth (much of it resulting from the gains made possible by the international economic order a dominant US established); its acquisition of technology in key sectors that have both civilian and military applications (e.g., information, communications, and electronics linked with to forestall, and the challenger becomes increasingly determined to realize the transition to a new international order whose contours it will define. the ‘revolution in military affairs’); and an expanding military burden for the US (as it copes with the challenges of its global war on terrorism and especially its struggle in Iraq) that limits the resources it can devote to preserving its interests in East Asia.14

Although similar to Gilpin’s work insofar as it emphasizes the importance of shifts in the capabilities of a dominant state and a rising challenger, the power-transition theory A. F. K. Organski and Jacek Kugler present in The War Ledger focuses more closely on the allegedly dangerous phenomenon of ‘crossover’– the point at which a dissatisfied challenger is about to overtake the established leading state.15 In such cases, **when the power gap narrows**, the dominant state becomes increasingly desperate.

Though suggesting why a rising China may ultimately present grave dangers for international peace when its capabilities make it a peer competitor of America, Organski and Kugler’s power-transition theory is less clear about the dangers while a potential challenger still lags far behind and faces a difficult struggle to catch up. This clarification is important in thinking about the theory’s relevance to interpreting China’s rise because a broad consensus prevails among analysts that Chinese military capabilities are at a minimum two decades from putting it in a league with the US in Asia.16 Their theory, then, points with alarm to trends in China’s growing wealth and power relative to the United States, but especially looks ahead to what it sees as the period of maximum danger – that time when a dissatisfied China could be in a position to overtake the US on dimensions believed crucial for assessing power. Reports beginning in the mid-1990s that offered extrapolations suggesting China’s growth would give it the world’s largest gross domestic product (GDP aggregate, not per capita) sometime in the **first** few **decades of the twentieth century** fed these sorts of concerns about a potentially dangerous challenge to American leadership in Asia.17

The huge gap between Chinese and American military capabilities (especially in terms of technological sophistication) has so far discouraged prediction of comparably disquieting trends on this dimension, but inklings of similar concerns may be reflected in occasionally alarmist reports about purchases of advanced Russian air and naval equipment, as well as concern that Chinese espionage may have undermined the American advantage in nuclear and missile technology, and speculation about the potential military purposes of China’s manned space program.18 Moreover, because a dominant state may react to the prospect of a crossover and believe that it is wiser to embrace the logic of **preventive war** and act early to delay a transition while the task is more manageable, Organski and Kugler’s power-transition theory also provides grounds for **concern about the period prior to the possible crossover**.19 pg. 647-650

Lack of leadership leads to nuclear exchanges.

**Khalilzad ‘95** (Zalmay, RAND Corporation, The Washington Quarterly, Spring 1995)

On balance, this is the best long-term guiding principle and vision. Such a vision is desirable not as an end in itself, but because a world in which the United States exercises leadership would have tremendous advantages. First, the global environment would be more open and more receptive toAmerican values -- democracy, free markets, and the rule of law. Second, such a world would have a better chance of dealing cooperatively with the world's major problems, such as nuclear proliferation, threats of regional hegemonyby renegade states, and low-level conflicts.Finally,U.S. leadership would help preclude the rise of another hostile global rival, enabling the United States and the world to avoid another global cold or hot war and all the attendant dangers, including a global nuclear exchange.U.S. leadership would therefore be more conducive to global stability than a bipolar or a multipolar balance of power system.

**US retaliation leads to Middle East conflict.**

Michael **Chossudovsky**, Global Research staff writer, director of the Centre for Research on Globalization (CRG), Montreal, **10**

Global Research, “Preparing for World War III, Targeting Iran”, 8/1/10, <http://www.globalresearch.ca/index.php?aid=20403&context=va> [Marcus]

Were Iran to be the object of a "pre-emptive" aerial attack by allied forces, the entire region, from the Eastern Mediterranean to China's Western frontier with Afghanistan and Pakistan, would flare up, leading us potentially into a World War III scenario. The war would also extend into Lebanon and Syria.

Global nuclear war

John Steinback, converge.org staff writer, 2002

Converge, “Israeli Weapons of Mass Destruction: a Threat to Peace”, 3/3/02, <http://www.converge.org.nz/pma/mat0036.htm>)

Meanwhile, the existence of an arsenal of mass destruction in such an unstable region in turn has serious implications for future arms control and disarmament negotiations, and even the threat of nuclear war. Seymour Hersh warns, "Should war break out in the Middle East again,... or should any Arab nation fire missiles against Israel, as the Iraqis did, a nuclear escalation, once unthinkable except as a last resort, would now be a strong probability."(41) and Ezar Weissman, Israel's current President said "The nuclear issue is gaining momentum (and the) next war will not be conventional."(42) Russia and before it the Soviet Union has long been a major (if not the major) target of Israeli nukes. It is widely reported that the principal purpose of Jonathan Pollard's spying for Israel was to furnish satellite images of Soviet targets and other super sensitive data relating to U.S. nuclear targeting strategy. (43) (Since launching its own satellite in 1988, Israel no longer needs U.S. spy secrets.) Israeli nukes aimed at the Russian heartland seriously complicate disarmament and arms control negotiations and, at the very least, the unilateral possession of nuclear weaponsby Israel is enormously destabilizing, anddramatically lowers the threshold for their actual use, if not for all out nuclear war. In the words of Mark Gaffney, "... if the familar pattern(Israel refining its weapons of mass destruction with U.S. complicity) is not reversed soon- for whatever reason- the deepening Middle East conflict could trigger a world conflagration."

# Ext – Iran Threat

**Iran is a ballistic missile threat, the US must act now**

Greg, **Bruno,** Iran's Ballistic Missile Program, **09,** <http://www.gif.org.tr/eng/pdf/Irans_Ballistic_Missile_Program.pdf>

For a decade U.S. intelligence agencies have predicted a looming Iranian missile threat (Globalsecurity.org) to the United States. In 1999 and again in 2001, intelligence experts put 2015 as a possible date for development of an Iranian ICBM. Coupled with the belief that Iran covets a nuclear weapon, this assessment has long driven U.S. interests in a workable missile defense system, at home and for Europe. Yet while many analysts say Iran is making incremental progress (BBC) toward a viable long-range missile program, there remains considerable dispute over what kinds of systems Iran possesses, how capable the systems are, and whether advancement is possible without significant foreign assistance. Hildreth says "there is little transparency in Iran's ballistic missile programs," making judgments difficult. Adding to the uncertainty, Hildreth says, are Tehran's frequent attempts at deception. "Iran has a demonstrated history of lying, misleading, and misinforming about their missile- and space-launch tests," he says. "It's clear that they have done that in the past."

# Ext – High Risk

**The US faces a large risk of a ballistic missile attack now.**

Steven **Lambakis**, Senior Analyst and Managing Editor, *Comparative Strategy,* **07**

Hoover Institution, “Missile Defense From Space”, 3/2007, <http://www.gees.org/documentos/Documen-02177.pdf> [Marcus]

The ballistic missile threat to the United States, its deployed forces, and allies and friends has been well defined.6 This is a threat we downplay at our peril. Nations such as North Korea and Iran — which also have significant programs to develop nuclear, biological, and chemical weapons — as well as nonstate groups can pose significant, even catastrophic, dangers to the U.S. homeland, our troops, and our allies. Russia and China, two militarily powerful nations in transition, have advanced ballistic missile modernization and countermeasure programs. Indeed, despite the reality that trade relations with China continue to expand, its rapid military modernization represents a potentially serious threat. Whether these nations become deadly adversaries hinges on nothing more than a political change of heart in their respective capitals. The intelligence community’s ability to provide timely and accurate estimates of ballistic missile threats is, by many measures, poor. Our leaders have been consistently surprised by foreign ballistic missile developments. Shortened development timelines and the ability to move or import operational missiles, buy components, and hire missile experts from abroad mean the United States may have little or no warning before it is threatened or attacked. There is no escaping the uncertainty we face.

# Ext – Solves Attacks

**Space NMD prevents other countries from launching attacks – threats of war.**

Everett **Dolman**, Associate Professor of Comparative Military Studies at the U.S. Air Force's School of Advanced Air and Space Studies **06**

SAIS Review, “U.S. Military Transformation and Weapons in Space”, 2006, SAIS Review 26.1 (2006) 163-175[Marcus]

To make the case fully, a brief discussion of operational warfare is necessary. I begin by defining the purpose of military strategy, which is "to manipulate the context of military conflict in order to maximize the advantages of one's force structure."4 Note that it is not to win wars, nor is the purpose of military force "to be used" for this or that effect. Such definitions are absurd. It would mean that at any moment an armed force is not actively engaged in battle, it is not fulfilling its purpose. Any moment that a B-1 is not dropping bombs, for example, it is wasted. Wars so construed would be waged solely for the purpose of making war, complying with Clausewitz's under-appreciated dictum that "war may have its own grammar, but not its own logic."5 The purpose of aircraft is thus not to bomb. The purpose of space weapons will not be to lase or in any other manner engage a target. These are effects that may support the strategist's true purposes, as are freedom of movement in and maximization of support from air and space. Military force may not be the only means for obtaining such effects, but for the military planner, it is the only means available. This is where criticism leveled at military planners preparing for the use of space weapons continues to astonish. It is not the business of military strategists to dictate when and where military means should be employed. That responsibility lies with the political leadership. The military planner's duty is to be prepared to use military means when and where instructed. Thus the Air Force's duty is to plan for and prepare to use the military means in its control to most effectively accomplish its assigned tasks, within the limits placed upon it—including efforts to minimize collateral damage and loss of life. Therefore, we should not be discussing the correctness of the military's planning to use weapons to engage in operations it has been assigned. If we decide we do not want weapons in space, then the military should not be given the responsibility of protecting our interests there. To do otherwise is absurd. Imagine relying on the U.S. Navy to guarantee freedom of the seas for American interests, but ordering it to so without the use of warships or any other form of martial force—even the latent threat of such force in reserve. We would be asking the Navy to guarantee a vital national interest without employing the only means at its disposal to do so. Thus, the Navy is equipped with the most modern weaponry, with which it trains incessantly, so that it may be available to perform the functions assigned to it. This is because the traditional purpose of military power is to provide an option for the political decision-maker to achieve the political ends of the state. The more efficient the military is in its preparations, the more effectively the political decision-maker can employ it as a threat for, or in the conduct of, war. Critically, military power is but one means of conducting diplomacy. It is most useful in the threat and conduct of war, but war is not the object of military force. War or threats of war (potential or latent violence) are policy instruments that the political authority needs readily available to conduct the affairs of state properly and fully. In theory, then, [End Page 166] the manner in which military power supports the political aim is through maximizing—or more precisely, being prepared to maximize—violence at the direction of the state.

# Ext – Solves Multiple Threats

**Multiple threats exist that can be countered by missile defense**

**Independent Working Group (**The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collective report**/**study) “missile defense and the space relationship and the 21st century”2007 <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

Yet there is ample reason for concern. The threat envi­ronment confronting the United States in the twenty-first century differs fundamentally from that of the Cold War. An unprecedented number of international actors have now acquired – or are seeking to acquire – ballistic mis­siles and weapons of mass destruction. Rogue states, chief among them North Korea and Iran, have placed a premi­um on the acquisition of nuclear, chemical and biological weapons and the means to deliver them, and are moving rapidly toward that goal. Russia and China, traditional competitors of the United States, continue to expand the range and sophistication of their strategic arsenals. And a number of asymmetric threats – including the possibil­ity of weapons of mass destruction (WMD) acquisition by terrorist groups or the decimation of American critical in­frastructure as a result of electromagnetic pulse (EMP) – now pose a direct threat to the safety and security of the United States. Moreover, the number and sophistication of these threats are evolving at a pace that no longer allows the luxury of long lead times for the development and de­ployment of defenses. In order to address these increasingly complex and multifaceted dangers, the United States must deploy a system that is capable of comprehensive protection of the American homeland as well as its overseas forces and its allies from the threat of ballistic missile attack. Over the long term, U.S. defenses also must be able to dissuade would-be missile possessors from costly investments in missile technologies, and to deter future adversaries from confronting the United States with WMD or ballistic mis­siles. Our strategic objective should be to make it impos­sible for any adversary to influence U.S. decision-making in times of conflict through the use of ballistic missiles or WMD blackmail.

# Ext – Iran Retaliate

**The US would take any opportunity to retaliate against Iran.**

Dave **Eriqat,** countercurrents.org staff writer, **06**

Countercurrents, “Why The United States Will Attack Iran”, 4/8/06, <http://www.countercurrents.org/iran-eriqat080406.htm> [Marcus]

Iraq is clearly a disaster from a humanitarian perspective, as well as on the military front. Iraq is also becoming a political disaster for Republicans in the U.S. Not only do Republicans face losing control of Congress, but with President Bush’s approval ratings in the toilet, Republicans may well lose the White House too. The lesson of the staged 9/11 and the ensuing war in Iraq is clear: Americans will rally around the president and his party during distressing times. What could be more opportune for this president and his party than another staged 9/11-like event, followed by another war of retaliation, this time against Iran? I don’t believe another fake 9/11 is actually necessary for the president to launch another war in the Middle East. Just when I was beginning to think that the precipitously declining support – down to about one third of the public – for the war in Iraq was an indication that Americans were wising up, recent polls suggest that more than half of Americans support a new war against Iran! How can they favor starting a new war even as their support for the last one is declining? I was baffled by this inconsistency until I realized that the declining support for the war in Iraq is not a rejection of war, but a rejection of losing wars. Americans are perfectly fond of war as long as they’re winning. In any case, there seems to be ample support from the American public for a new war against Iran. Another fake 9/11 attack is not necessary, though it may occur anyway in order to further the totalitarian ambitions of the government.

# \*\*\*Leadership\*\*\*

# Leadership 1AC

**The United States is falling behind in Space leadership now.**

William John **Cox, ’11**, public interest lawyer, author and political activist Tuesday, Mar 29, 2011, (Consortium News, The Race for Solar Energy from Space, <http://axisoflogic.com/artman/publish/Article_62659.shtml>)

The failure of the General Electric nuclear reactors in Japan to safely shut down after the 9.0 Tahoku earthquake – on the heels of last year’s catastrophic Deepwater Horizon oil spill in the Gulf of Mexico and the deadly methane gas explosion in Massey’s West Virginia coal mine – underscores the grave dangers to human society posed by current energy production methods. In Japan, the radiation plume from melting reactor cores and the smoke of burning spent fuel rods threaten the lives of the unborn; yet, they point in the direction of a logical alternative to these failed policies – the generation of an inexhaustible, safe, pollution-free supply of energy from outer space. Presently, only the top industrialized nations have the technological, industrial and economic power to compete in the race for space-solar energy, **with Japan occupying the inside track** in spite of, and perhaps because of, the current disaster. Japan is the only nation that has a dedicated space-solar energy program. Japan also is highly motivated to change directions. China, which has launched astronauts into an earth orbit and is rapidly become the world’s leader in the production of wind and solar generation products**, will undoubtedly become a strong competitor**.  However, the United States, which should have every advantage in the race, is most likely to **stumble out of the gate and waste the best chance it has** to solve its economic, energy, political and military problems.

Space BMD restores us Leadership in space

Dr. Steven **Lambakis**, Senior Defense Analyst at the National Institute for Public Policy, 20**07**. “Missile Defense from Space,” <http://www.gees.org/documentos/Documen-02177.pdf>

Our choices are fundamental to making moral judgments. The moral issues surrounding a national security crisis are tied to considerations of operational effectiveness. Are we doing our best to provide protection against some of the worst weapons imaginable? What would the consequences of not acting be, or of not being able to act because of a blackmail threat? What would be the result if Washington were unable to respond to increased terrorist activity worldwide or an upswing in the global weapons of mass destruction trade? A space-based layer would reinforce American strength, which in turn would allow the U.S. to better defend its interests and pursue its foreign policy goals. A powerful and influential United States is good for world peace, stability, and enforcing the rule of law internationally.

**Leadership in space is vital to all aspects of American leadership and economic well-being.**

Christopher **Petras**, Chief of Operations Law for United States Space Command, Fall 20**02** (*Journal of Air Law*

*and Commerce*, The Use of Force in Response to Cyber-Attack on Commercial Space Systems—Reexamining

“Self-Defense” in Outer Space in Light of the Convergence of U.S. Military and Commercial Space Activities, Pg.

8)

While the phrase "space control capabilities [and] military measures" is arguably a euphemism for "space and terrestrial force,"

the 1996 policy left the question of the use of force in response to an attack on U.S. space assets awash in verbiage. By the end

of the decade, however, the expanded commercial use of space, and the growing dependence of the military on the commercial space sector to provide essential services, gave rise to renewed concern over the vulnerability of the nation's space systems to attack. 81 So, in 1999, DoD promulgated its current space policy, which clarified the issue: Space is a medium like the land, sea, and air within which military activities shall be conducted to achieve U.S. national security objectives. The ability to access and utilize space is a vital national interest because many of the activities conducted in the [\*1231] medium are critical to U.S. national security and economic well-being. Ensuring the freedom of space and protecting U.S. national security interests in the medium are priorities for space and space-related activities. U.S. space systems are national property afforded the right of passage through and operations in space without interference, in accordance with [the National Space Policy (1996)]. Purposeful interference with U.S. space systems will be viewed as an infringement on our sovereign rights. The U.S. may take all appropriate self-defense measures, including... the use of force, to respond to such an infringement on U.S. rights. 82Thus, under the new DoD policy, it is now clear that the United States construes the "inherent right of self-defense" as not only allowing the use of military force in response to attacks on the nation's military space systems, but in response to attacks against U.S. commercial interests and investments in space as well. 83

**infrastructure is key to prevent a second Pearl Harbor in space, maintain U.S. leadership, and will not lead to a new arms race or space war. Despite discussion of a new UN treaty, weaponization by Russia and China is inevitable - failure to act carries the greatest risk of conflict.**

Peter **Brookes** is a Heritage Foundation senior fellow, June 7, **2005**, (“Militarizing Space,” [http://www.heritage.org/Press/Commentary/ed060705a.cfm)](http://www.heritage.org/Press/Commentary/ed060705a.cfm%29)

The latest hysteria surrounds the Bush administration's soon-to-be-issued National Space Policy — the first NSP update since the Clinton administration's in 1996. Three years in the making, the new doctrine will reportedly permit the development of weapons to protect U.S. satellites. Without having seen the final presidential policy decision, the arms-control fanatics are already condemning the new policy with frantic cries of "arms race," "strategic instability" and "militarizing space." Fretting and fearmongering aside, the fact is that the "final frontier" is critical to our national defense. We'd better make darn sure we maintain our competitive edge there. Space is the ultimate military high ground — and critical to maintaining the supremacy (in communications, reconnaissance and so much else) of our GIs. It doesn't take a rocket scientist to figure out that whoever holds the upper hand there will hold the upper hand on Earth. If we don't maintain our space superiority, others, such as the Chinese and the Russians, will gladly replace us — guaranteed. The "militarization" of space? Already a fact. Hundreds of military-related communications, navigation and intelligence satellites are in orbit, from a number of nations. The question turns on "weaponizing" space — that is, deploying offensive and defensive space weapons that would protect a nation's Earth- and space-based interests and assets or strike Earth-based targets. Such Star Wars-like weapons might include ground- or satellite-based lasers or kinetic-energy weapons able to incapacitate (kill) hostile satellites and ballistic missiles en route to their targets. It might also involve space-based hypervelocity metal rods — "Rods from God" — designed to strike ground targets at 7,200 mph (120 miles per minute) with the strength of a nuclear weapon but without the radioactive fallout. Last month, White House spokesman Scott McClellan told reporters that the Bush NSP actually wasn't considering weaponizing space but would advocate developing means to defend our critical — but now defenseless — space infrastructure from attack. (Left unsaid: R&D on other space systems will surely continue.) Opponents of the new policy clamor that a space arms race will result from even that policy shift: China, Russia, Japan and even the European Union will surely be provoked into following our lead. But if we leave the high ground open, what's to stop others from seizing it? The critics' answer: another U.N. arms control treaty. Arms controllers also argue that space-based weapons are inefficient and expensive relative to conventional weapons. All these arguments are weak — at best. A new weapon system will cause an arms race? It ain't necessarily so. Case in point: For decades, the arms controllers railed against ballistic missile defense, warning that it would grossly destabilize relations with China and Russia and spark an arms race such as the world has never seen. Yet the Bush administration's initial deployment of missile defense hasn't caused an arms race or made relations with Beijing and Moscow any tougher than they already were. It has, however, improved our national security by providing the first protection against ballistic missiles — ever. Space weapons more expensive than conventional weapons? Sure, a satellite costs more than a tank. And a tank costs more than a cavalry horse, a rifle more than a rock. The most expensive weapon is the one that doesn't do the job. What price are the opponents of a more forward-leaning space policy willing to put on U.S. national security? As for the idea of any treaty preventing the deployment of weapons into space . . . well, tell that to North Korea and Iran — nations undeterred by the likes of the Nuclear Non-Proliferation Treaty. More, the current U.N. (draft) treaty to prohibit the weaponization of space was introduced by China and Russia — the two nations most active in space today. Only the naive

would argue that Beijing and Moscow wouldn't deploy space weapons today if they could. The treaty is merely their diplomatic gambit to buy time to develop their own programs. That work continues apace. Last year's Pentagon report on Chinese military power says that China, in addition to improving its satellite intelligence and reconnaissance capability, is "clearly working on, and plans to field, ASATs [anti-satellite systems]." Space is critical to American national security. No nation relies more on space than the United States — and our potential enemies know this. Failure to protect our space infrastructure would only invite a Pearl Harbor in space, leaving us deaf, dumb and blind — and at war. Maintaining America's military pre-eminence — in space as on land, at sea and in the air — is a necessity.

# Warming

US military power and leadership is key to solve climate change.

Maybee 8 (Sean C, US Navy commander, p. 98, http://www.ndu.edu/inss/Press/jfq\_pages/i49.htm)

For the purpose of this essay, national security is defined as the need to maintain the safety, prosperity, and survival of the nation-state through the use of instruments of national power: diplomatic, military, economic, and informational power will be the drivers of GCC responses as they provide the needed resources ideas and technology. It will be through invoking military and diplomatic power that resources are used and new ideas are implemented to overcome any GCC challenges. In addition to fighting and winning the nation’s wars, the US military has a long history of humanitarian assistance and disaster relief, but the potential impacts of GCC should lead national security policymakers to consider how environmental security will play a role in the future.

US leadership is key to solve warming.

Maybee 8 (Sean C, US Navy commander, p. 98, http://www.ndu.edu/inss/Press/jfq\_pages/i49.htm)

The national security implications of GCC pose unique challenges for the United States in part because it is best suited to lead counter-GCC efforts. The Nation has the economic and informational power to develop and resource effective methods and the international status to foster global cooperation and implementation. The U.S. military already has a robust capacity to respond and could continue to develop and use it to help other nations to build that capacity. In addition, by addressing environmental security, the United States may foster trust and cooperation while beginning to anticipate some GCC effects.

# Space

First, it is crucial that the United States maintain leadership in Space to deter conflicts and prevent other count

[Everett 5(Dolman, C.](http://www.spacedebate.org/author/1064) "[Strategy Lost: Taking the Middle Road to Nowhere](http://www.peterson.af.mil/hqafspc/news/images/JournalWinter05Web.pdf)." [High Frontier Journal](http://www.spacedebate.org/source/High%20Frontier%20Journal). Vol. 3, No. 1 Winter, 2K5)

Common to all hedging strategy proponents is the fear that placing weapons in space will spur a new arms race. Unfortunately, such a strategy increases the likelihood of a space arms race if and when space weapons are ultimately deployed, as the only plausible response by the US would be to at least match the opposing capabilities. This dithering approach blatantly ignores the current real world situation. At present, the US has no peer competitors in space. For the US to refrain from weaponizing until another state proves the capacity to challenge it allows for potential enemies to catch up to American capabilities. At a minimum, there is no risk for potential peer competitors to try. On the other hand, should the US reject the hedging strategy and unilaterally deploy weapons in space, other states may rationally decide not to compete. The cost of entry will simply be too great; the probability of failure palpable. In other words, the fear of an arms race in space, the most powerful argument in favor of the hedging plan, is most likely if the US follows its counsel.

Second, this leads to global nuclear war.

Hitchens 3 (Theresa, Editor of Defense News, Director of Center for Defense Information, Former director of British American Security Information Council -think tank based in Washington and London. October 2. <http://www.cdi.org/friendlyversion/printversion.cfm?documentID=1745>)

The negative consequences of a space arms race are hard to exaggerate, given the inherent offense-dominant nature of space warfare. Space weapons, like anything else on orbit, are inherently vulnerable and, therefore, best exploited as first-strike weapons. Thus, as Michael Krepon and Chris Clary argue in their monograph, “Space Assurance or Space Dominance,” the hair-trigger postures of the nuclear competition between the United States and Russia during the Cold War would be elevated to the “ultimate high ground” of space. Furthermore, any conflict involving ASAT use is likely to highly escalatory, in particular among nuclear weapons states, as the objective of an attacker would be to eliminate the other side’s capabilities to respond either in kind or on the ground by taking out satellites providing surveillance, communications and targeting. Indeed, U.S. Air Force officials participating in space wargames have discovered that war in space rapidly deteriorates into all-out nuclear war, precisely because it quickly becomes impossible to know if the other side has gone nuclear. Aviation Week and Space Technology quoted one gamer as saying simply: “[If] I don’t know what’s going on, I have no choice but to hit everything, using everything I have.” This should not be surprising to anyone – the United States and the Soviet Union found this out very early in the Cold War, and thus took measures to ensure transparency, such as placing emphasis on early warning radars, developing the “hotline” and pledging to non-interference with national technical means of verification under arms control treaties.

# Econ

First, Hegemony is key to trade and interdependence—stability opens conditions necessary for growth.

Walt 2 (Stephen, JFKSchool of Government Professor at Harvard Univiversity Naval War College Review, Spring, www.nwc.navy.mil/press/Review/2002/spring/art1-sp2.htm)

By facilitating the development of a more open and liberal world economy, American primacy also fosters global prosperity. Economic interdependence is often said to be a cause of world peace, but it is more accurate to say that peace encourages interdependence-by making it easier for states to accept the potential vulnerabilities of extensive international intercourse. Investors are more willing to send money abroad when the danger of war is remote, and states worry less about being dependent on others when they are not concerned that these connections might be severed. When states are relatively secure, they will also be less fixated on how the gains from cooperation are distributed. In particular, they are less likely to worry that extensive cooperation will benefit others more and thereby place them at a relative disadvantage over time. By providing a tranquil international environment, in short, U.S. primacy has created political conditions that are conducive to expanding global trade and investment. Indeed, American primacy was a prerequisite for the creation and gradual expansion of the European Union, which is often touted as a triumph of economic self-interest over historical rivalries. Because the United States was there to protect the Europeans from the Soviet Union and from each other, they could safely ignore the balance of power within Western Europe and concentrate on expanding their overall level of economic integration. The expansion of world trade has been a major source of increased global prosperity, and U.S. primacy is one of the central pillars upon which that system rests. The United States also played a leading role in establishing the various institutions that regulate and manage the world economy. As a number of commentators have noted, the current era of “globalization” is itself partly an artifact of American power. As Thomas Friedman puts it, “Without America on duty, there will be no America Online.”

Second, A global economic collapse would escalate to full scale conflict and rapid extinction

Bearden 2k (Thomas, “The Unnecessary Energy Crisis”, Free Republic, June 24, lexis)

History bears out that desperate nations take desperate actions. Prior to the final economic collapse, the stress on nations will have increased the intensity and number of their conflicts, to the point where the arsenals of weapons of mass destruction (WMD) now possessed by some 25 nations, are almost certain to be released. As an example, suppose a starving North Korea launches nuclear weapons upon Japan and South Korea, including U.S. forces there, in a spasmodic suicidal response. Or suppose a desperate China-whose long-range nuclear missiles (some) can reach the United States-attacks Taiwan. In addition to immediate responses, the mutual treaties involved in such scenarios will quickly draw other nations into the conflict, escalating it significantly. Strategic nuclear studies have shown for decades that, under such extreme stress conditions, once a few nukes are launched, adversaries and potential adversaries are then compelled to launch on perception of preparations by one's adversary. The real legacy of the MAD concept is this side of the MAD coin that is almost never discussed. Without effective defense, the only chance a nation has to survive at all is to launch immediate full-bore pre-emptive strikes and try to take out its perceived foes as rapidly and massively as possible. As the studies showed, rapid escalation to full WMD exchange occurs. Today, a great percent of the WMD arsenals that will be unleashed, are already on site within the United States itself. The resulting great Armageddon will destroy civilization as we know it, and perhaps most of the biosphere, at least for many decades.

Heg Good Laundry List

Heg is necessary to prevent WMD prolif, promote human rights, and promote democracy.

Walt 2 (Stephen, Professor of International Affairs at Harvard's Kennedy School of Government. "American Primacy: Its Prospects and Pitfalls." Naval War College Review, Vol. 55, Iss. 2. pg. 9 (20 pages) Spring 2002.

Proquest)

Thus, anyone who thinks that the United States should try to discourage the spread of weapons of mass destruction, promote human rights, advance the cause of democracy, or pursue any other positive political goal should recognize that the nation's ability to do so rests primarily upon its power. The United States would accomplish far less if it were weaker, and it would discover that other states were setting the agenda of world politics if its own power were to decline. As Harry Truman put it over fifty years ago, "Peace must be built upon power, as well as upon good will and good deeds."17 The bottom line is clear. Even in a world with nuclear weapons, extensive economic ties, rapid communications, an increasingly vocal chorus of nongovernmental organizations, and other such novel features, power still matters, and primacy is still preferable. People running for president do not declare that their main goal as commander in chief would be to move the United States into the number-two position. They understand, as do most Americans, that being number one is a luxury they should try very hard to keep.

# \*\*China\*\*

# China 1AC

**China’s space capabilities and defense industries threaten US hegemony**

Erik, **Quigley**, Air Command and Staff Coll Maxwell afb al, **09** “Geo-Political Considerations to China's Rise in Space Power”, 4/2009, http://handle.dtic.mil/100.2/ADA539644

“Space is now considered to be one of China’s strategic frontiers‟…military satellites are now legitimate targets in war.” Steven Lambakis, author, On the Edge of Earth, The Future of American Space Power Now more than ever, China‘s military, economy, and resource consumption is growing at a monumental pace. China has the desire to become a world recognized regional superpower in the 21st century. As a result, China is posturing itself with a peaceful rise‘grand strategy that will eventually compete with the US for hegemon status. Polls show that half of the American public believes China will pose ―the biggest challenge to U.S. world power status in the next hundred years. Robert Kagan, in an article entitled ―*What China Knows That We Don‟t”*, contends that China aims ―in the near-term to replace the United States as the dominant power in East Asia and in the long-term to challenge America‘s position as the dominant power. China‘s recent rise in space capability can be attributable to three areas: one, by its recent booming economy, second, by its recent technological revolution, and third, by its cultural ideology or tradition. Economically, China has the 4th highest GDP in the world with $3.3 trillion dollars, only slightly behind Germany and Japan compared to the US. Technologically, ever since the late 1990s, the Chinese continue to focus on a fundamental restructuring of its defense industry evidenced by its shifting control of defense enterprises from the military to the civilian government. Culturally, China will likely choose to remain consistent with its ‗People‘s War‘ strategy to only engage in military action when they know they can succeed. China is therefore building up its space military capability to support this cultural ideology.

**Chinese ASATS poses a militarized space threat - ASAT is a weapon**

Erik, **Quigley,** Air Command and Staff Coll Maxwell afb al, **09** “Geo-Political Considerations to China's Rise in Space Power”, 4/2009, http://handle.dtic.mil/100.2/ADA539644

On 11 January 2007, China demonstrated ground-based offensive anti-satellite (ASAT) capability by shooting down one of its inactive weather satellites. No advance notice of the test was given, nor has China convincingly explained the intention of the test, other than that it was for peaceful purposes. This act needs to serve as a wake-up call for the US acknowledging China‘s rise in military space power. During a Dec 2007 report to Congress, Jeffrey Logan stated that although the ASAT test may have been a strategic demonstration of Chinese deterrence, others may see it as a ―nefarious display of China‘s space capabilities, and a sign that China has more ambitious objectives in space. The ground-based ASAT test by itself may have proved to be a benign space event, however, when combined with previous statements of space militarization, it strengthens the argument that China may be posturing itself more strongly for space dominance in their region. Two open-source examples are worth mentioning. First, China openly declared the development of ―parasitic satellites as an additional method to deploy an ASAT weapon. According to the latest thinking among Chinese defense professionals, ―ASATs are legitimate weapons.

**The US and other countries need a counter-ASAT weapon in space**

Theresa, **Hitchens**, Debris, Traffic Management, and Weaponization, **08** Opportunities for and Challenges to Cooperation in Space Politics, 2008, http://media.web.britannica.com/ebsco/pdf/801/33119801.pdf

As noted above, the Chinese ASAT test—the first such test in more than 20 years—has solidified fears that modern military powers may develop both earth-to-space and space based weapons to attack satellites, as well as on-orbit weapons to attack terrestrial targets. There have been calls in the United States, India, Russia, and Israel for development of ASAT and counter-ASAT weapons based in space in the wake of the Chinese test, and political agitation in Japan regarding missile defense and military space. Containment of the negative action-reaction dynamic now emerging will surely challenge the international community, given the myriad obstacles—both technical and political—that continue to face efforts to hammer out a treaty banning space weapons.

**Chinese Perception of Space wars necessities SB-BMD**

L.M. **Wortzel,** Vice-President for Foreign Policy and Defense Studies Area(s) of Expertise: China, Asia, intelligence issues, foreign policy, national security, and military strategy, 20**08.** Astropolitics, “THE CHINESE PEOPLE’S LIBERATION ARMY AND SPACE WARFARE.”

Space operations and warfare in space are components of what the PLA calls ‘‘informationalized,’’ or information age, warfare. In general, PLA strategists are convinced that space will be one of the natural domains of war and that war in space will be an integral part of other military operations. Moreover, PLA authors are convinced that ‘‘future enemy military forces will depend heavily on information systems in military operations;’’ therefore, they believe, China needs to break through the technological barriers and develop information system countermeasures in space. Two authors in China Military Science, the PLA’s premier military theory journal, believe that ‘‘it is in space that information age warfare will come to its more intensive points. Future war must combine information, firepower, and mobility.’’ They believe that future latent military threats will primarily come in aerospace.

Space BMD solves ASATs - Two shots at stopping

Howard **Kleinberg**, member of the graduate faculty of the Department of Public & International Affairs at University of North Carolina Wilmington, April 20**11**. US Army Field Artillery Association, “A Global Missile Defense 'network': Terrestrial High-Energy Lasers and Aerospace Mirrors,”

Fortunately, this recently -revealed, real-world ASAT threat also brings a silver lining in it. As is the case with ballistic missiles, SBBMD weapons can also defend against ASATs. All ASATs, at least, whether direct-ascent or co-orbiting, must first be launched from the Earth's surface, regardless of the launch platform, and must first go through a boost phase. And since SB-BMD provides the single best way to stop any such missile attack from taking place, Robert Butterworth, suggests in his article, "Assuring Space Support Despite ASATs," it would also provide the single best way to defend against ASAT attacks; same mission, different payload inside the threat missile. SB-BMDs could also intercept ASATs in other phases of their flight, at least within lower Earth orbit. For instance, the Missile Defense Agency's GMD can intercept ICBM warheads at the peak of their trajectories, some 1, 100 km (500 miles) or so. Similarly, an ASAT (direct-ascent or co-orbiting) on terminal approach towards a satellite in LEO would present a target of comparable size, density and velocity as a "mid-course" ICBM warhead (if not even larger), at a similar altitude, and possibly similar speed and trajectory. As a result, the ASAT could also be targeted and intercepted by a midcourse defense-capable SB-BMD weapon, in addition to its primary role of boost-phase defense, giving a "second-chance" round of shots with which to try to stop any ASAT.

Chinese ASAT development puts the U.S. on hair-trigger alert – leads to miscalc and accidental shootouts.
Theresa Hitchens, vice president and director of the Space Security Project at the Center for Defense Information, “Worst-Case Mentality Clouds USAF Space Strategy,” February 14, 2005, Center for Defense Information, <http://www.cdi.org/program/document.cfm?DocumentID=2885&from_page=../index.cfm>

The case being argued by space weapon enthusiasts goes like this: U.S. space assets are vulnerable, potential adversaries have woken up to this fact, therefore, actual threats (enemy systems to attack our satellites based on newly available technologies) will inevitably emerge – thus, U.S. space weapons are required to counter those threats. And true to salesmen everywhere, the pitch is often served with a generous helping of hyperbole. However, there comes a time – such as when a candidate is actually elected – when it is dangerous to fail to see through one’s own PR. Proponents of space weapons are in danger of being blinded by their own hype. A recent case in point: Maj. Gen. (select) Daniel Darnell, head of the Air Force Space Command’s Space Warfare Center, was quoted in the January 2005 issue of Air Force Magazine asexhorting all satellite operators to not only beware potential attacks, but to assume – as a first-case rather than worst-case scenario – that any disruption of a space system is most likely an attack**.** The first response when something goes wrong, said Darnell, should be "think possible attack." Even if one gives the general the benefit of the doubt as simply playing the campaign game, such a pronouncement is not only based on false premises, but also highly dangerous. Especially if operators really believe it. Careful probing of even the most ardent space weapon proponents reveals that no one seriously believes major threats to on-orbit systems exist today. While Air Force space officials are inordinately (and somewhat disingenuously) fond of pointing to attempts by Iraqi forces to jam the Global Positioning System during the 2003 Gulf War as part of their space-warfare-is-inevitable argument, it is important to recognize that those incidents involved ground-based jammers aimed at ground-based receivers, not any direct attack against on-orbit assets themselves. Indeed, there is no country, not even the United States, that currently has a working anti-satellite system in its arsenal. Direct threats to space assets are possible in the mid- to long term, but do not exist today (outside of the remote chance of someone launching a nuke into space, a threat that has existed since the dawn of the ballistic missile). More worrisome is the fact, subsequently admitted in the Air Force Magazine article, that the Air Force does not have the capability at this time to ascertain on the spot whether any disruption of satellite operations is due to a malfunction, such as faulty software or space weather, or the result of some sort of deliberate interference or attack. Some problems can be pinpointed over time, but not always with complete certainty. Taking Darnell’s logic at face value, however, these facts don’t matter. Any problems encountered by a satellite should be treated as a likely attack – an attack that under current Air Force doctrine would be considered an act of war subject to military response. In other words, we will shoot back. But at whom or what? The satellite that happens to be nearest the disabled one? The "rogue state" du jour? The wholesale adoption by the Air Force of such trigger-happy thinking would obviously be a recipe for disaster, raising the likelihood of the United States launching an accidental war. Furthermore, one can be doubly sure that if the United States has expensive space weapons on orbit, trigger fingers will be even itchier due to concerns about losing those assets before they can be used. The upshot will be a "shoot first and let God sort ‘em out" strategy that will no doubt backfire on U.S. security sooner or later. Suffice it to say, there will be a price to pay the first time a U.S. anti-satellite weapon shoots down an innocent Chinese communications satellite because a crucial widget on a U.S. satellite conked out due to faulty manufacturing processes.

Space war with China risks escalation and war.
William C. **Martel**, Prof. Nat'l Security Affairs at the Naval War College, **and** Toshi **Yoshihara**, doctoral candidate at the Fletcher School of Law and Diplomacy - Tufts U, research fellow at the Institute for Foreign Policy Analysis, "Averting a Sino-U.S. Space Race," Autumn, **2003**, The Washington Quarterly, 26:4, pp. 19-35

Strategists in the United States and in China are clearly monitoring the other’s developments in space. How the United States judges Chinese intentions and capabilities will determine Washington’s response; of course, the reverse is equally true. As each side eyes the other, the potential for mutual misperceptions can have serious and destabilizing consequences in the long term. In particular, both countries’ exaggerated views of each other could lead unnecessarily to competitive action-reaction cycles. What exactly does such an action-reaction cycle mean? What would a bilateral space race look like? Hypothetically, in the next 10 years, some critical sectors of China’s economy and military could become increasingly vulnerable to disruptions in space. During this same period, Sino-U.S. relations may not improve appreciably, and the Taiwan question could remain unresolved. If Washington and Beijing could increasingly hold each other’s space infrastructure hostage by threatening to use military options in times of crisis, then potentially risky paths to preemption could emerge in the policy planning processes in both capitals. In preparing for a major contingency in the Taiwan Strait, both the United States and China might be compelled to plan for a disabling, blinding attack on the other’s space systems before the onset of hostilities. The most troubling dimension to this scenario is that some elements of preemption (already evident in U.S. global doctrine) could become a permanent feature of U.S. and Chinese strategies in space. Indeed, Chinese strategic writings today suggest that the leadership in Beijing believes that preemption is the rational way to prevent future U.S. military intervention. If leaders in Beijing and Washington were to position themselves to preempt each other, then the two sides would enter an era of mutual hostility, one that might include destabilizing, hair-trigger defense postures in space where both sides stand ready to launch a first strike on a moment’s notice. One scenario involves the use of weapons, such as lasers or jammers, which seek to blind sensors on imaging satellites or disable satellites that provide warning of missile launches. Imagine, for example, Washington’s reaction if China disabled U.S. missile warning satellites or vice versa. In that case, Sino-U.S. relations would be highly vulnerable to the misinterpretations and miscalculations that could lead to a conflict in space. Although attacks against space assets would likely be a precursor or a complement to a broader crisis or conflict, and although conflicts in the space theater may not generate many casualties or massive physical destruction, the economic costs of conflict in space alone for both sides, and for the international community, would be extraordinary given that many states depend on satellites for their economic well-being.

Strong American capabilities and the containment of China is critical to prevent aggression and war over Taiwan.

Khalilzad 95 (Zalmay, US Ambassador to the United Nations. “Losing the Moment? The United States and the World After the Cold War.” The Washington Quarterly, Vol. 18, No. 2. pg. 84 Spring 1995)

Third, the United States should seek to strengthen its own relative capabilities and those of its friends in East Asia to deter possible Chinese aggression and deal effectively with a more powerful, potentially hostile China. China's military leaders are considering the possibility of a conflict with the United States. They recognize the overall superiority of the U.S. military but believe there are weaknesses that could be exploited while preventing the United States from bringing its full power to bear in case of a conflict over Taiwan. According to the Chinese, U.S. weaknesses include vulnerability of U.S. bases to missile attacks, heavy U.S. reliance on space, America's need to rapidly reinforce the region in times of conflict, susceptibility of U.S. cities to being held hostage, and America's sensitivity to casualties. According to the emerging Chinese doctrine, the local balance of power in the region will be decisive because in this new era wars are short and intense. In a possible Taiwan conflict China would seek to create a fait accompli, forcing the United States to risk major escalation and high levels of violence to reinstate the status quo ante. China might gamble that these risks would constrain the U.S. response. Such an approach by China would be extremely risky and could lead to a major war. Dealing with such possible challenges from China both in the near and long term requires many steps. Burden-sharing and enhanced ties with states in East and Southeast Asia will be important. New formal alliance relationships--which would be the central element of a containment strategy--are neither necessary nor practical at this time, but it would be prudent to take some preparatory steps to facilitate the formation of a new alliance or the establishment of new military bases should that become necessary. They would signal to China that any attempt on their part to seek regional hegemony would be costly. The steps we should take now in the region must include enhancing military-to-military relations between Japan and South Korea, encouraging increased political- military cooperation among the ASEAN states and resolving overlapping claims to the Spratly Islands and the South China Sea; fostering a Japanese-Russian rapprochement, including a settlement of the dispute over the "northern territories;" and enhancing military-to-military cooperation between the United States and the ASEAN states. These steps are important in themselves for deterrence and regional stability but they can also assist in shifting to a much tougher policy toward China should that become necessary. Because of the potential for conflict between the United States and China over issues such as Taiwan, the U.S. military posture in general should take this possibility into account.Measures should be taken to correct the Chinese belief that they can confront the world with a fait accompli in Taiwan. The United States needs expanded joint exercises with states in the region. Ensuring access to key facilities in countries such as the Philippines, pre-positioning stocks in the region, and increasing Taiwan's ability to defend itself would also be prudent. The large distances of the East Asian region also suggest that a future U.S. force-mix must emphasize longer-range systems and stand-off weapons. The United States must develop increased capabilities to protect friendly countries and U.S. forces in the region against possible missile attacks.

**SBMD key to deter China – the Taiwan deterrence equation requires the ability to halt Boost Phase missiles**

**Ross 11** [ Ed Ross, ePresident and CEO of EWRoss a company that provides global consulting services, former Principal Director, Security Cooperation Operations Defense Security Cooperation Agency Acting Deputy Assistant Secretary of Defense China Brief Volume: 11 Issue: 3 on February 10, 2011]

The PRC military threat to Taiwan has increased dramatically over the years as China has deployed approximately 1500 short- and medium-range ballistic missiles along the Taiwan Strait [2]. While China’s ability to coerce or attack Taiwan with its increasingly sophisticated fighter aircraft and submarine fleets are ever-increasing threats, in the absence of a comprehensive Taiwan missile-defense system, the military and political risk for China of a missile attack remains significantly less than that of air strikes or a blockade. Moreover, China’s ability to launch an amphibious invasion of Taiwan remains limited by its sea lift and amphibious attack capabilities [3]. Since 2002, the U.S. government has assessed that Taiwan no longer has the capability to maintain air dominance over its territory [4]. Taiwan’s ground-based air defenses—its U.S.-supplied Patriot and I-Hawk missiles, it’s domestically produced Tien Kung I and II (Sky Bow) missiles [5], and its air force still pose a major risk for Chinese fighter and bomber aircraft. How long would it take for China to overcome Taiwan’s air defenses, what loses China would incur in achieving that goal, and how long would it take the U.S. Pacific Fleet to come to Taiwan’s defense are part of a dynamic deterrence equation that has been shifting in China’s favor for at least the past decade [6]. Operational deployment of China’s recently unveiled J-20 “stealth” fighter [7] remains several years away. Its introduction certainly would further tip the balance of power toward China and gives further arguments for the sale of new F-16C/D fighters to Taiwan. Sustaining a military blockade of Taiwan is also not without risk for China. It risks igniting a broader conflict; and if Taiwan sunk just one PRC warship in response, it would be an embarrassment for the People’s Liberation Army (PLA). It is not clear how Taiwan’s major trading partners, Japan and the United States, would react should the PRC take military action against an American or Japanese flagged ship attempting or perceived to be attempting to challenge the blockade. They and the United Nations would have plenty of time to condemn China and take other actions to mitigate the result a blockade was intended to produce. A missile attack on Taiwan, in the absence of an adequate missile-defense, however, poses little risk for China beyond the international condemnation that would follow. How the international community would react to a ballistic-missile attack on Taiwan depends largely on the events leading up to it. From a purely military perspective, however, no aircraft, ships, or PRC military personnel would be at hazard. Certainly, Taiwan could attack targets on the Chinese mainland in retaliation, but Taiwan’s capability to do that with missiles and aircraft is limited, and the systems and bases Taiwan would use for such attacks would be among the primary targets of a PRC ballistic-missile strike.

**Sophisticated BMD Key to avoid China war – prevents them from crossing the Taiwan strait**

**Lister** in 20**10**[ Charles R. Lister, Research Assistant Institute for Foreign Policy Analysis, Researcher The Centre for the Study of Terrorism & Political Violence, Editorial Assistant at The Diplomat, Article on e-IR “ US Missile Defence and Space Security: a Security Dilemma for China? “

Taiwan is a major foreign policy issue for China and has been largely since 1949 when the People’s Republic was established. Beijing’s ‘One China’ policy foresees that eventually, Taiwan will ‘reunify’ with the mainland – until that time, Beijing considers it a ‘renegade province’ illegitimately seeking independence (taidu).[25] Officially, Beijing has a policy that accepts the necessary use of ‘non-peaceful means’ in the event of a Taiwanese push for independence. U.S. support for Taiwan has been clear ever since the outbreak of the Korean War in 1950 and the subsequent 1954 Mutual Security Pact that placed “China’s Taiwan ‘province’ under U.S. protection.”[26] Crucially regarding the focus of this paper is the 1979 Taiwan Relations Act that committed the U.S. to provide Taiwan with “arms of a defensive character”[27] in order to prevent Chinese coercive (re)unification. In January 2010, President Obama announced the approval of an arms deal with Taiwan worth $6.7 billion that crucially included one-hundred and fourteen Patriot-3 anti-ballistic missiles (ABMs),[28] the purpose of which is clearly to deter the one thousand four-hundred Chinese offensive missiles and rockets currently deployed across the Strait.[29] For China, this considerably undermines hopes for eventual reunification and serves only to bolster Taiwanese self-confidence and give the U.S. more freedom of action in any conflict over Taiwan. For Rex Li, the U.S. sale of TMD systems to Taipei is part of a wider U.S. policy of “using Taiwan to constrain China” (yitai zhihua)[30] and undermines previous U.S. assurances of ‘strategic ambiguity’ over the Taiwan issue. For others, such a sale is “tantamount to a military alliance”[31] directed against China, and, because the People’s Liberation Army (PLA) arguably represents the most notable ‘nationalist’ or realist voice within China, will serve only to encourage escalatory moves such as incentivizing increased missile deployments opposite Taiwan – thus exemplifying a security dilemma. Further to this, China has serious concerns regarding the stability of various outlying provinces, like Tibet or Xinjiang, where secessionist, anti-government movements could be bolstered by an increasingly confident Taiwanese independence movement backed by U.S. weapons and support. Even though one-hundred and fourteen Patriot-3 missiles cannot defend Taiwan from a full-scale Chinese missile strike, sophisticated BMD technology in the hands of Taipei symbolizes a highly significant shift in the power balance. China has, as the result of one U.S. action, lost a crucial measure of strategic leverage over American regional power and will presumably have to respond counteractively.

**SBMD key to deterring China and protecting Taiwan in a nuclear conflict**

**McDevitt 02** [ Michael, Rear Admiral, U.S. Navy (Retired) and Director, Center for Strategic Studies, CNA Corporation “ Missile Defense and U.S. Policy Options Toward Beijing” 2002 The Henry L. Stimson Center issue 47]

It is difficult to overstate the importance of Taiwan to any calculation of strategic nuclear relations with China. All such calculations must consider the possibility of conflict with China over Taiwan, either because Taiwan rashly declares independence and the U.S. feels compelled to come to the aid of a small democracy and longtime “friend” (even if it was Taiwanese rashness that precipitated the crisis), or because China becomes tired of waiting and decides to act based upon its declaratory policy found in the February 2000 White Paper on Taiwan, and attacks Taiwan because the island hasn’t begun dialogue leading to reunification. While both scenarios are plausible, the likelihood of one or the other actually taking place seems too remote to this author—because China has deterred Taiwan, and we have deterred China. But not so remote that prudent planning should not be taken to ensure that if the United States becomes embroiled in a shooting war with China, we have thought through all the implications of engaging in armed conflict with a country armed with nuclear weapons. The United States has never actually had to really do this because, happily, the Cold War with the Soviets never went hot. It is worth remembering that it did go hot with China, but that was before China had nuclear weapons. One of the implications of conflict over Taiwan must be whether or not the United States should focus on defending against Chinese ballistic missiles. Certainly if conflict broke out with China over Taiwan and the U.S. had already fielded a missile defense system, such a system would be used to the extent of its capability to defend the United States from any Chinese missiles. The issue is not whether we would use any and all defenses if attacked—of course we would. The issue is what capabilities the country should strive to achieve vis-àvis China’s ICBMs within the context of a plausible conflict over Taiwan. How one answers this question will help inform judgments on U.S. interests and U.S. policy choices. Before turning to U.S. interests and policy options, an important point of context is provided in an early January 2002 DoD directive from Secretary of Defense Rumsfeld which provides specific guidance as to its missile defense priorities: ƒ First, to defend the United States, deployed forces, allies and friends. Second, to field a missile defense system that layers defenses to intercept ballistic missiles in all phases of their flight (i.e., boost phase, midcourse flight and terminal) against ballistic missiles of all ranges. ƒ Third, to field specific elements of the overall Ballistic Missile Defense System (BMDS) as soon as practicable. For xample, deployment of Patriot PAC-3, as the first line of defense against short-range missiles, is under way. ƒ Fourth, to develop and test a full range of technologies, conduct an aggressive testing program and then field the most promising technologies as they become available. This is what some have called Secretary Rumsfeld’s “pharmaceutical” approach—i.e., to look at all possibilities and select the best as opposed to “putting all eggs into one basket” by making an early determination of just one approach. To accomplish these priorities, the Defense Department is in the process of reorganizing itself to put one organization in charge. This new entity is to be called the Missile Defense Agency (MDA). What is interesting about these priorities is the implied uncertainty over the size and nature of layered missile defense. It is also interesting that the defensive “requirement” is very broad—encompassing friends and allies.

**China, Taiwan, US conflict escalates causing global nuclear war**

**Hunkovic 09 [**  Lee J. Hunkovic, Professor at The American Military University, “The Chinese-Taiwanese Conflict Possible Futures of a Confrontation between China, Taiwan and the United States of America,” 2009, <http://www.lamp-method.org/eCommons/Hunkovic.pdf>]

A war between China, Taiwan and the United States has the potential to escalate into a nuclear conflict and a third world war, therefore, many countries other than the primary actors could be affected by such a conflict, including Japan, both Koreas, Russia, Australia, India and Great Britain, if they were drawn into the war, as well as all other countries in the world that participate in the global economy, in which the United States and China are the two most dominant members. If China were able to successfully annex Taiwan, the possibility exists that they could then plan to attack Japan and begin a policy of aggressive expansionism in East and Southeast Asia, as well as the Pacific and even into India, which could in turn create an international standoff and deployment of military forces to contain the threat. In any case, if China and the United States engage in a full-scale conflict, there are few countries in the world that will not be economically and/or militarily affected by it. However, China, Taiwan and United States are the primary actors in this scenario, whose actions will determine its eventual outcome, therefore, other countries will not be considered in this study

# China ASAT - Inherency

**China is developing large ASAT capabilities – SQ output is falling behind**

**Clark** [ Dereck A. The Great Leap Upward: Implications of China's Rise as the Third Player in the Fourth Battlefield for U.S. Security approved by a committee of Dr. S. Michael Pavelec

CAPT Carl Otis Schuster, USN RET. Sept. 18 20**09** a masters paper presented at Hawaii Pacific university]

 As far as the literature is concerned, Tellis maintains that "Beijing has been pursuing a diverse and comprehensive portfolio of space warfare investments since at least the l980s."2" He is not alone in this view. Phillip Saunders and his team in their article on this subject for the Center for Nonproliferation Studies wrote that "available evidence suggests that preliminary research on ASAT technologies has been underway in China since the l980s." As a result of this early development over two decades ago, Tellis argues that "the evidence suggests these programs are protean [in that] they lend themselves to steady evolution across the spectrum from space denial to space dominance if Beiiing's political goals change over time." Just as China has experienced a rapid yet steady evolutionary growth of its economy, so too has its military experienced an expanding period in the last few decades that can only be described as rapid and steady. China's emphasis on developing space-based assets for both commercial and military applications are directly tied to its overall development goals, but as has been pointed out repeatedly, even-more-so linked to its military modernization objectives-especially in tenns of enabling the realization of integrated joint operations and fluidity in all battlespaces (land, sea, air, and space). Though Eric Hagt and Theresa Hitchens tend to rest on the peaceful China side of this debate, maintaining that the Chinese seek to maintain space as a sanctuary and to only pursue defensive military space capabilities if the U.S. seeks to funher undermine their nuclear deterrent through space-based missile defense, and the deployment of space weapons etc., others such as Michael Pillsbury, Ashley Tellis, James A. Lewis, Mary Fitzgerald, Phillip Saunders, Colonel Larry Wortzel and General Cartwright tend to fall in line with what the U.S. Department of Defense Annual Report on the Military Power of the PRC finds concerning what the PLA literature says about the use of space in future conflict. ln this year's report, as it has been avowed similarly for the last seven reports, the U.S. DoD point out that "PLA writings emphasize the necessity of "˜destroying, damaging, and interfering with the enemies reconnaissance, observation and communications satellites' and that the same PLA analysis of U.S. and Coalition military operations also states that "˜destroying or capturing satellites and other sensors will deprive the opponents of initiatives on the battlefield and [make it difficult] for them to bring their precision guided weapons into full play. As the above description suggests, China's current focus with regards to counter-space capability and military applications of space is directly aimed at and focused on space-denial operations. This idea is clear when considering Tellis' argument that as Beijing's political goals will change over time (largely as a result of the rate of advancement in which their economy and overall military modernization initiatives are achieved) so too will their aspirations evolve from space denial to space dominance. Currently, as Tellis suggests, and for the foreseeable future, the Chinese have optimized their counter-space capabilities for the space-denial mission." Therefore, unlike the argument put forth by Hagt, that Chinese research into offense space capabilities, including those intended to deny the U.S. and other opponents' ability to conduct C4lSR operations with space-based assets, is merely theoretical, it has become wholly apparent that since the January l 1, 2007 test of a direct ascent anti-satellite (ASAT) weapon, tl1e PLA's interest in counter-space systems is more than theoretica|.2'Â° So before delving into the 86 overview of what types of military space hardware China is likely developing and has already tested/fielded, it is necessary to touch on the importance of possessing the capability to identify/track space objects and to differentiate military from civilian and domestic from foreign Space infrastructure-especially in times of conflict when that verv infrastructure mav be among the initial targets of attack

**China challenge US in warfare – Destroy communication capabilities**

L.M. **Wortzel,** Vice-President for Foreign Policy and Defense Studies Area(s) of Expertise: China, Asia, intelligence issues, foreign policy, national security, and military strategy, 20**08.** Astropolitics, “THE CHINESE PEOPLE’S LIBERATION ARMY AND SPACE WARFARE.”

The Chinese People’s Liberation Army (PLA) is developing doctrine for warfare in space. One of the major proponents of integrated space power for the People’s Liberation Army, Major General Cai Fengzhen, believes that ‘‘control of portions of outer space is a natural extension of other forms of territorial control,’’ such as sea or air control. More seriously, because of United States (U.S.) superiority in space, China’s military theorists treat the U.S. as the most likely opponent in that domain of war. The head of the U.S. Army Space and Missile Defense Command, Lieutenant General Kevin Campbell, thinks it is possible that ‘‘within three years we can be challenged at a near peer level in a region’’ by China. This means that China will be capable of ‘‘taking out a number of communications capabilities over a theater of war.’’

**Signs point to China as a space power**

L.M. **Wortzel,** Vice-President for Foreign Policy and Defense Studies Area(s) of Expertise: China, Asia, intelligence issues, foreign policy, national security, and military strategy, 20**08.** Astropolitics, “THE CHINESE PEOPLE’S LIBERATION ARMY AND SPACE WARFARE.”

China’s 2006 White Paper on Space Activities sets the priorities for China to become a space power. In PLA doctrinal books, senior PLA officers make it clear that they see the ability to control space during any conflict as controlling the high ground of future warfare.

**PLA seems to be forming an Astropolitik strategy to dominate the earth**

Erik, **Quigley,** Air Command and Staff Coll Maxwell afb al, **09**

“Geo-Political Considerations to China's Rise in Space Power”, 4/2009, http://handle.dtic.mil/100.2/ADA539644

Second, China has made significant offensive military space progress in recent years. Dating back to 1998, a Pentagon report to Congress stated that the PLA was building lasers capable of damaging sensors on space-based reconnaissance and intelligence satellites. Since that time, Larry Wortzel, former director of the Strategic Studies Institute of the US Army War College, confirms that the PLA is exploring a variety of space weapons through theoretical, basic, and applied research. These include: satellite jamming, collisions between space bodies, kinetic energy weapons, space-to-ground attack weapons, high-power laser weapons, high-power microwave and electromagnetic weapons systems, and particle beam weapons. If these trends are accurate, it appears that the Chinese may be posturing for an *Astropolitik* strategy, or dictum, that ―who controls Low-Earth Orbit controls Near-Earth Space. Who controls Near-Earth space dominate Terra [earth].

**China weaponizing space now in response to US efforts for space dominance**

**Zhang** Baohui is an associate professor of political science in the Chinese University Lignan **’11** (International Affairs, “US missile defence and China's nuclear posture: changing dynamics of an offence–defence arms race”, May 2011, Hopkins)

In both cases, Chinese security experts believe that the U.S. seeks “absolute security” in order to maximize protection for the American population from external threats. 9 This means that China at least recognizes the defensive motivations behind the U.S. quest for space dominance and missile defense. However, with the chaotic nature of international relations, one country’s efforts to maximize its security could degrade the security of others by changing the balance of power. Inevitably, the U.S. quest for “absolute security” evokes countermeasures from other countries. As Kenneth Waltz observes, when a great power seeks superiority, others will respond in kind, since “maintaining status quo is the minimum goal of any great power.” 10 According to Robert Jervis, “The heart of the security dilemma argument is that an increase in one state’s security can make others less secure, not because of misperceptions or imagined hostility, but because of the anarchic context of international relations.” In this context, “Even if they can be certain that the current intentions of other states are benign, they can neither neglect the possibility that the others will become aggressive in the future nor credibly guarantee that they themselves will remain peaceful.” 11 Inevitably, when one state seeks to expand its military capability, others have to take similar measures. DE NYI NG T HE U.S . QUE S T F OR S PACE DOMI NANCE The first factor that caused the security dilemma in the Sino-U.S. military space relationship is the professed American quest for space dominance. This quest is a reflection of the U.S. obsession with primacy that predates the Obama administration. The primacy strategy demands undisputed military dominance in different areas, including space, to ensure the best possible protection of U.S. national security. The U.S. is the only country in the world that has articulated a coherent national strategy for space dominance. As emphasized by Michael W. Wynne, former Air Force secretary, “America’s domination of the space domain provides an unrivaled advantage for our nation and remains critical to creating the strategic and tactical conditions for victory.” 12 The U.S. is the leader in the militarization of space. It was the first country that established a dedicated command, the U.S. Space Command, to unify military operations in space. In fact, as its Vision for 2020 proclaims, the Space Command seeks to achieve “full spectrum dominance” in space. 13 Furthermore, it envisions permanent dominance in the military dimension of space operations: “Today, the U.S. is the preeminent military space power. Our vision is one of maintaining that preeminence—providing a solid foundation for our national security.” 1 General Lance W. Lord, former commander, Air Force Space Command, points out the importance of space dominance: “Space superiority is the future of warfare. We cannot win a war without controlling the high ground, and the high ground is space.” 15 In December 2007, the U.S. Air Force released a White Paper called The Nation’s Guardians: America’s 21st Century Air Force, in which General T. Michael Moseley made a similar statement: “No future war will be won without air, space and cyberspace superiority”; thus, “the Air Force must attain cross-domain dominance. Cross-domain dominance is the freedom to attack and the freedom from attack in and through the atmosphere, space and electromagnetic spectrum.” 16 This strategy of space dominance, however, generates the classic security dilemma between the U.S. and other countries. Although the U.S. may be motivated by defensive purposes, such as shielding the American population from nuclear weapons and other threats, other countries have to assume the worst in an anarchic world. As observed by Joan Johnson-Freese, “I would argue that the rest of the world accepts U.S. space supremacy. What the Bush Administration claims is space dominance, and that’s what the rest of the world won’t accept.” 17 Chinese strategists certainly perceive the U.S. quest for space dominance as damaging to China’s national security; whoever controls space will have the edge in winning the next war. Indeed, Chinese military and civilian strategists argue that the U.S. search for “absolute security” jeopardizes other countries’ security. It is widely reported in Chinese military literature that the U.S. has already developed and is in fact implementing a master plan for military dominance in space. The challenge for China is to prevent the U.S. from jumping too far ahead. As observed by a major study organized by the General Staff of the PLA, “In recent decades the U.S. has been consistently pursuing dominance in space in order to become its overlord.” 18 The study also points out that the U.S. is the first country to develop a full set of doctrines for space militarization and dominance: In April 1998, the U.S. Space Command published its long-term strategic development plan, Vision for 2020, which specifically proposed the concept of space dominance and revealed the goals of allowing the American military to use space weapons to attack the enemy’s land, sea, air, and space targets. World opinion believes this represented the formal debut of U.S. space war theory and indicated an important first step by the U.S. military toward space war. 19 Li Daguang, one of the most influential PLA experts on space war, also alleges that the U.S. has initiated “a new space war” to maintain its status as “the overlord of space.” He claims that the ultimate goal of the U.S. space program is to “build a powerful military empire in outer space that attempts to include any space between earth and moon under American jurisdiction.” Under this empire, “without U.S. permission, any country, including even its allies, will not be able to use outer space for military or other purposes.” 20 One particular concern for the Chinese military is that the U.S. may no longer be content with merely militarizing space, which involves extensive use of satellites for military operations. Instead, weaponization of space is on the agenda. The PLA now believes that the U.S. is on the verge of important breakthroughs in the development of weapons for space war. As one study claims: “Currently, the U.S. military already possesses or will soon possess ASAT technologies with real combat capabilities, such as aircraft-launched ASAT missiles, land-based laser ASAT weapons, and space-based energy ASAT weapons.” 21 Moreover, the PLA suggests that the U.S. is trying to acquire space-based weapons to attack targets on earth: The U.S. military is developing orbital bombers, which fly on low altitude orbits, and when given combat orders, will re-enter the atmosphere and attack ground targets. This kind of weapon has high accuracy and stealth capability, and is able to launch sudden strikes. These capabilities make it impossible for enemies to defend against. Orbital bombers thus can strike at any target anywhere on the planet. It is the major means for the U.S. military to perform global combat in the 21st century. 22 This perception of the American lead in space militarization and attempts for its weaponization is a major motive for the Chinese military to develop similar projects and thus avoid U.S. domination in future wars. The PLA believes that control of the commanding heights will decide the outcome of future wars, and China cannot afford to cede that control to the U.S. As a result, space war is a key component of the PLA Air Force’s (PLAAF) new doctrines. In 2006 the PLAAF released a comprehensive study called Military Doctrines for Air Force, which makes the following statement: In future wars, merely possessing air superiority will no longer be sufficient for seizing the initiative of battles. In significant ways, only obtaining space superiority could ensure controlling the initiative of war. The contest in outer space has become the contest for the new commanding heights. Seizing control of space will mean control of the global commanding heights, which will in turn enable dominance in air, land, and sea battles. Thus, it is impossible to achieve national security without obtaining space security. 23 Another driver of the PLA’s efforts to counter U.S. dominance in space is the time factor. There is a genuine sense of urgency about controlling the commanding heights in space. The U.S. is seen as already possessing a decisive lead in the race toward space hegemony. As observed by Lieutenant General Ge Dongsheng, vice president of the PLA Academy of Military Sciences: Establishing space capability is not only important but also urgent. This is due to the fact that the U.S. and Russia have already taken the steps and now enjoy a vast lead over us. Even India, Japan, and European countries have ambitious plans to develop their own space capabilities. Under this situation, if we do not hasten implementing our own plan, there will be the possibility of having to face a generational gap in space capabilities. 24 COUNT E RI NG U.S . MI S S I L E DE F E NS E The second factor adding to the security dilemma in the U.S.-China military space relationship involves U.S. efforts to rewrite the established rule of nuclear deterrence, i.e., mutually assured destruction (MAD), that prevailed during the Cold War era. According to Glasner and Fetter, the U.S. has been pursuing a new deterrence posture that combines offensive and defensive capabilities. 25 Chinese strategists believe that the U.S. military space program, to a significant extent, is driven by missile defense. For example, in a study organized by the General Staff of the PLA, Major General Xu Hezhen charges that the U.S. is developing space-based laser weapons for missile defense. According to him, “A total of 14–24 satellites deployed on different orbits will constitute a defensive system. Relying on data from early warning systems, it can intercept ballistic missiles launched from anywhere in the world.” 26 In another study, Major General Ling Yongshun argues that the U.S. is implementing a coherent plan to neutralize other countries’ strategic deterrence through the deployment of space-based missile defense. As he observes: Using space weapons to attack ballistic targets is a major goal of space weapon development. The U.S. believes that others’ ballistic missiles pose significant threats to its security. To be immune from this threat, the U.S. is putting major efforts into ballistic missile defense, with space-based weapons being one of the important intercepting platforms. 27 In October 2008, the U.S. Congress approved $5 million for an independent study of possible space-based missile defense. This move gravely alarmed the Chinese military, which believed that the deployment of space-based missile defense could become inevitable. In fact, some PLA experts have claimed that “Star Wars has come back.” 28 Li Daguang even charged that this decision by the U.S. Congress amounted to “declaring a new Cold War against China.” 29 Chinese military strategists believe U.S. missile defense poses a real threat to China’s nuclear deterrent. Until recently, the Chinese military tended to believe that U.S. missile defense could not effectively deter a major nuclear power like China or Russia. It was thought that a range of countermeasures, such as deploying decoys and multiple warheads, could be employed to deceive and overwhelm U.S. missile defense. Now, however, with the maturing of a multilayered missile defense system by the U.S. and its allies, Chinese nuclear experts are losing confidence in China’s offensive capabilities. This pessimism was illustrated in a 2008 interview of Wang Wenchao in a Chinese military magazine. Wang, credited with being the chief designer of China’s sea-based strategic missiles, expressed grave pessimism about China’s offensive nuclear capability against U.S. missile defense. He said, “I have done research: Facing a multi-tiered missile defense system, if any single layer can achieve a success rate of 70%, then 100 single warhead missiles could all be intercepted even if they are mounting a simultaneous attack.” 30 This is why Wu Tianfu—arguably the most important deterrence strategist of the Second Artillery of the PLA, which runs China’s strategic nuclear forces—charges that the U.S. has “forced China to engage in a space arms race.” 31 More specifically, U.S. missile defense has forced China to integrate space war with its strategic nuclear deterrence. China must possess the ability to weaken American space-based assets such as early-warning satellites, to ensure the credibility of its own offensive nuclear forces. Thus, space war and nuclear war are now intertwined in Chinese strategic thinking. Indeed, China’s official media have credited Wu with establishing the PLA’s first space war research institute. 32

**China building up space capabilities**

**Van Ness** Peter, PhD (Berkley), lectures on security and peace building in the Department of International Relations in the College of Asia and the Pacific at the ANU. Previously faculty at the Graduate School of International Studies, University of Denver **’10** (ASIAN PERSPECTIVE, “ THE TIME HAS COME FOR A TREATY TO BAN WEAPONS IN SPACE” Vol. 34, No. 3, 2010, pp. 215-225)

In January 2007, the PRC launched a missile into space to destroy one of its own defunct weather satellites, demonstrating an ASAT capability that previously only the United States and Russia were thought to have. Analysts complained loudly about the debris produced by the attack because space debris constitutes a serious threat to all orbiting satellites. But the main shock was a strategic one. China had demonstrated that it, too, could play the game of weapons in space. Then, in January of this year, China carried out a ground-based missile interception test, apparently a successful missile-defense test. A foreign ministry spokesperson said that “The test would neither produce space debris in orbit nor pose a threat to the safety of orbiting spacecraft.”5At the same time, there is growing evidence of China’s cyber warfare capability, exhibited most prominently this year in the dispute with Google.6 Google complained about being targeted by cyber attacks from within China, and finally decided to move.

**Top US officials view China as a hostile threat in space.**

Rob **Chambers,** Graduated student from Naval Postgraduate School, **09**

Naval Postgraduate School, “China’s Space Program: A New Tool for PRC “Soft Power” in International Relations?”, 3/2009, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA497039&Location=U2&doc=GetTRDoc.pdf> [Marcus]

Viewing the Chinese space program as hostile and Beijing a future rival in space seems to be the predominant line of thinking amongst U.S. politicians and many think tanks. The Chinese ASAT test still rings loudly in their ears, tainting each judgment that is made on China’s aspirations in space The 1997 Loral scandal in which missile technology was allegedly transferred to China against standing U.S. satellite export policy is another black mark against any mention Chinese space cooperation. More vitriolic statements were issued during the March 2006 House Appropriations Committee subcommittee hearing on “Science, the Departments of State, Justice, and Commerce, and Related Agencies” when Rep. Tom DeLay quipped, “We have a space race [with China] going on right now and the American people are totally unaware of this”.268 Frank Wolf, representative from Virginia and subcommittee chairman, added, “If China beats us there [to the Moon], we will have lost the space program. They are basically, fundamentally in competition with us”.269 This is further evidenced in Senator Kyl’s January 29, 2007 speech at the Heritage Foundation in which he claimed that China’s rhetoric and insistence on the Prevention of an Arms Race in Outer Space (PAROS) was merely a ruse to prevent “further progress by the United States in space while allowing it to covertly catch up”.270 Despite repeated remarks by Chinese Premier Wen Jiabao that the test was not directed at anyone nor did it change China’s position on the peaceful use of space, many remain skeptical of the test’s true intent. While this may have been an attempt to drum up the China threat in order to secure more funding for NASA’s lunar programs, it may also reflect a more general trend of regarding any Chinese effort in space with the utmost suspicion. Johnson-Freese’s address to the April 2007 conference “Collective Security in Space: Asian Perspectives on Acceptable Approaches” explained the more pessimistic outlook in greater detail. She cited the three main commissions that color U.S. space policy, namely the “Rumsfeld,” “Cox,” and “Rumsfeld Space” Commissions as bolstering a purported China “threat” in space.271 After the 2007 ASAT test, the “U.S. voices of moderation [which had] made some progress [against the ‘China threat’ camp]…had [been] drowned out”.272 Thus, while there were positive efforts to keep the threat perceptions from spiraling out of control, they were effectively extinguished by the Chinese ASAT demonstration. In her analysis of the 2004 DoD report on Chinese space activities, Johnson-Freese noted that “five out of six Chinese launches were considered militarily relevant breakthroughs, though all but one were civilian launches”.273 Given the downward trend in U.S.-China space relations and the strong anti-China bias from the Pentagon, she pessimistically concluded that chances would be grim for any real improvement “in the near-term and even in the next administration”.274

**China is a threat to us space resources**

**Blazejewski,** “private practice in New York City, focusing primarily on international corporate and financial transactions. He received his master’s degree in public affairs from the Woodrow Wilson School at Princeton University and his JD degree from the New York University School of Law.”, **8** [Kenneth S. Blazejewski, Strategic Studies Quarterly, Spring 2008; http://www.au.af.mil/au/ssq/2008/Spring/blazejewski.pdf; Pitman]

First, as the world’s most technologically advanced country, the United States owns a highly disproportionate share of the world’s space assets and satellites. These satellites play a vital role in US economic activity and military operations.45 Foreign states have certainly taken note. “The political, economic, and military value of space systems makes them attractive targets for state and non-state actors hostile to the United States and its interests.”46 Unfortunately, satellites also make relatively easy targets for foreign antagonists. Satellites move in predictable patterns, cannot remain over friendly territory, and are easily located by other states.47 While most commercial satellites are in geosynchronous Earth orbit, beyond the reach of existing Chinese ASAT weapons, China could reach US satellites in LEO with its current basic ballistic missile technology. In the case of a limited US-China conflict, perhaps over Taiwan, US military satellites, most of which orbit in LEO, would make for a tempting target. Strategic elimination of US military satellites could effectively blind US forces. China might consider such a limited attack especially attractive since it would be unlikely to incite a full-scale nuclear response.

**China is a huge missile threat as well as a space threat**

**Independent Working Group** (The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.2007(Collective report/study) “missile defense and the space relationship and the 21st century”2007 <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

China, meanwhile, is expanding both its ballistic missile capabilities and its space presence. China has benefited con­siderably from U.S. technology, including missiles, and now has an inventory of intercontinental ballistic missiles (ICBMs) capable of striking the United States. This capability is being improved by replacing China’s existing arsenal of CSS-4 “Mod 1” ICBMs with the longer-range CSS-4 “Mod 2,” together with the development of mobile and submarine-launched variants of the *Dong-feng* (DF)-31 ICBM. Estimates suggest that its ar­senal could grow to as many as sixty ICBMs by the end of the decade. China seems determined to build a nuclear force de­signed to inhibit U.S. action in the event of a renewed crisis such as in the Taiwan Strait. At the same time, China is deploy­ing between 650 and 730 short-range ballistic missiles oppo­site Taiwan, with roughly one hundred such missiles expected to be added each year. These missiles could also be used to conduct strikes against Okinawa and Japan, including U.S. forces stationed there.China also possesses an active space program designed to make it a military space power. With the launch in Octo­ber 2003of its first manned spacecraft, China became the third nation, after the United States and Russia, to send a manned vehicle into space. A second successful manned mission was completed in October 2005. China’s space pro­gram is designed to demonstrate Beijing’s achievements and potential in such areas as computers, space materials, manufacturing technology, and electronics, technologies with dual-use military and civilian space applications, as well as to challenge U.S. dominance in space.

# China ASAT – Solvency

**China spear of influence is a challenge to the United States Missile Defense is needed to counter**

**Independent Working Group**(The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collectivereport/study) “missile defense and the space relationship and the 21st century”2007 http://www.missilethreat.com/repository/doclib/IWGreport.pdf (Pitman)

China is likely to grow in importance for the United States in the years ahead. The two central goals of the People’s Re­public of China’s (PRC) foreign policy include: (1) the absorp­tion of Taiwan; and (2) the diminution of U.S. influence and the expansion of China’s geostrategic position in and beyond the Asia-Pacific area. China has deployed between 650 and 730 mobile short-range ballistic missiles opposite Taiwan as part of its strategy of political intimidation against Taipei. This number is increasing at a rate of approximately 100 mis­siles per year. China also plans to modernize its inven­tory of intercontinental ballistic missiles (ICBMs). Over the next several years, China will place into operation a new, solid-propellant mobile ICBM, the DF-31 (7,250+ km), an extended range DF-31A (11,270+ km), and a new sub­marine-launched ballistic missile, the JL-2. The growth of short-range ballistic missiles and ICBMs is only one portion of a massive, multi-year military modernization effort pursued by Beijing to support its growing interna­tional role and its ability to project military power.10 Over­all, this effort encompasses a major expansion in its air, naval, land, and asymmetric warfare capabilities. There have been annual double-digit increases in Chinese de­fense expenditures over the past decade and a half.11 In March 2005, China announced a $29.9 billion defense bud­get, a 12.6percent increase over the previous year.12 This growth has occurred in an era in which the United States deployed no missile defense. Today the Chinese oppose even the limited U.S. missile defense deployment currently un­derway. U.S. assurances that its missile defense is not designed against it may lead China to believe that it can threaten the United States, as Beijing did in the 1996 Taiwan Straits Cri­sis. In July 2005, a senior Chinese military official threatened the use of nuclear weapons against the United States in case of American military intervention in a conflict over Taiwan.13 If China represents a rising power that will challenge U.S. in­terests, it makes no strategic sense for the United States to de­ploy a missile defense that fails to address the threat posed by China. Instead, the United States should move toward a mis­sile defense that affords a future U.S. president maximum flex­ibility in managing a crisis with Beijing.

**Missile Defense Would Destroy Chinas Nuclear Capability**

[**Zhang, Hui**](http://www.spacedebate.org/author/1878) **and** [**Pavel Podvig**](http://www.spacedebate.org/author/1951)**.. .** Cambridge, MA: American Academy of Arts and Sciences, **08** “[Russian and Chinese Responses to U.S. Military Plans in Space](http://www.amacad.org/publications/militarySpace.aspx)”2008**.**<http://www.amacad.org/publications/militarySpace.aspx>(Pitman)

It is reported that China has about twenty ICBMs with a range of 13,000 km, capable of reaching the United States. Unlike the warheads of other nuclear powers, as reported, China’s nuclear warheads are not on launch-onwarning status because China does not have an effective early-warning system. Thus, China’s nuclear deterrence is based on the retaliatory capability it retains after absorbing a nuclear attack. Unless it could confidently eliminate China’s twenty ICBMs in an initial strike, the United States would in theory be deterred from initiating a nuclear attack. If the United States were to deploy missile defense systems, this situation would change completely. A spacebased, boost-phase defense would be particularly threatening.

# China – A2 Coop Turn

**Chinese Authors incorrect – High Frontier indicates US SB-BMD intentions good**

L.M. **Wortzel,** Vice-President for Foreign Policy and Defense Studies Area(s) of Expertise: China, Asia, intelligence issues, foreign policy, national security, and military strategy, 20**08.** Astropolitics, “THE CHINESE PEOPLE’S LIBERATION ARMY AND SPACE WARFARE.”

Security literature elsewhere in China reflects the interpretation that the intent of American concepts regarding missile defenses in space is a way of extending national airspace control. An article on weapons in space by Huang Zhicheng, writing from the Beijing Systems Engineering College, expresses the view that ‘‘the United States is trying to build a strategic external border in space with its ballistic missile defense plans.’’ Huang quotes President John F. Kennedy as saying ‘‘whoever controls space [the universe] can control the Earth (shei neng kongzhi yuzhou, shei jiu neng kongzhi diqiu),’’ reflecting China’s deep uneasiness about U.S. intentions. This is a popular quote in the PLA. It is probably taught in its military schools. In a China Military Science article, another author, Liu Jixian, a Major General at the PLA Academy of Military Science, paraphrases Kennedy this way, ‘‘whoever controls the universe controls our world, whoever controls space controls initiative in war.’’ Ultimately, these Chinese authors fail to acknowledge American intent in developing space doctrine. Nowhere in Cai’s work, or other Chinese examinations of the High Frontier concept, do the authors capture Graham’s statement of intent, which was to break away from the strategic nuclear calculus of ‘‘Mutually Assured Destruction (MAD)’’ in which the U.S. and the Soviet Union were locked. Graham advocated replacing ‘‘the dangerous doctrine of MAD with a strategy of assured survival [for the U.S. and its allies].’’ Cai focuses, instead, on Graham’s concepts about high performance space planes and directed energy weapons. The PLA has reacted to what its officers observed in military operations in the Balkans, the first Gulf War, Afghanistan, and Iraq, where joint operations and command were so effective because of U.S. space assets.

**Countries want to limit US space militarization- past treaties and China’s ASAT prove**

**Huntley et al** Wade L. Ph.D., is senior lecturer in the National Security Affairs department  US Naval Postgraduate School, Joseph G. Bock is the director of external relations at the Kroc Institute for International Peace Studies, and **Miranda Weingartner is with**Weingartner Consulting  **’10** (Space Policy, “Planning the unplannable: Scenarios on the future of space”, Volume 26, Issue 1, February 2010, Hopkins)

Recent interest among US military strategists in the prerequisites for establishing and maintaining “space deterrence”13 reflect continuity in this vein of thinking. Driven in large measure by concerns over US intentions, most other countries categorically oppose weaponization of space and have supported efforts to expand the Outer Space Treaty (OST) to control and limit future military expansions into space.14 Evolving coalitions of states have consistently endorsed negotiation of a further Prevention of an Arms Race in Outer Space (PAROS) agreement. In the past decade, Russia and China have led these efforts; but at times many significant US allies (such as Canada) have joined the call.15 Notably, many supporters of establishing treaty-based control of future military-related space activities share the judgment that technological advancement is creating genuine security implications rendering existing space regulation increasingly insufficient, and encouraging the expectation that, absent stronger controls, weaponization may indeed be inevitable. Here also, China's ASAT-testing satellite shoot-down has been taken as a demonstration of these conclusions.16 Whereas space nationalists and space globalists differ markedly on prescriptions, the underlying diagnoses of contemporary forces and prospects are more convergent. This observation casts light on the common view that ambitions to create a binding space governance regime merely reflect idealist aspirations for global cooperation. But states supporting treaty-based restraints on space weapons development typically have made appraisals of their national space security interests just as realist as those by the USA. The different responses to these concerns by these countries reflect the differences in the content of their interests and in their relative capabilities to pursue them. The USA, as the dominant military space actor, often expresses a familiar “great power” response to space security developments. Other countries' perspectives may differ along three dimensions. First, they face the consequences of possessing less – or no – capacity to redress their space security concerns by their own resources.17 Second, their interests may include more relative attention to civil and commercial space activities, with space security concerns limited to the prerequisite of a peaceful space environment in which to conduct those activities. Finally, they may worry that, because of their smaller role, their interests may be abused not only from others' malice but from their ignorance and neglect. States for which these differences hold take the perspective of “lesser powers” with respect to space security. Each of these differences motivates lesser powers to pursue their interests through some form of structured relationship, which may include either exclusive alliances or inclusive regimes.18 The particular nature of space-related issues exaggerates these tendencies. All states have an equivalent “proximity” to space, and many, as consumers of space-based communications and imaging products, tend to perceive immediate interests in activities there. For this reason, weaker states tend to view the consequences of conflict in space in absolute rather than proximate terms, even if their capacity to influence events in space is particularly limited – akin to weaker states' outlooks on nuclear conflict. This convergence between particular and generalized interests induces these states to perceive broadly shared interests; in turn, the absolute nature of the consequences of space conflict increases the perceived utility of broad-based multilateral collaboration (versus exclusive alliances). Hence, advocacy of shared international principles and multilateral agreements by such states reflects a realistic response to the particular circumstances they face.

# SBL – China Developing

**The Chinese are developing lasers – We need to act to compete**

**Clark** [ Dereck A. The Great Leap Upward: Implications of China's Rise as the Third Player in the Fourth Battlefield for U.S. Security approved by a committee of Dr. S. Michael Pavelec

CAPT Carl Otis Schuster, USN RET. Sept. 18 20**09** a masters paper presented at Hawaii Pacific university]

While China's leaders remain silent about the military applications of their space programs and counter-space capabilities, it has long been acknowledged that China is a world leader in the area of advanced laser and optics technology development. As part of China's multi-dimensional focus on counter-space capabilities and new concept weapons, "China has devoted considerable resources to directed-energy systems, particularly ground-based high- and low-energy lasers, for counter-space purposes."2" These types of new concept weapons that include laser, microwave, particle-beam, and radiofrequency technologies are highly sought-alter by the Chinese (and U.S) because they can be used not only to disrupt and destroy various ground targets and flying targets such as aircraft, ballistic missiles, cruise missiles, satellites, and space stations, but also in both electronic and photoelectronic warfare. As Mary Fitzgeralds remarks, many of' these weapons are considered "non-antipersonnel weapons.” Given Chinese concerns regarding the neutralization of their nuclear deterrent, their motivation to develop such a wide-ranging and useful capability is clear. When considering the wide-ranging utility of directed-energy weapons, lasers are singled-out as among the most valuable. For instance, Ashley Tellis notes that "ground-based lasers are particularly attractive counter-space weapons because they give an attacker the flexibility to cause varying levels of damage."HÂ° Essentially, lasers offer the attacker the freedom to choose the level of severity a given attack will inflict. While lower-powered lasers could be used to blind, disrupt, or damage an adversary satellite temporarily (which requires a more demanding set of prerequisites, including appropriate intercept geometry, for such attacks to be effective), higher-powered lasers could be used to inflict structural damage on a satellite or other spacecraft by inadiating it with sufficient persistent energy to cause catastrophic failures to key subsystems like power generation, thennal management, and communications capability (which merely requires the target to pass within the broader arc of reach of the attacking laser system.)m In either case, it is important to note that satellites in any orbit could potentially be attacked by using directed-energy weapons. Moreover, given that China has already been responded to have Iased a U.S. reconnaissance satellite in 2006, it is reasonable to assume that they have not simply given-up this capability. Instead, in all likelihood, the Chinese are advancing in this area, and will continue to do so well into the next decade.

# Ext - SBMD boosts deterrence

**Space NMD strengthens deterrence.**

Kevin **McLaughlin**, Vice Commander, U.S. Air Force Warfare Center, Nellis Air Force Base, Nev, **02**

Washington Quarterly, “Would Space-Based Defenses Improve Security?” Summer 2002, <http://www.thewashingtonquarterly.com/02summer/mclaughlin.pdf> [Marcus]

Today, information gathered from and transmitted through space is an integral component of American military strategy and operations. Spacebased capabilities enable military forces to be warned of missile attacks; to communicate instantaneously; to obtain near real-time information that can be transmitted rapidly from satellite to attack platform; to navigate to a conflict area while avoiding hostile defenses along the way; and to identify and strike targets from air, land, or sea with precise and devastating effect. This permits U.S. leaders to manage even distant crises with fewer forces because those forces can respond quickly and operate effectively over longer ranges. Because of space capabilities, the [United States] is better able to sustain and extend deterrence to its allies and friends in our highly complex international environment. Space is not simply a place from which information is acquired and transmitted or through which objects pass. It is a medium much the same as air, land, or sea. In the coming period, the [United States] will conduct operations to, from, in, and through space in support of its national interests both on earth and in space. As with national capabilities in the air, on land, and at sea, the [United States] must have the capabilities to defend its space assets against hostile acts and to negate the hostile use of space against U.S. interests.

# \*\*SBL Solvency\*\*

# 1AC- solvency

**Directed energy weapons key to successful weapon advantage and ballistic missile defense**

Bayram **Deveci**, Doctorate at Naval Postgraduate School, **07** [Naval Postgraduate School, “Directed-Energy Weapons: Invisible and Invincible?”, September 2007, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA473993&Location=U2&doc=GetTRDoc.pdf (Ghosh)]

1. Advantages of Directed-Energy Weapons There are several reasons for the growing interest in directed-energy weapons. The attraction of the military to these weapons is clear when considering the unique properties they bring to the strategic, operational, and tactical battlefield. The first and most obvious advantage is that directed-energy weapons deliver lethal energy at the speed of light. This significant advantage enables instant reaction to fast, highly maneuverable targets. That means many of the problems associated with aiming and discharging existing weapons are effectively eliminated, because virtually no time elapses between firing a directed-energy weapon and its impact on the target. 23 Avoidance of collateral damage or adjustable energy is the second advantage of directed-energy weapons. Today’s war mentality prefers the option to inflict non-lethal attacks prior to the use of lethal force. In contrast to kinetic and chemical weapons that might have devastating and unintended collateral effects, flexible engagement levels dependent upon the transmitted power and irradiation time makes the DE weapons unique and valuable. A third important aspect of the directed-energy weapons is that they are extremely precise. Directed-energy weapons allow the attackers employing them to select the specific part of a fast-moving target that they wish to strike. In fact, with sufficient tracking and characterization, this unprecedented precision will accomplish surgical strikes with no collateral damage or fratricidal effects on friendly forces. 24 A fourth important feature of directed-energy weapons is their freedom from gravitational limits. Directed-energy beams are essentially immune to gravity due to their lack of mass, which also frees them from the kinematic and aerodynamic constraints that limit traditional weapons. 2 A fifth key feature of the directed-energy weapons is that they are area weapons that can engage multiple targets within a hostile area with minimal prior information on threat characteristics. They can affect all targets in that area and can be rapidly retargeted to provide protection in several directions. 26 A sixth directed-energy weapon advantage is their deep magazines, which need only fuel and battery chargers, as well as low operating costs. For example, a tactical high-energy laser shot is estimated to cost about $8,000, whereas firing a Patriot (PAC-3) missile costs $3.8 million; an AIM-7 Sparrow missile costs approximately $125,000; and a Tomahawk cruise missile costs roughly $600,000. Although the beam-generating system may be expensive to build and maintain, the price of engagements is minimal because the system expends only energy. 27 A final unique characteristic of directed-energy weapon is their all-weather attack capability to reach virtually untouchable targets. They are unaffected by weather and can penetrate deep into the earth, enabling attacks on buried bunkers, as well as targets in space. 28 2. Limitations and Problems with Directed-Energy Weapons Directed-energy weapons offer new ways of fighting that will change current doctrines, tactics, and strategies. As with the introduction of any new systems, directed energy weapons also have limitations and drawbacks that will tend to mitigate their fast growth. The first problem facing directed energy is operating under real-world conditions. While a new technology like directed-energy weapons are being transitioned out of the laboratory to the real battlegrounds, there might be relatively simple countermeasures that can restrict the effectiveness of directed-energy weapons that have been overlooked by those working in the laboratories and that may be relatively simple to implement. Fratricide is probably the second biggest drawback in using this technology. Some directed-energy weapons are not very discriminating. Radiating at an enemy will not only affect the target system, but also anything else in the beam’s path. Any friendly forces within the footprint of the beam will be at significant risk. 29 A third great limitation of some types of directed-energy weapons is that they are highly susceptible to degradation by the atmosphere in the presence of obscurants, whether natural or manufactured, such as dust, clouds, rain and smoke. Another potential limitation is damage or performance-degrading assessments. Due to little directly-observable feedback from the target as to the effects of a hit, one may not know positively if a directed-energy weapon has been successful.30 The last concern regarding directed-energy weapons is related to their usage against allied forces. High-powered microwave weapons may be relatively simple for terrorist forces (and others) to acquire and use in an asymmetric manner. In order to counter this, all electronic platforms and weapon systems must be hardened and shielded. Table 3 summarizes the advantages and disadvantages of directed-energy weapons. Like their strengths, directed-energy weapons weaknesses differ from those encountered by current technologies and contribute to the impression that these weapons are very different. Like all other weapons, directed-energy weapons have limitations and problems. However, their potential influence on the current battlefield strategies **far outweighs their limitation** E. EFFECTS ON TARGETS There are various means of affecting targets using directed-energy weapons. The following discussion includes some of the commonly used terms to discuss these various means. Deny is a temporary action, and it is defined as the ability to eliminate the enemy’s operational capacity without inflicting harm, whereas degrade means to achieve this impact with minimal injury on the enemy systems. Deny and degrade are both similar in that they both are non-permanent and affected systems will return to normal operation within a period of time. 24 The concept of damage involves moderate injury to incapacitate the enemy systems for a certain period of time. This action may be permanent, depending upon the severity of the attack. Finally, destroy reflects the idea of permanent injury on the enemy systems which would be require total replacement. 31 In principle, depending on some conditions such as distance between the weapon and target, generated power, and target-hardening level, directed-energy weapons affect their targets through either a soft-kill or a hard-kill. 1. Soft-Kill A soft-kill is achieved when the effects of a directed-energy weapon stops operation of the target system temporarily. As is understood from their definitions above, deny, degrade, and some damage effects are the practical methods of a soft-kill mechanism. Disrupting the electronics of a guided missile, causing it to miss its target, or suppressing or damaging visible, infrared, and microwave sensors might be given as examples of a soft-kill. The results are a temporary loss of function, but they can seriously compromise operational success. A soft-kill by directed-energy weapons against human targets means painful stimulation of human nerves, hearing or skin. After brain tissue absorbs an electromagnetic pulse, it slightly but rapidly expands and produces a supersonic wave which is received by the inner ear. If this pulse of energy exceeds a certain threshold and the supersonic wave is too strong, the human ear will not function. 32 The Active Denial System, discussed in a later chapter, is an example of a directed-energy weapon which uses a soft-kill mechanism by heating up the skin's surface 2. Hard-Kill Like conventional weapons, directed-energy weapons can defeat their targets by causing physical damage to the structure of the targets. A hard-kill is achieved when sufficient energy is delivered into the target system, such that it is permanently damaged or destroyed. 33 Destroying a ballistic missile with an airborne laser during its boost phase by heating, melting, or vaporizing its skin is an example of a hard-kill. A hard-kill can include: • Structural damage • Melting of components • Shorting out electronics • Fusing and immobilizing moving parts Directed-energy weapons have adjustable kill mechanisms as well as both hardkill and soft-kill capacities, which makes them unique in comparison to kinetic energy weapons. Instead of only destroying targets, directed-energy weapons have soft-kill potential which enables temporary damage and degradation.

**SBLs can achieve global BMD capability**

Bayram **Deveci**, Doctorate at Naval Postgraduate School, **07** [Naval Postgraduate School, “Directed-Energy Weapons: Invisible and Invincible?”, September 2007, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA473993&Location=U2&doc=GetTRDoc.pdf (Ghosh)]

The space-based laser (SBL) is another high-energy laser type that uses a hydrogen fluoride (HF) chemical laser to achieve an effective, global ballistic missile defense capability. The SBL is currently envisioned to be a constellation of orbital laser weapons capable of engaging and destroying several classes of missiles, launched from anywhere in the world, during the boost phase. The SBL will also have the capability to destroy or disable other space-based systems such as surveillance satellites. Moreover, a different laser type that has an appropriate wavelength other than that of the hydrogen fluoride (HF) chemical laser could attack ground targets. According to sources, the best space-based laser (Figure 13) concept would operate at an altitude of 1,300 km above the earth’s surface with twenty different spacebased platforms. This would provide a continuous worldwide defense ability to destroy hostile missiles launched anytime from anywhere on the globe. Each space-based laser platform consists of four major subsystems: • A laser device, which uses megawatt-class hydrogen fluoride (HF) chemical laser operating at 2.7 microns. • An optics and beam control system, which has a 2.4- to 4.0-meterdiameter primary beam director and an integrated beam control system. • An acquisition, tracking, pointing and fire control (ATP/FC) system, which includes a stabilized platform to maintain the beam on the target. • Associated space systems, which provide the necessary electrical power, laser reactants, on-board data processing, and command and control. 72 Two other longer term options are considered to involve space-based laser systems. The first uses space-based mirrors and places the laser on the ground. The distinct advantage of this architecture is that the high-energy laser is kept on the ground, which eliminates refueling and complex maintenance problems. Although it has an advantage, this option has disadvantages that include the requirement for higher energy levels to counter greater losses due to atmospheric transmission. A second option is deployment of space-laser weapons with large orbital mirrors. The concept behind this architecture is to increase the altitude of platforms and insert bifocal mirrors into the same orbit as the laser weapons. One distinct advantage of this architecture is the possibility of reducing the weight and expense of the system. Instead of twenty laser platforms, the concept requires roughly ten platforms and ten orbiting mission mirrors.74 This will decrease the number of laser platforms but will also require higher energy levels because of the higher orbital altitude.

**SBLs are the only form of missile defense that can prevent nuclear, chemical, and biological attacks**

**Hardesty** Captain David C. is is a member of the faculty of theNaval War College’s Strategy and Policy Department **’05** (Naval War College Review, “Space-Based Weapons: Long-Term Strategic Implications and Alternatives”, Spring 2005, Hopkins)

Space-based weapons, like all space systems, are predictable and fragile, but they represent significant combat power if used before they are destroyed— leading to a strong incentive to use these weapons preemptively, to “use them or lose them.” The problem is further complicated by the difficulty in knowing what is occurring in space. As the Commission to Assess United States National Security Space Management and Organization pointed out: Hostile actions against space systems can reasonably be confused with natural phenomena. Space debris or solar activity can “explain” the loss of a space system and mask unfriendly actions or the potential thereof. Such ambiguity and uncertainty could be fatal to the successful management of a crisis or resolution of a conflict. They could lead to forbearance when action is needed or to hasty action when more or better information would have given rise to a broader and more effective set of responsive options. 10 This lag in situational awareness can increase the effectiveness of attacks. That is, striking first is likely to mean inflicting disproportionate losses on the enemy; waiting increases the chances of suffering disproportionate losses oneself. SPACE-BASED WEAPON CONCEPT S : ADVANTAGES , I S SUES , AND REACTION If technical and fiscal challenges are overcome, there is little doubt that an integrated combination of airborne, terrestrial, and space-based lasers with orbiting relay mirrors would be a flexible weapons constellation. Striking at 186,000 miles a second, laser weapons and mirrors help overcome the problems posed by the large distances and high speeds for targeting in and from space. 11 Perhaps they would be most effective at space control, but they would also be useful for boost-phase intercept of ballistic missiles. This is a critical missile-defense function, particularly when dealing with nuclear, chemical, or biological warheads. If not destroyed in boost, nuclear-tipped missiles may deploy decoys, and chemical or biological warfare payloads might be broken into small, separate submunitions or canister reentry vehicles, each of which is a lethal weapon that must be destroyed. 12 In such cases there is a high likelihood that defenses would be overwhelmed. Evolutionary Air and Space Global Laser Engagement (EAGLE) Space-based systems would be logical for this important mission.

**Free-electron lasers are best: speed, precision, affordability, continuous engagements and diversity**

David M.**Mason**, Lieutenant Colonel in the United States Air Force, Masters of Strategic Studies Degree from the Air War College **09** [Air War College Maxwell Air Force Base, “Directed Energy Weapon System for Ballistic Missile Defense”, February 2009, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA540023&Location=

U2&doc=GetTRDoc.pdf (Ghosh)]

During the past two decades, this technology has advanced considerably in areas such as power, beam control, and pointing and tracking techniques which enables the system to hit a target at great ranges.57 This energy can be used to engage satellites, aircraft, and vehicles, but the most promising aspect of this technology is the ability to destroy missiles traveling at mach or supersonic speeds. In addition to being able to being able to engage rapidly moving targets,lasers can be re-directed by mirrors to hit these targets that fall outside of line-of-sight range. This all can be donewithout compromising much of the beam’s initial power.58 The unique attributes of lasers has the potential to revolutionize missile defense operations. Those attributes include: 1. Speed of Light Capability: This represents a core significant advantage of lasers.With the potential to travel at 186,000 miles per second, directed energy offers the warfighter near-instantaneous options to destroy targets at great distances. Quite naturally, this attribute also greatly simplifies tracking and targeting of missiles while also greatly reducing target counter-measure techniques. 2. Precise and Adjustable Targeting: Directed energy offers extremely precise targeting effects, which are capable of delivering energy to a small spot on a missile. This phenomenon would cause a missile to undergo aerodynamic stress which would lead to catastrophic failure. A related feature of this characteristic is the ability to adjust the amount of energy required to successfully propagate through the atmosphere from surface locations. The free-electron laser is the only form of directed energy that has demonstrated that capability. 3. Affordability: Once deployed, lasers will be able to intercept missiles at relatively low costs per shot. Although the beam-generating system may be initially expensive to build and 15maintain, the price per engagement will be relatively cheap as compared to conventional systems.59 For example, the Missile Defense Agency conducted a missile intercept experiment back in December of 2008using a kinetic energy intercept vehicle. The total cost of the experiment ranged between $120 million and $150 million, although the Agency did employ several other defense systems to ensure a successful intercept.60 Navy surveillance ships and space-based command and control platforms provided a robust network for the experiment that assisted with launch intercept. 4. Repetitive Engagements: Laser have a great capacity for continuous engagements over an extended period of time,and are constrained only by the availability of power and the need to vent energy producing by-products such as heat. Conventional weapons, especially those firing precision-guided munitions, are constrained in the number of engagements it can execute. In additionto engaging threats,lasers can be used to detect, image, track, and illuminate targets. This process can work autonomously with the “kill laser” while also enabling the platform to lock onto a multiple number of missiles. 5. Weapon System Diversity: Directed energy systems can be placed on a variety of platforms to achieve optimum results. Airborne lasers are capable of attacking targets out to several hundred kilometers, while a ground-based platform could attack targets on a global scale. A complimentary network of space-based relay mirrors is required to extend a ground-based system to a global scale.

# Ext – SBL Solves Military Flex

**Directed-energy weapons provide a range of military operational capabilities – including countering ballistic missiles**Bayram**Deveci**, Doctorate at Naval Postgraduate School, **07**[Naval Postgraduate School, “Directed-Energy Weapons: Invisible and Invincible?”, September 2007, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA473993&Location=U2&doc=GetTRDoc.pdf (Ghosh)]

The significance of directed-energy weapons is that they provide a range of strategic and operational capabilities in both offensive and defensive military operations. Basic strategic and operational offensive applications are: • Suppression of enemy air defense (SEAD) • Attack against ground, air and maritime targets • Electronic suppression and disablement of command, control, communications, computers, and intelligence (C4I) systems • Close air support (CAS) • Battlefield air interdiction • Space control and anti-satellite operations • Suppressing or damaging visible, infrared, and microwave sensors • Asymmetric strikes • Dispersion of crowds, rioters (non-lethal anti-personnel attacks) • Speedboat pursuit Basic strategic and operational defensive applications are: • Ballistic missile (BM) and surface-to-air missile defense • Counter-artillery and rockets • Air defense • Counter-electronics against targeting and sensor systems • Fleet defense • Aircraft self-protection • Protection of armored vehicles • Neutralization of explosive traps and minefield cleaning • Critical infrastructure protection • Stopping of motor vehicles • Surveillance of coastal waters The host platforms can be ships, large or tactical aircraft that include helicopters, ground vehicles, ground bases and spacecraft.Directed-energy weapons have passed the stages of laboratory prototypes and even trial production for some applications. There is no doubt that they will become a major force multiplier due to their significant advantages over traditional kinetic weapons (see Table 3).

# Ext – Solves Boost Phase

**Only SBLs can knock down missiles before they reach boost mode.**

Matthew **Mowthorpe**, writer for Air and Space Power Journal (Branch of Air Force Research Institute) **02**

Air and Space Power Journal, “The Revolution in Military Affairs and Directed Energy Weapons”, 3/8/02, <http://www.airpower.maxwell.af.mil/airchronicles/cc/mowthorpe02.html> [Marcus)

SBLs would be located on satellites placed in low-earth orbit. The type of orbit would depend on the nature of the threat. A satellite’s orbital altitude is an important factor since it must place the laser, as frequently as possible, in a position where it can destroy the largest number of missiles in their boost phase. The satellite needs to be at an altitude sufficient to enable it to intercept the farthest boosting missile it can see without focusing the beam in such a way that closer and more vulnerable missiles are missed. The optimal altitude depends upon the height at which the booster's engines stop firing, the capacity of the laser, and the hardness of the missiles. When the Soviet Union’s ICBMs were considered the main threat, polar orbits were chosen since they provided good coverage of the northern latitudes. However, polar orbits concentrate SBLs at the poles where there are no ballistic missiles deployed. The optimum configuration would be a number of orbital planes inclined about 70o to the equator.7 It is generally accepted that SBLs would be incapable of lasing a missile re-entry vehicle with a destructive dose of energy during its midcourse and re-entry trajectory. Re-entry vehicles are hardened to survive the launch, midcourse and thermal re-entry phases of missile flight, then successfully detonate and destroy even hard targets.8 The missile must therefore be targeted during the time when it is above the clouds and atmosphere and before it deploys re-entry vehicles.

**Space missile defense ensures missiles are not blown up too late.**

Steven **Lambakis**, Senior Analyst and Managing Editor, *Comparative Strategy,* **07**

Hoover Institution, “Missile Defense From Space”, 3/2007, <http://www.gees.org/documentos/Documen-02177.pdf> [Marcus]

It is also known that enemies of the United States can put a nuclear weapon over U.S. territory using a ballistic missile. The detonation of this weapon at a high altitude could unleash an electromagnetic pulse that would wipe out satellite and airborne navigation, intelligence, and communications systems and impede any U.S. military response to the aggression. Such a pulse of energy would disable or destroy the unprotected technological infrastructure of a region or the nation. According to the emp Commission, “a regional or national recovery would be long and difficult and would seriously degrade the safety and overall viability of our nation. . . . [A]t some point the degradation of infrastructure could have irreversible effects on the country’s ability to support its population.” Space-based interceptors may be the only effective way to counter this threat and mitigate the effects of an electromagnetic pulse resulting from the intercept. Engaging the missile close to its launch point would release the resulting explosion of gamma rays closer to the attacker’s territory. Relying on an intercept in space, in the midcourse of a missile’s flight, risks damaging unprotected satellites (i.e., just about all commercial and civilian satellites), regardless of who owns them.

**Space based lasers solve boost phase interception**

**Blazejewski,** “private practice in New York City, focusing primarily on international corporate and financial transactions. He received his master’s degree in public affairs from the Woodrow Wilson School at Princeton University and his JD degree from the New York University School of Law.”, **8** [Kenneth S. Blazejewski, Strategic Studies Quarterly, Spring 2008; http://www.au.af.mil/au/ssq/2008/Spring/blazejewski.pdf; Pitman]

Second, US weaponization of outer space cannot be fully analyzed without considering the space requirements of a ballistic missile defense system. Of the many possible future BMD systems, most envision some amount of space components. A more robust BMD system would require space interceptors,48 such as space-based lasers (SBL). Although boostphase interception may be possible from ground-based BMD systems, most boost-phase models rely on space-based weapons. Just as with the larger discussion of space weaponization, US policy on BMD is not entirely clear. In seeking to assuage the concerns of Russia and China, the United States has stated that it only plans to deploy a limited BMD shield directed at so-called rogue states. Yet some officials in the Bush administration have clearly demonstrated an interest in developing a more robust, multilayered BMD shield that can protect against attacks from stronger military powers.49 US withdrawal from the ABM Treaty suggests that these views are influential in shaping its policy.

# Ext – Solves Global

**SBMDs are cost effective – rapid response, global power project and constant presence proves**

Lorinda A.**Frederick**, Lieutenant Colonel in the Air Force Space Command, Masters in Advanced Air and Space Studies,**09** [Air & Space Power Journal, Volume 23, No. 3, “Deterrence and Space-Based Missile Defense”, Fall 2009, http://www.airpower.au.af.mil/airchronicles/apj/apj09

/fal09/frederick.html#frederick (Ghosh)]

Credible deterrence depends on technological capability and political will.During the Cold War, the UnitedStates relied on the nuclear triad to deter ballistic missile threats emanating from the Soviet Union. These capabilities reinforced the political will expressed through policies such as massive retaliation and assured destruction. We had no defense against ballistic missile attacks.Today, the nuclear triad still deters threats from Russia and China; however,the threat has expanded to include rogue elements and proliferators undeterred by Cold War methods.The current land- and sea-based missile defense architecture provides a limited defense against these threats, butitlacks redundancy anddepends on the proper positioning of assets to intercept missilesin their midcourse and terminal phases of flight. Attaching a monetary figure to SBMD is difficult. A cost/benefit assessment should includepotential cost savings in other parts of the missile defense architecture in relation to the benefits, includingrapid responsiveness, global power projection, and constant presence. The UnitedStatesmust also consider the cost of expanding current missile defense layers to achieve the added deterrent and protective effect that SBMD could provide. Putting a monetary value on deterrence represents the main difficulty of a comprehensive assessment.

**Space-basing key to global defense**

**Independent Working Group** (The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.2007(Collective report/study) “missile defense and the space relationship and the 21st century”2007 <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

These priorities necessitate the deployment of a system ca­pable of constant defense against a wide range of threats in all phases of flight: boost, midcourse, and terminal. A layered sys­tem – encompassing ground-based (area and theater anti-mis­sile assets) and sea-based capabilities – would provide multiple opportunities to destroy incoming missiles in various phases of flight. A truly global capability, however, cannot be achieved without a missile defense architecture incorporating interdic­tion capabilities in space as one of its key operational elements. In the twenty-first century, space has replaced the seas as the ultimate frontier for commerce, technology and national se­curity. The benefits of space-based defense are manifold. The deployment of a robust global missile defense that in­cludes space-based interdiction capabilities will make more expensive, and therefore less attractive, the foreign development of technologies needed to overcome it, par­ticularly with regard to ballistic missiles. Indeed, the en­during lesson of the ABM Treaty era is that the *absence* of defenses, rather than their presence, empowers the develop­ment of offensive technologies that can threaten American se­curity and the lives of American citizens. And access to space, as well as space control, is key to future U.S. efforts to provide disincentives to an array of actors seeking such power.

# Ext - Now Key

**No time to wait missile defense is key to stop Growing threats**

**Independent Working Group** (The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.2007(Collective report/study) “missile defense and the space relationship and the 21st century”2007 <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

Given this multiplicity of ballistic missile threats, the United States must deploy a missile defense that deters hostile states from developing or acquiring missile capabilities that could threaten the United States, our allies and coalition partners, and our forces deployed abroad. Furthermore, our missile defense R&D programs, together with planned deployments, must be sufficiently robust so as to dissuade would-be missile possessors from attempting to challenge the United States. We must deter future enemies from acquiring ballistic mis­siles; just as in the past we dissuaded them from developing strategic bombers because of our ability to overwhelm such systems. Finally, our missile defense must be capable of de­feating ballistic missiles, whatever their range and type, that could be launched against us. As we dissuade future potential possessors, we must rec­ognize that threats are increasing at a pace that no longer allows the luxury of long lead times within which a missile de­fense could be developed and deployed. Therefore, the United States must develop and deploy rapidly a missile defense with global reach, capable of coping with threats against the Unit­ed States and our forces and allies *from any direction*, while we attempt simultaneously to dissuade hostile actors from acquiring missiles through our ability to render such invest­ments a poor use of limited resources. Additionally, given the uncertainty in predicting where, when, and by whom missiles might be launched – and what their targets may be – there is a need for constant defenses capable of intercepting missiles irrespective of their geographic origin.

**Threats of a devastating missile attack justify US response.**

Kevin **Norgaard**, LT. Colonel, professor at US Army War College, **02**

US Army War College, “Where Now National Missile Defense?”, 4/9/02, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA404491&Location=U2&doc=GetTRDoc.pdf>, [Marcus]

There is a vast array of threats to the United States. We have seen what hijacked, fuelladen airliners can do to a city's skyline-. Biological and chemical agents could be introduced into public transportation systems, food or water sources. Radioactive waste or even crude, small-yield nuclear devices could be delivered by ship, rail or truck to many attractive target areas. By all means, the United States should take prudent security steps to mitigate the possibility of all such events. But there is a significant difference between those threats and the launching of a ballistic missile carrying a weapon of mass destruction against the United States. We can do something to counter the other events. Especially if we have intelligence, we could theoretically track, intercept and destroy any of the above threats before their lethal effects are delivered. But even if we have intelligence that a ballistic missile launch has occurred, we are helpless against it once the missile is in flight. The risk associated with a nuclear ballistic missile attack can be categorized in the traditional risk model of probability and outcome.26 Many used to think the probability of nuclear ballistic missile attack against the United States was nearly zero. After 11 September, one can assert that the probability is still relatively low, but it has moved up the scale from "remote" to either "unlikely" or "likely". The critical piece of the risk model is the outcome. A nuclear missile impacting in a large United States city would have a catastrophic outcome. An unclassified source describes a "small" nuclear attack in a major urban center producing 180,000 nuclear weapon deaths as a very "optimistic" projection with the number of deaths usually being far greater.27 Add to this the billions of dollars of damage and the likelihood that a significant portion of a major urban area would be uninhabitable for years and you clearly have an unacceptable catastrophe. These low probability, but high consequence situations result in moderate or high-risk situations. These risks are clearly are clearly the types of things for which we purchase insurance in our private lives. Fire, flood, automobile and homeowners insurance all protect the owner from the possibility that he will sustain unbearable loss. Yet, our nation has no insurance from ballistic missile attack. This concept from our daily lives can be related to the problem of national missile defense graphically. Figure 1 portrays the standard risk management fundamentals from the Risk Management Guide for DoD Acquisition.28 This is the risk management construct that Department of Defense weapons systems managers use to identify risks in large Defense Acquisition programs. The graphic in Figure 1 shows how risks are generally categorized if we assume that "probability" and "consequence" are weighted equally. The chart shows us that if the probability of an attack is "remote" or "unlikely", and if the consequence of an attack is "unacceptable", then risk is "moderate". Moderate risk means that the approach may be unacceptable and additional management attention is required.29 If we assume the probability of attack is "likely", then the risk moves up to "high".

**Now is uniquely key to start building weapons in space.**

Everett **Dolman**, Associate Professor of Comparative Military Studies at the U.S. Air Force's School of Advanced Air and Space Studies **06**

SAIS Review, “U.S. Military Transformation and Weapons in Space”, 2006, SAIS Review 26.1 (2006) 163-175[Marcus]

Indeed, it is just this concern for the unanticipated arrival of technology X that initially motivates my own preference for the immediate deployment of space weapons. So long as America is the state most likely to acquire a breakthrough technology in this area, my concern is limited to the problem of letting technology take us where it will. But what if an enemy of democratic liberalism suddenly should acquire the means to place multiple weapons into orbit quickly and cheaply? The advantages gained from controlling the high ground of space would accrue to it as surely as to any liberal state, and the concomitant loss of military power from the denial of space to our already-dependent military forces could cause the immediate demise of the extant international system. The longer the United States dithers on its responsibilities, the more likely a potential opponent could seize low-Earth orbit before America is able to respond. In such circumstances, America certainly would respond eventually. Conversely, if America were to weaponize space today, it is unlikely that any other state or group of states would find it rational to counter in kind. The entry cost to provide the necessary infrastructure is too high—hundreds of billions of dollars, at minimum. The years of investment needed to achieve a minimal counter-force capability—essentially from scratch—would provide more than ample time for the United States to entrench itself in space and readily counter preliminary efforts to displace it. The tremendous effort in time and resources would be worse than wasted. Most states, if not all, would opt not to counter U.S. deployments in kind. They might oppose U.S. interests with asymmetric balancing, depending on how aggressively America uses its new power, but the likelihood of a hemorrhaging arms race in space should the United States deploy weapons there—at least for the next few years—is extremely remote.

**Now is key – Development times are in line with those of ballistic missile threats.**

Jacques **Gansler,** Former Under Secretary of Defense for Acquisition, Technology and Logistics, **10**

CENTER FOR TECHNOLOGY AND NATIONAL SECURITY POLICY NATIONAL DEFENSE UNIVERSITY WASHINGTON, DC, “ Ballistic Missile Defense Past and Future, 4/10, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA527876&Location=U2&doc=GetTRDoc.pdf> [Marcus]

While 10- or 15-year projections of ballistic missile threat capabilities may seem too distant to warrant immediate countering strategies, it should be emphasized that the development of a sophisticated U.S. military system typically takes 15 to 20 years before it can be fully fielded. Thus, these threats to the United States and its allies need to be addressed in the near term. Stopping their development is obviously the best approach to take. However, because this cannot be guaranteed, the “insurance policy” of a defense system against such threats appears warranted.

is no ra­tional answer, save one: it would be only if someone seeks an aggressive edge over someone else and hopes to achieve that edge “peacefully.”

# Weaponization Inevitable- US

**US weaponization of space is inevitable (alt tag China Feels threatened by us space activities)**

**Gruselle**( Bruno Gruselle senor policy analyst) 2007(Report) “the final frontier missile defense in space” **2007**( <http://www.unidir.org/pdf/articles/pdf-art2600.pdf>) (Pitman)

Since President George W. Bush took the oath of office in 2001, concerns have grown about the possibility that the United States will develop and deploy space platforms capable of striking both on Earth and in outer space. Much of the anguish was based on memories of efforts conducted by the Reagan Administration to design space-based missile defence systems—the Brilliant Pebbles programme of small, satellite-based interceptor missiles—and on existing research efforts on space-based lasers. Official US documents, such as the United States Space Command’s Vision for 2020, insisting on the dominance of space for military purposes, did nothing to alleviate these concerns, as everybody drew the conclusion that Washington’s plan was to assure dominance by being able to wage war in and from space.1 Ugly terms such as “arms race in space” were used to describe the grim future that the policy, as perceived by arms control experts, was promising. Beijing felt it was directly threatened and garnered support for its idea of establishing an ad hoc committee of the Conference on Disarmament to discuss a treaty on the prevention of an arms race in outer space (PAROS). China argued in particular that it felt the deployment of missile-defence systems in space would threaten its deterrent and would consecrate the United States’ domination of space.2 The US government steadily opposed the creation of such a committee for fear that a treaty would reduce its ability to operate in space and undermine its security interest.3 It is improbable that such a position will change in the coming years—or ever—as US military dependence on its space assets is becoming ever more important. This article argues that even if the United States is likely to continue resisting attempts to reinforce the existing treaty on the militarization of space (the Outer Space Treaty) since most of its future security and defence will be based on space-based platforms, the deployment of space-based weapons does not seem to be its aim. Therefore, it seems possible to find a way to balance US security concerns and the necessity to prevent an arms race in space.

**Current us policy about space militarization is leading an arms Race**

**Gruselle**( Bruno Gruselle senor policy analyst) 2007(Report) “the final frontier missile defense in space” **2007**( <http://www.unidir.org/pdf/articles/pdf-art2600.pdf>) (Pitman)

Considering the current global security situation and trends, any debate on the deployment of weapons in space should be focused on finding a balance between all states’ security needs rather than on trying to find a way to ban the larger spectre of military application platforms in space. Future US administrations may be willing to engage in a debate—even negotiation—on the weaponization of space if US security concerns could really be addressed by it. To make this possible, a tentative first step would be to recognize that not all space-based weapons constitute a threat to international security. Some may even enhance it—such as a future global capability to intercept in-flight missiles fired from a rogue state. Failure to make any concession on the reality of the proliferation concern and the potential of space systems to address this concern will probably lead to the continuation of the present US policy and ultimately to the absence of any progress in the prevention of an arms race in space.

# Weaponization Inevitable- General

**Space is weaponized now**

**Independent Working Group**(The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collectivereport/study) “missile defense and the space relationship and the 21st century”2007 http://www.missilethreat.com/repository/doclib/IWGreport.pdf (Pitman)

First of all, space already is weaponized.16 Like the sea, space is a “medium,” which Webster describes as “a means of effecting or conveying something.” It could be life; it could be things, natural and man-made. The sea is finite to the earth. It is fungible so that the medi­um, itself, has no boundaries as a substance but remains limit­ed by its environment. It is a medium through which or in which weapons can be passed or stationed. Webster describes weapons as “an instrument of offensive or defensive combat… a means of contending against another.” Therefore, following these defini­tions, a fixed radio buoy transmitting data for military use is a weapon, as is a torpedo which is made to pass through the sea, as is an aircraft carrier specifically designed to exist in the sea. The sea has been weaponized for thousands of years and ef­forts to control that weaponization effectively through treaties have been quite limited, mainly through extending the sov­ereign shorelines of littoral states to include an agreed-upon area of contiguous seabed (which one nation occasionally steals from another). The one such effort in modern history to prevent weaponization of the seas was the failed 1922 Wash­ington Naval Treaty limiting capital ships of the major pow­ers but excluding aircraft carriers, which became the capital ships used by Japan to attack Pearl Harbor. It is, thus, extremely difficult to seek ways to control weap­onization through regimes, agreements and treaties. In space everything moves, so that there are no fixed boundaries, save what could be staked out on celestial bodies, like the moon which also moves.17 Thus, verification and enforcement of trea­ty conditions is highly complex at best. This reality dictates the imperative that the United States must exercise the great­est care in any discussions or actions relative to another space treaty, for the question arises: Who will control whom and what and how? Using Webster’s criteria, space has been weaponized since 1944, when the U-2, the first ballistic missile, was launched by Nazi Germany against targets in Southern England. Space was the necessary medium through with the U-2 had to travel to strike its earthly target hundreds of kilometers away. The first orbiting object, *Sputnik* (1957), could be classified, at mini­mum, as a potential weapon, capable of relaying data back to military command posts, which it doubtlessly did.

**China and Russia are trying to slow down US space systems in order to catch up.**

Peter **Brookes**, Senior Fellow, National Security Affairs and Chung Ju-Yung Fellow for Policy Studies Douglas and Sarah Allison Center for Foreign Policy Studies, **08**

Heritage Foundation, “Marking the boundaries of weapon use in space”, 6/25/08, <http://www.heritage.org/Research/Commentary/2008/07/Marking-the-boundaries-of-weapon-use-in-space> [Marcus]

Indeed, considering their great power ambitions, it is feasible that Beijing or Moscow would deploy space weapons today if they could; the treaty could merely be a diplomatic gambit to buy time to develop their own counter-space programmes. To this end, a US official recently told a congressional commission that China is "aggressively" developing abilities to target satellites with (undeclared) space and counter-space assets. Other analysts are also concerned that Moscow and Beijing are trying to put the brakes on the possible development of a space-based missile defence system, too, which has been considered. (This concept may be given a re-look in view of Iran's most recent round of missile testing and the basing problems that have befallen missile defence systems in Eastern Europe.)

**China is building up space systems now.**

Jackson **Maogoto,** masters in Law from University of Cambridge, **06**

Berkeley Electronic Press, “The Military Ascent into Space: From Playground to Battleground – New Uncertain Game in the Heavens, 2006, <http://law.bepress.com/cgi/viewcontent.cgi?article=6239&context=expresso&sei-redir=1> [Marcus]

China’s position as a space power was cemented with the successful launch of its first manned spaceflight into the earth’s orbit on February 15, 2003. China became only the third nation to achieve the feat. In tandem with this, it has undertaken an active role in sharpening its war fighting space skills, from creating anti-satellite weaponry, building new classes of heavy-lift and small boosters, as well as improving an array of military space systems. It is no secret that China has long harbored long-term plans to launch its own space station, and possibly a reusable space plane as well. While one of the strongest immediate motivations for this program appears to be political prestige, China’s manned space efforts are almost certainly geared to contribute to improved military space systems.57

# A2 No tech

**DEW technology that can shoot down intercontinental missiles has been developed.**

Matthew **Mowthorpe**, writer for Air and Space Power Journal (Branch of Air Force Research Institute) **02**

Air and Space Power Journal, “The Revolution in Military Affairs and Directed Energy Weapons”, 3/8/02, <http://www.airpower.maxwell.af.mil/airchronicles/cc/mowthorpe02.html> [Marcus)

Directed energy weapons (DEW) are a technology area that has been neglected in this RMA. The technologies associated with DEWs have been maturing, while political support and new expenditures from Congress are making deployment of DEW systems in the near future a realistic possibility. The use of DEWs on the modern battlefield would contribute to the current RMA. DEWs will be able to provide defense against short-range artillery shells and theater/intercontinental missiles, as well as anti-satellite capabilities that will contribute to a space control strategy. This article examines advances in DEW technology and the new military missions and roles that will be enabled by these new weapon systems.

**Space Lasers work and have been around**

**Canavan** “Gregory Canavan works in the Physics Division Office of the Los Alamos National Laboratory.  In January 2000 he was elected an APS Fellow through the Forum on Physics and Society for his contributions leading to the improvement of military science and technology”**01 [**Space-Based Missile Defense: Has Its Time Come?] 2001; <http://www.marshall.org/pdf/materials/56.pdf> (Pitman)

There have been technically lasers in space for decades; various government and contractor teams have worked on them. They have been very productive, and have hung in there through some tough times. Those tough times were largely driven by change in mission. When we started the laser in space, it was the only way that we could see to go after the SS-9 in boostphase. The SS-9 was essentially a titanium can or balloon full of gas; it was a very easy, soft target. But the SS-9 got rolled into the SS-18, which was intrinsically harder in its structure. So you go into this race of laser-hardening vs. the missile. The net result, twenty years later, is that the space laser, although having started first, because it got pushed back and because it’s bigger and in some ways more complex, is somewhat less mature. The goal now is to bring space lasers along by a time like 2012 or 2015. In a sense, it is a little bit delayed. That doesn’t bother me, though, because there is an important role for the space laser. If you do something in boost, you have to do it very fast. In that situation, it is good to be able to count on a speed-of-light weapon, rather than a kinetic energy interceptor. So you can see a time when a combination of faster missiles, shorter-range missiles that you want to hit, and targets other than missiles, could drive you to want to have a speed-of-light weapon. I personally fell off the boat on lasers twenty years ago because I couldn’t figure out how to make them really survivable. They’re fairly visible, and the concern was that someone could drop a ton of gravel in the path or something like that. But you could arguably put a kinetic-energy set of interceptors together with a space-based laser, and that combination is actually quite survivable.

# Feasibility

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**Multiple threats exist that can be countered by missile defense**

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Yet there is ample reason for concern. The threat envi­ronment confronting the United States in the twenty-first century differs fundamentally from that of the Cold War. An unprecedented number of international actors have now acquired – or are seeking to acquire – ballistic mis­siles and weapons of mass destruction. Rogue states, chief among them North Korea and Iran, have placed a premi­um on the acquisition of nuclear, chemical and biological weapons and the means to deliver them, and are moving rapidly toward that goal. Russia and China, traditional competitors of the United States, continue to expand the range and sophistication of their strategic arsenals. And a number of asymmetric threats – including the possibil­ity of weapons of mass destruction (WMD) acquisition by terrorist groups or the decimation of American critical in­frastructure as a result of electromagnetic pulse (EMP) – now pose a direct threat to the safety and security of the United States. Moreover, the number and sophistication of these threats are evolving at a pace that no longer allows the luxury of long lead times for the development and de­ployment of defenses. In order to address these increasingly complex and multifaceted dangers, the United States must deploy a system that is capable of comprehensive protection of the American homeland as well as its overseas forces and its allies from the threat of ballistic missile attack. Over the long term, U.S. defenses also must be able to dissuade would-be missile possessors from costly investments in missile technologies, and to deter future adversaries from confronting the United States with WMD or ballistic mis­siles. Our strategic objective should be to make it impos­sible for any adversary to influence U.S. decision-making in times of conflict through the use of ballistic missiles or WMD blackmail.

Space based BMD is possible – recent breakthroughs

Dr. Steven **Lambakis**, Senior Defense Analyst at the National Institute for Public Policy, 20**07**. High Frontier, 3:2, “Leveraging Space to Improve Missile Defense,”

Are we attempting the impossible? I believe highly-effective defenses against future ballistic missile threats will be a challenge to develop, but not impossible, especially if we find the political will to focus on the best ways to leverage the space environment to accomplish this mission. With several successful hit-to-kill intercept tests in the bag and the proven combat performance of short-range land-based defenses, we have shown that we can “hit-a-bullet-with-a-bullet.” We also have made great strides in component miniaturization and advances in materials, and over the past twenty years have improved performance in interceptors, sensors, and battle management. This technological progress is key to considering whether the operation of space-based interceptors is feasible, effective (as part of the overall US missile defense system), and affordable.

**No barriers to missile Defense**

**Canavan** “Gregory Canavan works in the Physics Division Office of the Los Alamos National Laboratory.  In January 2000 he was elected an APS Fellow through the Forum on Physics and Society for his contributions leading to the improvement of military science and technology”**01 [**Space-Based Missile Defense: Has Its Time Come?] 2001; <http://www.marshall.org/pdf/materials/56.pdf>

Q: I get the impression that the Brilliant Pebble technology is more mature than I had realized. Canavan: In 1992 we were arguably two years from the end of engineering and manufacturing development. Today, if you wanted to deploy the system in four years, you could do that comfortably. There is nothing magic here. If we wanted to deploy land-based or sea-based NMD in four years, we could do it. It’s not a matter of can or can’t, as my old coach said – it’s a matter of will or won’t. (Pitman)

**Missile defense is possible and needed now**

**Independent Working Group (**The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collective report**/**study) “missile defense and the space relationship and the 21st century”2007 <http://www.missilethreat.com/repository/doclib/IWGreport.pdf> (Pitman)

Missile defense has entered a new era. The decades-long debate over whether to protect the American people from the threat of ballistic missile attack has been settled – and settled un­equivocally in favor of missile defense. The rigid constraints of the Anti-Ballistic Missile (ABM) Treaty, which made the con­struction of effective anti-missile capabilities impossible dur­ing the decades of the Cold War, are now a thing of the past. What remains an open question is what shape the American missile defense system will take in the years ahead.

**Studies that say missile defense Fails are bias**

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This is not to say that there have not been good studies, based on good science and leading-edge technology that look at missile defense harshly. But they do so with a bias to seek out and evaluate designs that hope to succeed, rather than ones prone to failure. Fortunately, such work has been ongoing throughout the last half-century and still continues. The prob­lem, however, still is this: Since the advent of the ABM Treaty, continuing through to the present, these kinds of efforts more often than not have been systematically marginalized by gov­ernment as “not relevant to the problems of the day.” Thus, to a disturbingly large degree, the trend line of poli­cy thinking and government research and management still center on the analytical perspectives arising from reports and studies that continue to shape their formulas toward cast iron stoves, such as the particular ones referenced here from CBO and APS, as well as from the commentaries of other “authori­tative” bodies who very openly oppose missile defense.

**Perception of starting missile defense Prevents prolif and increases deterrence**

**Independent Working Group**(The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collectivereport/study) “missile defense and the space relationship and the 21st century”2007 http://www.missilethreat.com/repository/doclib/IWGreport.pdf (Pitman)

In other words, if anything, a credible missile defense – even in development stage – is much more likely to help slow an arms race and discourage proliferation, because it raises the costs and lowers the chances of success for aggressor na­tions or terrorist groups to try to find ways to overwhelm an effective missile defense system with their offensive weapons. In this sense, it can become a deterrent and thus contribute to stability. Arguably, there is some evidence of this likelihood, in that at least some of the reasons for the Soviet Union col­lapse was due to an inability to keep up with U.S. technological developments in this field, and even as the USSR was scaling itself down, it was engaging in ways to share missile defense technology and use – an effort that was discontinued by the U.S. government after 1993.10 To close the loop in this logic train: if America has never had missile defense, how come the Soviet/Russian and Chinese nuclear arms buildups have continued unabated over these many years, as has the growth of proliferation? According to the MAD culture, one would have thought arms races and pro­liferation would have long since slowed – thus making a case based on fact that America, indeed, should continue to fore­go missile defense. But there is no fact to substantiate such a claim. To the contrary, while certainly some arms control ini­tiatives have proved useful – paradoxically because of U.S. arms buildups during the Cold War11 – if history is any exam­ Trea­ple, effective missile defense capabilities could actually help to strengthen and enhance responsible arms control efforts, rather than to foster arms races and proliferation, as oppo­nents so vigorously maintain.12 If there is one sliver of fact at all in these assertions, it prob­ably protrudes from the notion that an effective global missile defense system will threaten the military “integrity” of such evolving powers as China and Russia, by challenging their places in the world and, hence, be “destabilizing” to “world peace” – but perhaps not in the way most people think about world peace. Instead, such a system could well be destabilizing to any expansionist ambitions these or other countries (or terrorist groups) might entertain but only if theirs were covetous am­bitions toward other nations, such as the United States or its friends or allies. But short of that, why would any nation ob­ject to another nation wanting to defend itself? There

\*\*\*Earth BMD Fails\*\*\*

# 1AC- solvency

**Space-based NMD is best: it is the most effective and better than alt forms of NMD**

**Fakiolas and Fakiolas** [Efstathios T. Fakiolas](http://muse.jhu.edu/journals/mediterranean_quarterly/v018/18.4fakiolas.html#front) holds a PhD from the Department of War Studies, King's College London, and is currently working as a strategy and southeastern European affairs analyst at ATEbank. [Tassos E. Fakiolas](http://muse.jhu.edu/journals/mediterranean_quarterly/v018/18.4fakiolas.html#front) holds a PhD from IMEMO, Moscow, Russian Academy of Sciences and is a special adviser on Russian and east European affairs for a Greek business firm. **’09** (Korean Journal of Defense Analysis, Space control and global hegemony, 2009, Hopkins)

In this potentially threatening environment, the United States, Russia, and Israel have fielded ballistic missile defense systems, and are striving to further their capabilities against theater ballistic missiles.7 Yet the view widely held among policy elites and senior military officers alike is that for the time being ‘‘effective missile defenses do not exist.’’8 The primary defensive problem is to obtain the ability not just to deter but also to ward off nuclear and massive destructive missile attacks\* that is, to have the economic and technological resources to build an effective anti- missile shield. To this end, a great power needs to have sea and ground bases in numerous countries, particularly the big ones. But in this case, these countries are in danger of being the object of attack. That is why most of them, Canada for instance, have denied offering their territory for such purposes. Thus, insofar as a land-, sea- and air-based shield is vulnerable to earth-based attacks, for missile defense to be impenetrable it should be deployed in a place where no one could readily have access. This place is space. The space dimension of missile defense is more significant than the ground, sea, and air dimensions taken together. Why? Purely from a military point of view, space is an operational medium ‘‘with some unique advantages: persistence; presence; perspective; access; precision; responsiveness.’’ With these attributes, ‘‘you can know more about the adversary. You can see the battlefield more completely and clearly. You can strike more quickly and precisely.’’ It is all this that constitutes ‘‘the asymmetric advantage,’’ which in turn, far from reducing space to a mere ‘‘force enhancer,’’ set the stage for a ‘‘space-enabled warfare.’’9 And of course, this The Korean Journal of Defense Analysis 139 advantage is functionally based on and augmented by satellites, which are ‘‘the only systems to solve the ‘beyond line of sight’ question.’’10 Providing continuous coverage 24 hours a day and 7 days a week, they operate across continents and oceans without being dependent on forward-basing as are aircraft and other sensors. In using satellites, a space-based missile defense ‘‘would provide the widest area of coverage and greatest number of shots against enemy warheads ... always being present to destroy ballistic missiles launched from anywhere in the world.’’11 By extension, it provides the opportunity to destroy a missile during its boost-phase flight being ‘‘on station on a worldwide basis, unfettered by sovereignty issues of overflight and operations on another nation’s territory.’’12 Hence emerges the need for space control, to the extent that up-to-date efforts to develop an effective global anti-missile shield with earth-based components have met with little success.13 One might raise the question, however: why is there ‘‘a need for space-based weapons, missile defense . . . when the threat is theoretical?’’14 The obvious answer lies in ‘‘the very fact that we have no real defense’’ against ballistic missiles.15 It also lies in the fact that space is a ‘‘hostile place’’ where ‘‘enemy missiles or warheads will spend most of their time.’’16 To this, finally, should be added the fact that it is meaningless to make a distinction between civil and military space systems. It is all the same thing. According to the Director-General of the European Space Agency (ESA), Jacque Dordain, ‘‘the distinction between defense-related and civil space systems makes little sense today,’’ because ‘‘the same satellites, the same systems can be used for both.’’ Space has already been militarized since several manufacturing satellites are utilized for security and defense purposes. The ‘‘weaponization’’ of space goes a lot further than its ‘‘militarization’’ and might be defined ‘‘as the testing or deployment of technologies specifically designed to fight a war in or from space.’’17 On this count, therefore, some scholars argue that the cost of missile defense is one ‘‘that we cannot afford not to bear.’’18 Others voice the view that the experience of Iraq is bound to incite ‘‘a more aggressive approach to making missile defenses work against a more plausible range of missile threats. Anything less would be irresponsible.’’19 The heart of the matter is that building a missile-defense system requires of a great power to militarily control space, a fact that is destined to enable it to attain global hegemony.

**Ground based BMD is inevitable and risky – Space based key to mediation**

Everett C. **Dolman**, Associate Professor of Comparative Military Studies at the US Air Force School of Advanced Air and Space Studies, 20**03**. “Space Power and US Hegemony,” <http://www.gwu.edu/~spi/assets/docs/Security_Space_Volume.Final.pdf>

Without question, from military applications and strategic perspectives, space based BMD systems are superior to terrestrial (ground, sea, or air) based ones. They also have exceptional political advantages. Any BMD system will receive criticism from potential adversaries, as is evident with the routine vocal opposition that comes from Russia and China to any proposed TMD system. Because of criticism and retaliatory threats made by the opposing states, domestic and allied support has been hesitant and unsure. If the state is willing to deploy BMD anyway, by using a space-based system instead of a ground-based one it should be able to gradually regain widespread popular support. One of the advantages of the mobile TMD system, say its advocates, is that it could be dispatched to threatened areas as needed. True enough, but imagine the problems associated with some possible deployments – to Israel, say, or to Taiwan. As much as the United States would insist that the deployment was for defensive purposes only, it would be a clear and possibly inflammatory sign of preference for one side over the other. A space-based system would forever be on alert, and would avoid the political problems of terrestrial basing altogether. The United States would not have to physically deploy to the threatened territory to be able to intercept and destroy hostile missile activity – regardless of the side that launches first. United States impartiality could be asserted and maintained. Retaliations, too, could be controlled. While a United States TMD battery in Israel could conceivably shoot down an incoming ballistic missile from Iraq, what would prevent the Israeli’s from shooting back in anger? The United States would need to deploy the system in both states. Eventually, they would have to be deployed in all states, and any hope of countering the space-based system with a fiscal restraint argument would be lost. Moreover, the human operators of the TMD battery would be at risk. Their capture or casualties in their ranks could force the United State to get directly involved in the conflict. Knowing this, they could be particularly desirable targets for either side. In other instances, the United States might not have the time to deploy a TMD battery to a hostile theater, or may be politically unable to do so. The case of an Indian-Pakistan or an Iraq-Iran exchange comes readily to mind.

**SBMD doesn’t need permission from host countries and spurs countermeasures that make missiles less effective**

**Frederick** Lt Col Lorinda A.**,** MBA, Regis University; Master of Military Operational Art and Science, Air Command and Staff College; Master of Airpower Art and Science, School of Advanced Air and Space Studies, worked space and missile officer assignments and ICBM requirements **’09** (Air and Space Power Journal, “Deterrence and Space-Based Missile Defense”, September 2009, Hopkins)

Many characteristics of SBMD could create uncertainty in the minds of potential adversaries about whether or not they could achieve their aims.48 Space provides access to threats in areas that terrestrial, maritime, and airborne defenses cannot reach. SBMD is capable of destroying ballistic missiles over the enemy’s territory before they release multiple reentry vehicles or countermeasures designed to thwart defenses.The constant forward presence of SBMD could allow the United States to limit its military footprint on foreign soil and support many military operations simultaneously. Land- and sea-based interceptors have to be placed in areas where they can provide credible protection from ballistic missile attacks. Pre-positioning infrastructure, supplies, and equipment may shorten response times when hostilities erupt, but they are costly and difficult to sustain. SBMD allows a nonintrusive forward presence because it does not require the pre-positioning of assets on other territories.Furthermore, employing SBMD is not contingent on approval from another nation. The continued presence of US assets on foreign soil depends on the host nation’s accepting or approving the mission that those assets support. If defenses are not in position, deterrence is reduced. Stationed in the right orbits in the right quantities, SBMD could deter or defend against attacks around-the-clock, especially if used in concert with other sea- and land-based missile defenses. Responding to Countermeasures Potential adversaries may develop countermeasures in response to the US fielding of an SBMD because the latter would make their capabilities ineffective. R&D of countermeasures, which takes time and money, may result in reduced payload and/or range of the missile. These monetary and performance costs may be enough to deter an adversary from attempting countermeasures.One countermeasure against nonkinetic SBMD capabilities—hardened missiles—could have a reduced payload due to the added weight of the hardening material and additional fuel needed to reach the required distances. The adversary could also field more missiles to saturate the missile defense architecture.49 The saturation point depends upon the numbers of both space-based and terrestrially based interceptors deployed. Because decoys and countermeasures are deployed after boost phase, SBMD could lighten the load for midcourse and terminal-phase defenses.The adversary could also shift from ballistic missiles to cruise missiles but would pay a penalty in terms of speed, reach, and destructive potential. These penalties, in combination with existing cruise missile defenses, could make an attack less likely to succeed. Space sensors designed to trigger SBMD could also trigger TMD to intercept cruise missiles. SBMD could increase the effectiveness of the current BMD architecture even if the adversary employs countermeasures. Credible capabilities have the potential to deny an adversary’s objectives and therefore may deter him from employing ballistic missiles altogether. Key political decisions help explain the progress (or lack thereof) made towards exploring and developing the potential of SBMD. The Way Ahead SBMD progressed through various programs, such as GPALS, Brilliant Pebbles, Clementine, and SBL, despite dwindling support from presidential administrations following President Reagan’s. Pres. George W. Bush paved the way for the next administration to put SBMD on the international agenda. According to *The National Security Strategy of the United States of America* (2006), the United States may need new approaches to deter state and nonstate actors and deny them the objectives of their attacks.50 Additionally, the *National Strategy to Combat Weapons of Mass Destruction* (2002) states that “today’s threats are far more diverse and less predictable than those of the past. States hostile to the United States and to our friends and allies have demonstrated their willingness to take high risks to achieve their goals, and are aggressively pursuing WMD and their means of delivery as critical tools in this effort. As a consequence, we require new methods of deterrence.”51 Cooperation on missile defense initiatives could increase global stability. By banding together in coalitions, countries can deter war by repelling an attack against any member.52 States and rogue elements will not be able to strike surreptitiously if they know that the international community could quickly discern the origin of any launch and compute potential impact points. Attempts by a rogue element to destabilize the region through the attribution of attacks to a state may initially promote the rogue elements own agenda. However, data provided by missile defense and other sensors can refute such claims. The shared international ability to identify launch and impact points might deter states and rogue elements from launching in the first place. The more nations cooperate with each other, the more stable the world becomes.Policy makers need to invest in the development of many different capabilities, including SBMD, to negate missiles in their boost phase and use the information gleaned from these developments to inform decisions. One approach involves bringing a system to the prototype stage for testing and accurately gauging its performance. This approach could let the United States invest in only a limited number of prototypes, thus deferring large-scale production to allow further research, development, and testing. These efforts could decrease the risk of failure during production and deployment.53 When the need arises, the United States should capitalize on preexisting prototypes as long as the industrial base could support rapid production.By funding R&D for SBMD, the United States would ensure the viability of these technologies. The DOD cannot expect developments in commercial industry to be available for national security purposes. Competitive pressures force industry to fund near-term R&D programs and choose near-term survival over long-term possibilities.54 Applied research into SBMD technologies would allow the United States to gain more knowledge about boost-phase defenses. America will get as much R&D in SBMD technologies as it is willing to fund. The United States may need to examine the standards it applies to the fielding of other BMD systems and adjust expectations for an initial SBMD capability. Henry Kissinger has commented on the standard of perfection applied to missile defense: The experts had all the technical arguments on their side, but Reagan had got hold of an elemental political truth: in a world of nuclear weapons, leaders who make no effort to protect their peoples against accident, mad opponents, nuclear proliferation, and a whole host of other foreseeable dangers, invite the opprobrium of posterity if disaster ever does occur. That it was not possible at the beginning of a complicated research program to demonstrate SDI’s maximum effectiveness was inherent in the complexity of the problem; no weapon would ever have been developed if it first had had to submit to so perfectionist a criterion.55 Fielding even imperfect elements of the architecture may deter an adversary, as occurred in Desert Storm when imperfect TMD helped keep Israel out of the war.The fact that senior leaders and policy makers tend to focus on current issues because they are more tangible puts the United States at risk of not funding research critical to its future defense. America may need to avoid pressures to sacrifice long-term research for the sake of short-term procurement by moving away from having policy determine the technologies pursued and letting feasible technologies inform policies necessary to deter threats.

**Space-based missile defense key to effectiveness: terrestrial systems fail**

**Independent Working Group**(The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collectivereport/study) “missile defense and the space relationship and the 21st century”2007 http://www.missilethreat.com/repository/doclib/IWGreport.pdf (Pitman)

 Other things being equal, it is preferable to intercept threat­ening ballistic missiles as far away from their intended targets as possible and as early in their flight trajectory as possible. Best of all would be to have the capability to destroy an attacking missile shortly after it is launched, while its rockets still burn and any perturbation will lead to its destruction – with, in many cases, the debris falling back onto the area where the at­tack was launched in the first place. The capability to interdict a missile and its warheads in any phases of their flight (boost, midcourse, and terminal) requires an ability to detect and in­tercept the attack within a very few minutes and to track and destroy the attacking missile and its warheads during their lon­ger midcourse traverse through space before they begin to re­enter the atmosphere so that the debris will burn up on reentry. Finally, the last ditch defense would be to destroy the attack­ing missile as they reenter and pass through the atmosphere in the terminal phase enroute to their target. The best defense capability would be layered so that it could provide opportu­nities for destruction in all three phases of flight. Only space-based defenses inherently have this global capa­bility and permanence. While sea-based defenses can move free­ly through the two-thirds of the earth’s surface that are oceans, their capability is limited by geography and by the specific op­erations of the fleet – including where the sea-based missile de­fense happens to be deployed at any given time, and how quick­ly it could be redeployed to meet a crisis situation. Air-based and ground-based defenses, meanwhile, can have global capa­bilities, but frequently take considerable time to deploy when and where needed and are also dependent on the cooperation of U.S. friends and allies in permitting the necessary support­ing activities on their territories. Thus, only a space-based mis­sile defense will possess both constancy and global availability, irrespective of allied support and agreement. As such, space-based missile defense constitutes the only truly global system, with all the rest being either “regional” or “local.”80 In the case of sea-based systems, namely the *Aegis* program discussed in Section 2, we have a “regional” system capable of boost-phase, midcourse, and terminal intercept de­pending on where and how it is positioned, or vectored. It has a near-global application for *regional* operations, because it is sea-based and can be theoretically deployed over any portion of the earth’s surface covered by water. A land-based system can theoretically be deployed anywhere over about one-third of the world and, depending on how it is vectored, under some limited conditions would be capable of boost-phase, mid­course, and terminal interception. Yet space-based missile defense alone is truly global in reach because of the medium in which it operates, unconstrained by overflight or territori­al restrictions. It also offers inherent interdiction advantag­es described in greater detail below.

**SBMD prevents nuclear, chemical, and biological attacks**

**Hardesty** Captain David C. is is a member of the faculty of theNaval War College’s Strategy and Policy Department **’05** (Naval War College Review, “Space-Based Weapons: Long-Term Strategic Implications and Alternatives”, Spring 2005, Hopkins)

Space-based weapons, like all space systems, are predictable and fragile, but they represent significant combat power if used before they are destroyed— leading to a strong incentive to use these weapons preemptively, to “use them or lose them.” The problem is further complicated by the difficulty in knowing what is occurring in space. As the Commission to Assess United States National Security Space Management and Organization pointed out: Hostile actions against space systems can reasonably be confused with natural phenomena. Space debris or solar activity can “explain” the loss of a space system and mask unfriendly actions or the potential thereof. Such ambiguity and uncertainty could be fatal to the successful management of a crisis or resolution of a conflict. They could lead to forbearance when action is needed or to hasty action when more or better information would have given rise to a broader and more effective set of responsive options. 10 This lag in situational awareness can increase the effectiveness of attacks. That is, striking first is likely to mean inflicting disproportionate losses on the enemy; waiting increases the chances of suffering disproportionate losses oneself. SPACE-BASED WEAPON CONCEPT S : ADVANTAGES , I S SUES , AND REACTION If technical and fiscal challenges are overcome, there is little doubt that an integrated combination of airborne, terrestrial, and space-based lasers with orbiting relay mirrors would be a flexible weapons constellation. Striking at 186,000 miles a second, laser weapons and mirrors help overcome the problems posed by the large distances and high speeds for targeting in and from space. 11 Perhaps they would be most effective at space control, but they would also be useful for boost-phase intercept of ballistic missiles. This is a critical missile-defense function, particularly when dealing with nuclear, chemical, or biological warheads. If not destroyed in boost, nuclear-tipped missiles may deploy decoys, and chemical or biological warfare payloads might be broken into small, separate submunitions or canister reentry vehicles, each of which is a lethal weapon that must be destroyed. 12 In such cases there is a high likelihood that defenses would be overwhelmed. Evolutionary Air and Space Global Laser Engagement (EAGLE) Space-based systems would be logical for this important mission.

**A2 Earth Based – mobility countermeasures**

**Terrestrial missile defense can’t achieve comprehensive defense because of limited mobility and vulnerability to countermeasures**

**Lambakis** Steve is a Senior Analyst and Managing Editor at Comparative Strategy*,* **07** (Hoover Institution, “Missile Defense From Space”, February/March 2007, <http://www.gees.org/documentos/Documen-02177.pdf>, Hopkins)

Over the long term, will the currently configured and planned terrestrial-based missile defense system be sufficient to deal with increasingly sophisticated countermeasures and shifting threats? The answer, I believe, is no. The system being deployed today is fixed firmly to Earth. Whether they are sea-based or land-based weapons, or even the boost-engagement Airborne Laser, we are essentially talking about terrestrial platforms for basing weapons. As we move into the future, there are plans to make those platforms, the sensors and interceptors, more mobile. Why? Because greater mobility can provide greater flexibility for dealing with unpredicted threats. Mobility also allows a commander to concentrate his forces or disperse them as the requirements of the battlefield demand. It matters where we locate sensors and interceptors. It is important to put sensors close to the threat, because they will be in position to provide critical cueing and tracking data early in a ballistic missile’s flight. These data can help enlarge the engagement battle space. To perform boost-phase intercept from the ground or sea, the weapons platforms must be very near the target launch site. These terrestrial boost-phase weapons can defend many targets around the globe by covering a single launch site. The disadvantage of such basing, a disadvantage that is mitigated somewhat with a mobile platform like the Airborne Laser, is that the threat launch site or region must be predicted. Terrestrial-based weapons that engage in space, in the middle or midcourse of a missile’s or warhead’s flight, offer perhaps the greatest flexibility in terms of addressing possible flight azimuths, trajectories, and launch points. While ground-based midcourse interceptors may have to be oriented to large threat regions, they can defend against multiple launch points. Conversely, ground interceptors that are near the target can defend only a small area, but they can potentially protect that point from launches anywhere in the world. Yet it is simply unaffordable to do a point defense for every place you want to defend in the United States, every place that U.S. forces go, or everywhere that our allies are. The ability to do area defense — to defend against multiple launch points as opposed to doing point defense of a very limited area — is fundamental to successful missile defense. Political, strategic, and technological uncertainties could change the missile defense scenario by causing a shift in the threat from one region to another. Given that it takes years to field, test, and make operational new fixed interceptor and sensor sites, a shift in the threat could leave the nation vulnerable. Because many of the interceptors and sensors in the current system are fixed to geographic points, we are limited in our ability to defend the homeland, for example, against missiles launched from surprise locations such as a ship off our shoreline. We also might face an adversary tomorrow that deploys tens or even hundreds of ballistic missiles or one that has more sophisticated countermeasure and reentry technologies. Those, too, would be expected to stress the current system, which is designed at the moment to deal with more limited threats. Planned transportable land-based and mobile sea-based and airborne systems also suffer limitations. The need to base sensors and interceptors forward, closer to threat launch sites, in order to enlarge the engagement battle space makes our security dependent on political decisions by foreign governments. Projected boost defense systems, which may be deployed to the periphery or littoral of an adversary, would have very limited or no utility against a ballistic missile launched from several hundred miles inside a threat country’s border. The inability to engage a missile in boost means we would be left with only midcourse or terminal intercept possibilities, if those are available, and this removes a layer from the effectiveness calculations.

**A2 Sea based – Fails**

**Sea based NMD fails – Radar failures and countermeasures prevent success**

**Lewis and Postol** George N. has a Ph.D. in experimental physics and is associate director of the Peace Studies Program at Cornell University and Theodore A. is professor of science, technology, and national security policy at MIT and a former scientific adviser to the chief of naval operations **’10** (Arms Control Today, “A Flawed and Dangerous U.S. Missile Defense Plan”, May 2010, <http://people.reed.edu/~ahm/Courses/Reed-POL-358-2011-S1_SWP/Syllabus/EReadings/10.2/10.2.LewisPostol2010A-Flawed.pdf>, Hopkins)

If ballistic missile trajectories rise above the curved earth into the line of sight of any low-frequency, low resolution giant U.S. early-warning radar, all of their components, including the warheads, can be tracked. Unlike the much higher-frequency, higher-resolution, shorter-range X-band radars, however, the early warning radars have no ability whatsoever to discern differences in the radar reflections from distant objects. In fact, the ability of the low-frequency early-warning radars to tell one object from another is so poor that they could not distinguish warheads from two-foot-long wires. Tens to hundreds of thousands of such wires can be used to create a massively confusing clutter of decoys and would weigh no more than a pound. The necessarily small size of the radar antennas on Aegis-equipped ships and the low power of these radars typically result in detection and tracking ranges against warheads and missiles that are too short to allow adequate time for SM-3 interceptors to reach their targets. The new defense architecture attempts to address this problem by assuming that ships will launch their interceptors before their Aegis radars actually observe attacking targets. In many actual engagements, ships would likely never see the inherently stealthy warhead targets with their radars. However, if the external tracking radars have provided the ships with sufficiently precise tracking information, such “blind launches” could be used to guide interceptors to the minuscule volumes of space, roughly 10 kilometers on a side, where interceptors might then be able to use their infrared sensors to find and home in on target warheads. If an adversary deployed thousands of wires on slightly different trajectories along with warheads, the early warning radars would not be able to determine which radar signal was from a warhead and which was from a wire. The Aegis ships then would not have the precise tracking information they would need to make a blind launch. This same strategy could also be implemented, with minor adjustments, against the much higher-resolution but inherently shorter-range X-band radars that are also supposed to provide precise tracking data as part of the new architecture and against any airborne infrared sensors carried by UAVs that might, by chance, be in a position to observe the complex of objects launched by missiles. Thus, any of the many simple countermeasures that disrupt the ability to provide precision tracking data to the Aegis ships could make it impossible for the ships to execute a blind launch. The same kind of basic engagement problems also apply to the GMD system.

# A2 Earth Based – DoD proves

**Ground based missile defense fails- Defense Department’s own data proves**

**Lewis and Postol** George N. has a Ph.D. in experimental physics and is associate director of the Peace Studies Program at Cornell University and Theodore A. is professor of science, technology, and national security policy at MIT and a former scientific adviser to the chief of naval operations **’10** (Arms Control Today, “A Flawed and Dangerous U.S. Missile Defense Plan”, May 2010, <http://people.reed.edu/~ahm/Courses/Reed-POL-358-2011-S1_SWP/Syllabus/EReadings/10.2/10.2.LewisPostol2010A-Flawed.pdf>, Hopkins)

. Elaborate communications and command and control systems will link radars on land and sea with space-based infrared early-warning systems, creating a highly flexible integrated global missile defense with components that can be quickly moved and concentrated as circumstances dictate. The report, apparently derived from 10 months of intense technical analysis by the Defense Department, therefore lays out a vision of how the United States intends to construct over the next decade a highly reliable, robust, mobile, and adaptable global missile defense system. According to the report, this system will be able to defeat and deter threats of nuclear and conventional attacks against the United States, its allies, and friends and will be so reliable and robust that adversaries confronted by it will realize that they have no choice but to de-emphasize their reliance on ballistic missiles. However, the Defense Department’s own test data show that, in combat, the vast majority of “successful” SM-3 experiments would have **failed to destroy attacking warheads**. The data also show potential adversaries how to defeat both the SM-3 and the GMD systems, which share the same serious flaws that can be readily exploited by adversaries. The long record of tests of the GMD system, and the most recent test in January of this year, shows that it has only been tested in carefully orchestrated scenarios that have been **designed to hide fundamental flaws and produce appearances of** **success**. The report provides no material facts or allusions to facts that indicate any technical advances that would counter the long record of orchestrated and dumbed-down missile defense tests. The proof of these flaws is in the data that the Defense Department cites as evidence of the robustness of the GMD and SM-3 systems. That should be a strong warning to policymakers who believe that the missile defense systems promoted in the report will actually discourage future adversaries from pursuing ballistic missile programs.

# A2 Earth Based – Space solves better

# SBMD Solvency

**SBMD Solves – it’s the perfect multilayered boost phase interceptor and it has the range**

**Mooney 08** [Kevin Mooney, reporter and author the Washington Times, Washington Examiner, the Daily Caller, The American Spectator, the Capital Research Center he Pelican Institute, a free market think tank based in New Orleans, held editorial positions with Dow Jones and Company and Bloomberg News, <http://www.cnsnews.com/node/36145>]

These additional steps are effective as far as they go -- but, ultimately, there is no substitute for a space-based defensive layer that can target enemy warheads in their most vulnerable, earliest stages, Cooper argued. “A space-interceptor system is actually multi-layered, in and of itself, because it has a global presence and is capable of intercepting a missile in the boost phase, or mid-course phase, or even in the high endo-atmosphere before the re-entry phase,” he said. The boost phase is a “great time” to hit the target because the rocket is still burning, is easy to see, and can be destroyed before any decoys are deployed, Cooper observed. In the absence of a space-based defense, there are two systems with boost phase implications currently in development: the Airborne Laser System and Multiple Kill Vehicles. The Airborne Laser is housed inside a modified 747, where it would target moving missiles. Multiple Kill Vehicles, which are much smaller versions of the current crop of anti-missile interceptors, are capable of launching several kill vehicles at one time. “Neither system gets us where we need to be,” Kueter acknowledged in his talk. Still, he does see value in pursuing both systems as a way of sharpening and honing technology that can be more effectively applied as part of a larger missile-defense architecture over the long term.

**Conventional BMD does not have the same capabilities as Space NMD.**

Matthew **Mowthorpe**, writer for Air and Space Power Journal (Branch of Air Force Research Institute) **02**

Air and Space Power Journal, “The Revolution in Military Affairs and Directed Energy Weapons”, 3/8/02, <http://www.airpower.maxwell.af.mil/airchronicles/cc/mowthorpe02.html> [Marcus)

NOTE: DEW = DIRECT ENERGY WEAPON

DEWs have an advantage over interceptor missiles with high explosive warheads for BMD in that destructive amounts of energy can be transmitted to the target at the speed of light. Consequently, only laser weapons are currently capable of intercepting an intercontinental ballistic missile during the boost phase of its flight. One disadvantage of laser weapons vice conventional interceptors is that the beam must hit the target, which at long range raises serious target acquisition and tracking problems. Whereas, with a conventional warhead a kill could occur if the warhead blast is sufficiently close to the target missile.

**Conventional BMD not needed when there is Space NMD.**

Steven **Lambakis**, Senior Analyst and Managing Editor, *Comparative Strategy,* **07**

Hoover Institution, “Missile Defense From Space”, 3/2007, <http://www.gees.org/documentos/Documen-02177.pdf> [Marcus]

Terrestrial-based weapons that engage in space, in the middle or midcourse of a missile’s or warhead’s flight, offer perhaps the greatest flexibility in terms of addressing possible flight azimuths, trajectories, and launch points. While ground-based midcourse interceptors may have to be oriented to large threat regions, they can defend against multiple launch points. Conversely, ground interceptors that are near the target can defend only a small area, but they can potentially protect that point from launches anywhere in the world. Yet it is simply unaffordable to do a point defense for every place you want to defend in the United States, every place that U.S. forces go, or everywhere that our allies are. The ability to do area defense — to defend against multiple launch points as opposed to doing point defense of a very limited area — is fundamental to successful missile defense.

**Space is the best NMD – Global boost coverage and ASAT capabilities**

**Hays** [ Dr. Peter L. Hays is Associate Director of Eisenhower Center for Space and Defense Studies, USAF Academy. He previously held the position of senior policy analyst supporting the plans and programs division of the National Security Space Office "Toward a U.S. Grand Strategy in Space," Dr. Everett Dolman, Dr. Peter Hays and Dr. Karl P. Mueller, March 10, 20**06**;

Space is Best Basing Mode for Global Boost-Phase Coverage; No Crisis Deployment or Contested Airspace/Littoral • Limited Engagement Window (700-300 sec); Predelegation or Man-inthe-loop? • Even Limited BMD System can have Significant ASAT Capability • Crisis Stability; Expense; Technologies Another path to space weaponization that is commonly discussed is by employing some kind of space weapons as part of a boost-phase ballistic missile defense system. If you want to have a global boost phase defense, space basing is extremely attractive because that gives you the time to engage those targets that are fleeting, but are typically valuable targets. Obviously there are some huge drawbacks as well. It is expensive to deploy that kind of thing; you might have to have predelegation built into the system because of that very fleeting window to engage, and there are a variety of other problems. In fact, if you look back during the 1980s with the SDI debates and the Reykjavik summit, this was really the lynchpin in terms of US-Soviet relations – how far and how fast were the two sides going to go in weaponizing space in order to provide ballistic missile defense – and not some of the things we talked about at the beginning

# \*\*Aff Answers\*\*

# A2 Space Race – SBMD Solves

**Space Advancement solves an arms race – immediate action key**

**Dolman** [ Dr. Everett C. Dolman Professor of Comparative Military Studies at the US Air Force’s School of Advanced Air and Space Studies (SAASS). His focus is on international relations

 "Toward a U.S. Grand Strategy in Space," Dr. Everett Dolman, Dr. Peter Hays and Dr. Karl P. Mueller, March 10, 20**06**;

Nonetheless, we have a different system today and, as Karl has pointed out, it may be that if the United States were to unilaterally militarize space - and I am not advocating that necessarily, but it is an option -that it could in fact prevent an arms race. The trillions of dollars that would have to be spent to dislodge the United States from space, if it were to quickly seize control of the low-earth orbit, might be seen as not worthwhile to another state. However, if we wait fifteen or twenty years until a state is able to challenge the United States in space, then we will have a space race. By putting weapons in space to enhance its military capabilities the United States today is saying to the world that in this period of American hegemony, it is not going to wait for problems to develop overseas until they bubble over into its area of interest, and then massively and forcefully fix that problem. No. The American way of war today, based on precision and on space capabilities, is to engage early using less force, using more precise force and more deadly force in a specific area, but with far less collateral damage. That is the new American way of war and we really cannot get out of it.

**Building weapons in space prevents arms races and space wars.**

Everett **Dolman**, Associate Professor of Comparative Military Studies at the U.S. Air Force's School of Advanced Air and Space Studies **06**

SAIS Review, “U.S. Military Transformation and Weapons in Space”, 2006, SAIS Review 26.1 (2006) 163-175[Marcus]

Seizing the initiative and securing low-Earth orbit now, while the United States is unchallenged in space, would do much to stabilize the international system and prevent an arms race in space. The enhanced ability to deny any attempt by another nation to place military assets in space and to readily engage and destroy terrestrial anti-satellite capacity would make the possibility of large-scale space war or military space races less likely, not more. Why would a state expend the effort to compete in space with a superpower that has the extraordinary advantage of holding securely the highest ground at the top of the gravity well? So long as the controlling state demonstrates a capacity and a will to use force to defend its position, in effect expending a small amount of violence as needed to prevent a greater conflagration in the future, the likelihood of a future war in space is remote. Moreover, if the United States were willing to deploy and use a military space force that maintained effective control of space, and did so in a way that was perceived as tough, non-arbitrary, and efficient, such an action [End Page 171] would serve to discourage competing states from fielding opposing systems. Should the United States use its advantage to police the heavens and allow unhindered peaceful use of space by any and all nations for economic and scientific development, over time its control of low-Earth orbit could be viewed as a global asset and a public good. In much the same way the British maintained control of the high seas, enforcing international norms of innocent passage and property rights, the United States could prepare outer space for a long-overdue burst of economic expansion.

# A2 Space Race – Inev Dominance Key

**The space race is here – we’ve already weaponized the challenge now is maintaining dominance**

**Clark** [ Dereck A. The Great Leap Upward: Implications of China's Rise as the Third Player in the Fourth Battlefield for U.S. Security approved by a committee of Dr. S. Michael Pavelec

CAPT Carl Otis Schuster, USN RET. Sept. 18 20**09** a masters paper presented at Hawaii Pacific university]

lt is imperative to understand that the U.S. and China, as a result of their current military space capabilities, have already entered into a world of no retum. Space has already become militarized and these developments cannot be un-invented. Since the U.S. relies so heavily upon its satellite systems and other space assets for its military operations (as well as civilian/commercial livelihood), asking the U.S. to simply give up these capabilities is both illogical (on China's part) and unwise from many stand points (economically, militarily, security-wise, etc) As such, the question that begs to be addressed is how to best limit rising U.S vulnerabilities in space in the context of Chinese competition?

**Development key – the race is here the question is will the US compete or fall behind**

**Clark** [ Dereck A. The Great Leap Upward: Implications of China's Rise as the Third Player in the Fourth Battlefield for U.S. Security approved by a committee of Dr. S. Michael Pavelec

CAPT Carl Otis Schuster, USN RET. Sept. 18 20**09** a masters paper presented at Hawaii Pacific university]

Until the Chinese remove the shroud of secrecy that surround their space programs and their overall intentions in space to a level of transparency deemed adequate by Washington, the U.S. is forced to continually plan for worst-case scenarios and shape their space policy that reflects this reality. While the current U.S. space policy requires much improvement in terms of content (it lacks any real discussion of deterrence) and overall posture (it comes off as threatening), it is reflective of a strategic logic that Chinese decisions and actions regarding space have helped create. ln any case, China's proven ASAT capability and their actionable asserted intentions highlight the need for a long-tenn and fundamental change in the way the U.S. approaches space. ln acknowledging that the U.S. no longer enjoys a monopoly of power in space and that this domain will never be the peaceful sanctuary that space arms control advocates desire, the U.S. must diversify how it gamers and distributes space infomation and seek more effective ways to limit U.S. space vulnerabilities. A shift towards smaller, more mobile, and flexible distributed capabilities, increased redundancy of satellites with a rapid-launch capacity, and a layered suite of integrated defensive techniques into fielded space assets would reduce incentives for adversarial attacks on U.S. space systems and their ability to target those systems. Investments such as these would potentially offer the most benefit to the U.S., even when compared to offensive capabilities which China perceives as inherently threatening.

# A2 Space Race – No Race/Prolif

**China and Russia don’t want to be involved in an arms race.**

Peter **Brookes**, Senior Fellow, National Security Affairs and Chung Ju-Yung Fellow for Policy Studies Douglas and Sarah Allison Center for Foreign Policy Studies, **08**

Heritage Foundation, “Marking the boundaries of weapon use in space”, 6/25/08, <http://www.heritage.org/Research/Commentary/2008/07/Marking-the-boundaries-of-weapon-use-in-space> [Marcus]

China and Russia are seeking to update the 1967 Outer Space Treaty, which, in its new form, would serve to hinder the US's space capabilities and ambitions. This February, China and Russia introduced a draft treaty entitled the 'Prevention of Placement of Weapons in Outer Space' at the 65-member UN Conference on Disarmament in Geneva. The two countries reiterated their support for the new accord in late May during a summit in Beijing, saying: "The sides are in favour of the peaceful use of space, but are against the deployment of weapons in space or a space arms race."

**Missile Defense does not cause arms race or proliferation**

**Independent Working Group**(The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collectivereport/study) “missile defense and the space relationship and the 21st century”2007 http://www.missilethreat.com/repository/doclib/IWGreport.pdf (Pitman)

Nowhere is the rationale and justification for the MAD cul­ture of hostage holding stronger than in the declaration that missile defense is provocative and destabilizing. American missile defense will cause an arms race; will cause nuclear proliferation in such places as North Korea and Iran; will threaten the military “integrity” of China and Rus­sia and, thereby, challenge their places in the world, and will, as a consequence, be destabilizing to world peace. America must not be allowed to acquire missile defense. The flaw in these views is that they have little or no basis in fact. They are, instead, based on philosophy, emotion, and, for some, political advantage, where fact, itself, is irrelevant. The fact that there is no real basis in fact is obvious and to deny this is clear evidence of the dogmatic nature of missile defense opponents who use these arguments. To begin with, arms races stem from competition for of­fensive weapons and while it is true that some of these are de­signed in part to overcome someone’s defenses, the converse that no defenses breed no offensive weapons is without histor­ical basis. Indeed, this proposition is supported by irrefutable evidence that the United States never has had missile defens­es for its population, much less its military installations (save for selective use of limited “point” defense, such as the Patri­ot). But that reality has not prevented either nuclear prolifer­ation or nuclear arms buildups; it has in all probability been the reverse. The evidence also is clear that the past forty years, most especially the last decade, have seen relentless buildups and bold moves to spread the use of nuclear and other weapons of mass destruction, as witness evolving events in Russia, China, North Korea, and Iran (discussed elsewhere in this report). One of the few times there has been a significant slowing of momentum was in the brief period 1985-1993, which was the height of missile defense development in the United States.

**No evidence that missile defense is destabilizing**

**Independent Working Group**(The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collectivereport/study) “missile defense and the space relationship and the 21st century”2007 http://www.missilethreat.com/repository/doclib/IWGreport.pdf (Pitman)

At this point, the sliver of fact dissolves into missile defense objections that are based on philosophical, ideological or po­litical beliefs and resulting emotions, where factual evidence is largely irrelevant. There is no known evidence even to sug­gest that an arms race or instability occurs simply because a nonbelligerent nation chooses to erect defenses against of­fensive weapons. This question was debated hotly in the 1930s, when British pacifists and appeasers objected violently to the idea of build­ing the *Spitfire* and fielding antiaircraft weapons against the growing armada of Hitler’s bombers and fighters. But as delay was heaped upon delay and as Hitler’s air and land forces grew and grew and started their assault on their European neigh­bors, it finally dawned on the Brits that with or without the *Spitfire* and antiaircraft weapons, Hitler was out to get them. So Britain hustled – and barely survived. There is a clear lesson here. A would-be aggressor state will object to another nation wanting to defend itself for nonbel­ligerent reasons mainly because it could impede whatever de­signs the aggressor may have regarding the other nation. Those nations who wish America no harm will not object to its mis­sile defenses. Those nations and their sympathizers who would like to marginalize the United States will, indeed, object. Clearly, it is not factual evidence but philosophical and ide­ological beliefs, coupled with political agendas, that are used to support the declaration that missile defense is provocative and destabilizing. It is the apex of pacifist thought, in that it seeks to pacify Americans against the idea of defending themselves from mis­sile attacks. It is a declaratory mantra that – even after fifty years – still plays heavily upon the continuing effects of the two post-WWII American complexes: the still-lingering un­ease about using “the bomb” and the still-growing dislike of being disliked, which combine to create a chronic oversensi­tivity about how Americans think of themselves as good-ver­sus-bad actors for “the better good of mankind.”

# A2 Space provokes

**Rational use of US space technology doesn’t provoke other nations.**

Everett **Dolman**, Associate Professor of Comparative Military Studies at the U.S. Air Force's School of Advanced Air and Space Studies **06**

SAIS Review, “U.S. Military Transformation and Weapons in Space”, 2006, SAIS Review 26.1 (2006) 163-175[Marcus]

This reasoning does not dispute the fact that U.S. deployment of weapons in outer space would represent the addition of a potent new military capacity, one that would assist in extending the current period of American hegemony well into the future. Clearly this would be threatening, and America must expect severe condemnation and increased competition in peripheral areas. But such an outcome is less threatening than any other state doing so. Placement of weapons in space by the United States would be perceived correctly as an attempt at continuing American hegemony. Although [End Page 169] there is obvious opposition to the current international balance of power, the majority of states seem to regard it as at least tolerable. A continuation of the status quo is thus minimally acceptable, even to states working toward its demise. As long as the United States does not employ its power arbitrarily, the situation would be bearable initially and grudgingly accepted over time.

# A2 Coop DA

Space BMD causes global cooperation and deters conflict, rather than inciting it

Dr. Steven **Lambakis**, Senior Defense Analyst at the National Institute for Public Policy, 20**07**. “Missile Defense from Space,” <http://www.gees.org/documentos/Documen-02177.pdf>

The policy benefits of a space-based missile defense layer are straightforward. A more effective missile defense system that fully leverages space would provide a true on-call global defensive capability, and this could lead to increased stability in the world. Defenses deter attacks by reducing confidence in the success of any attack. The more effective the missile defense system is, the greater will be its deterrence value, and the less likely will we be to have to use it at all. At some point, when the system is seen by other governments as highly effective, they could recognize a diminishing marginal rate of return in their own ballistic missile investments. As more allies invest in missile defense, U.S. space-basing activities could build on current missile defense cooperative activities and open up new avenues for international collaboration, both to develop elements of the space-based layer and to participate in operations.

**Unilateral SBMD development key to effective power and doesn’t lead to arms races**

**Frederick Lt Col Lorinda A.,** MBA, Regis University; Master of Military Operational Art and Science, Air Command and Staff College; Master of Airpower Art and Science, School of Advanced Air and Space Studies, worked space and missile officer assignments and ICBM requirements **’08** (Graduate thesis, “DETERRENCE AND SPACE-BASED MISSILE DEFENSE”, June 2008, Hopkins)

A realist moral philosophy holds pursuit of the national interest as an ideal guide to the formulation of state policy, especially in a dangerous international system.3 Dangers abound internationally due to political uncertainties in states and rogue elements. World politics may be characterized by a “state of war,” not a single continuous war or constant wars, but the constant possibility of war among all states.4 Viewing the unilateral pursuit of SBMD through the lens of complex realism, reveals areas the United States may emphasize. Unilateral pursuit of SBMD strengthens United States’ ability to protect itself without international constraints on how the US projects power and maintains freedom of action. The ability to project power lets sovereign nations defend their interests without relying on other states. SBMD could enable a global on-call missile defense capability and a timely response to rapidly evolving threats.5 The United States has the freedom to launch SBMD assets into orbits favorable for deterring or responding to threats from hostile states. After unilaterally deploying such capabilities, the United States would be free to launch its space-based interceptors when it felt the need to project power. Landbased defenses located on foreign soil, by contrast, might have to request permission from the host nation before launching their interceptors. SBMD could therefore enhance both power projection and freedom of action. SBMD can also help the United States reduce its dependence on other states further. Augmenting the current BMD architecture with SBMD could let the nation redeploy land, sea, and air assets and reduce its dependency on overseas bases. Foreign public opinion may not support other forms of missile defense technology on their sovereign territory.6 Political ties between the United States and other countries may be strained if there is public controversy over proposals to field land-based missile defense. Foreign populations who view interdependence as a potential vulnerability may find it unsettling to depend on the United States for their defense. SBMD could insulate the United States from the oscillating currents of foreign public opinion. Although some worry that a unilateral US approach to SBMD could start a new arms race or increase tension, the lens of complex realism questions the inevitability of these outcomes. Realism typically focuses on relative power and not absolute power, and SBMD do not have to upset the balance of relative power.7 New arms races would happen if nations, such as Russia and China, perceive their ability to wage war is being threatened by US pursuit of SBMD. If SBMD are properly designed and deployed, they should not decrease the deterrent effect of the Russian and Chinese ballistic missile arsenals. The United States is not interested in renewing or starting arms races with any country. Although the unilateral pursuit of SBMD could produce such adverse effects, the United States, aware of such possibilities, could strive to avoid them. A nation’s desire for freedom of action may steer it away from treaties. The United States withdrew from the ABM Treaty because it restricted how the United States could defend itself from ballistic missile attack. A unilateral approach would shun participation in treaties restricting the United States’ deployment of SBMD. Treaties are valuable as long as all of the signatories abide by the terms and conditions. If the treaty is signed under duress or is inequitable, then the treaty may fall apart. Treaties may also be used instead of other more appropriate instruments of power.8 The United States could avoid restrictive treaties if it wants to preserve its freedom of action. According to a realist perspective, international pressure should not restrict the options available to the United States in pursuing SBMD. This approach would steer away from considering the views of organizations such as the United Nations, European Union, and the North Atlantic Treaty Organization until those views disrupt some other issue on which the United States really wants or needs their cooperation. Unilateral approaches to other forms of BMD are less viable because international actors frequently restrict these US options. Russia already opposes US plans to base missile defenses in the Czech Republic and Poland to protect other countries against ballistic missiles launched by rogue elements, such as Iran. International pressures are less likely to restrict the unilateral pursuit of SBMD than its land-based counterparts. A complex realism argument asserts that failing to accept the national interest may be “a prescription for national disaster, an increase in global violence, and an irresponsible act of statesmanship that places private interests or ideals above public needs.”9 Thus, because strategic choices take priority over moral choices, the United States could pursue SBMD regardless of what the international community thinks.10 The United States could prepare itself to develop SBMD unilaterally, if necessary.

**Us is Not cooperating now on space weaponization**

**Blazejewski,** “private practice in New York City, focusing primarily on international corporate and financial transactions. He received his master’s degree in public affairs from the Woodrow Wilson School at Princeton University and his JD degree from the New York University School of Law.”, **8** [Kenneth S. Blazejewski, Strategic Studies Quarterly, Spring 2008; http://www.au.af.mil/au/ssq/2008/Spring/blazejewski.pdf; Pitman]

The US refusal to engage in discussions on the weaponization of outer space imposes two significant costs. First, it increases Chinese uncertainty and suspicion, leading China to assume its worst-case scenario about US space weaponization. Second, it prevents the international community from developing new rules and norms in areas such as advancing situational awareness, coordinating launches, and deterring the further development and proliferation of ASAT weapons that could benefit US space assets. There is broad consensus that the United States can no longer afford to remain silent in the international debate on the weaponization of outer space. The Rumsfeld Commission, the US-China Commission,51 and many spacearmscontrol advocates all recommend greater US participation in setting rules for the use of outer space beyond the existing legal framework For years China has pressured the United States to negotiate a new international agreement on space and space weaponization. If the United States now accepts this invitation, it may find that it has substantial leverage in. determining the parameters of the discussion. The United States should use this leverage to assure that the final agreement reflects its interests in space. One issue for the United States to consider is whether the CD is the best forum to negotiate rules on space. Admittedly, most member states recognize the CD as “the single multilateral disarmament negotiating forum” and as such the appropriate forum for the discussion of space weaponization. But agreeing to PAROS discussions at the CD may place the United States in a defensive position. For years, China and other states have used the CD as a forum to lambaste the US position on space weaponization. At the CD, the United States risks appearing like a reluctant defendant facing a hung jury. More importantly, the current formulation of the discussion at the CD as “prevention of an arms race in outer space”—such as through the advancement of a limited BMD system—may subtly shape discussions against US interests. Preventing an arms race does not fully encompass the interests at stake in space. International discussions on space should consider not only preventing destabilizing actions in space but encouraging stabilizing actions in space as well. Moreover, a new agreement on space might address a wider array of issues than just the “space arms race,” including civilian space use and space debris.

**Missile Defense Helps Relations**

**FAS** (The Federation of American Scientists, an independent, nonpartisan think tank and membership organization, is dedicated to providing rigorous, objective, evidence-based analysis and practical policy recommendations on national and international security issues connected to applied science and technology. Moreover, FAS is committed to educating policymakers, the public, the news media, and the next generation of scientists, engineers, and global leaders about the urgent need for creating a more secure and better science-educated world.) **10** “ Space Based Laser [SBL]” 2010. <http://www.fas.org/spp/starwars/program/sbl.htm>

The potential to intercept and destroy a missile over enemy territory soon after launch, rather than over friendly territory, makes the development of a boost phase intercept (BPI) capability very desirable. In concert with ground based theater missile defense (TMD) systems already under development, the U.S. continues to investigate BPI concepts for BMD systems. The SBL program could develop the technology to provide the U.S. with an advanced BMD system for both theater and national missile defense. BMDO believes that an SBL system has the potential to make other contributions to U.S. security and world security as a whole, such as inducing potential aggressors to abandon ballistic missile programs by rendering them useless. Failing that, BMDO believes that the creation of such a universal defense system would provide the impetus for other nations to expand their security agreements with the United States, bringing them under a U. S. sponsored missile defense umbrella.

**Can’t predict how other countries would react to space weapons, and advantages outweigh anyway.**

Steven **Lambakis**, Senior Analyst and Managing Editor, *Comparative Strategy,* **07**

Hoover Institution, “Missile Defense From Space”, 3/2007, <http://www.gees.org/documentos/Documen-02177.pdf> [Marcus]

But the country lacks a unified, coherent approach to expanding the use of space to improve combat effectiveness, a problem that is compounded by a politically charged debate over weapons in space.1 Critics contend that weapons in space would destabilize existing security relationships, precipitate an arms race, undermine U.S. foreign policy, and seed anti-American coalitions. Not only are such criticisms based on questionable assumptions,2 but they also have not persuaded the country to forgo the advantages of space weapons. The most one could say at this stage is that the American people are indifferent, noncommittal, and confused.

**NMD can be built to not be threatening to Russia.**

Charles **Glaser and** Steve **Fetter,** Professor in the Irving B. Harris Graduate School of Public Policy Studies at the University of Chicago and Professor in the School of Public Affairs at the University of Maryland, **01**

International Security, “National Missile Defense and the Future of U.S. Nuclear Weapons Policy”, Summer, 2001, Vol. 26, No. 1, P. 40-92 [Marcus]

A U.S. NMD system capable of defending against a small missile force need not pose a threat to a large missile force. As noted above, some types of limited NMD systems, such as a surface-based boost-phase system, could be highly effective against rogue states and yet have no capability against Russia or China. But even if the defense is able to intercept Russian missiles, as long as the number of U.S. defense interceptors is much smaller than the number of survivable warheads deployed by Russia, Moscow can be confident in its ability to overwhelm the NMD.47 Therefore, in a world in which rogues have on the order of ten missiles and Russia has 1,000 or more warheads, there are at least in theory defenses that would be highly effective against the small rogue forces and entirely ineffective against the large Russian force. Consequently, U.S. deployment of limited NMD need not threaten Russia’s ability to preserve a large retaliatory nuclear deterrent,48 or China’s ability to establish and maintain such a deterrent.

**Space is the best NMD – Global boost coverage and ASAT capabilities**

**Hays** [ Dr. Peter L. Hays is Associate Director of Eisenhower Center for Space and Defense Studies, USAF Academy. He previously held the position of senior policy analyst supporting the plans and programs division of the National Security Space Office "Toward a U.S. Grand Strategy in Space," Dr. Everett Dolman, Dr. Peter Hays and Dr. Karl P. Mueller, March 10, 20**06**;

Space is Best Basing Mode for Global Boost-Phase Coverage; No Crisis Deployment or Contested Airspace/Littoral • Limited Engagement Window (700-300 sec); Predelegation or Man-inthe-loop? • Even Limited BMD System can have Significant ASAT Capability • Crisis Stability; Expense; Technologies Another path to space weaponization that is commonly discussed is by employing some kind of space weapons as part of a boost-phase ballistic missile defense system. If you want to have a global boost phase defense, space basing is extremely attractive because that gives you the time to engage those targets that are fleeting, but are typically valuable targets. Obviously there are some huge drawbacks as well. It is expensive to deploy that kind of thing; you might have to have predelegation built into the system because of that very fleeting window to engage, and there are a variety of other problems. In fact, if you look back during the 1980s with the SDI debates and the Reykjavik summit, this was really the lynchpin in terms of US-Soviet relations – how far and how fast were the two sides going to go in weaponizing space in order to provide ballistic missile defense – and not some of the things we talked about at the beginning

# No Backlash

**International perception of US space weapons would not be hostile.**

Everett **Dolman**, Associate Professor of Comparative Military Studies at the U.S. Air Force's School of Advanced Air and Space Studies **06**

SAIS Review, “U.S. Military Transformation and Weapons in Space”, 2006, SAIS Review 26.1 (2006) 163-175[Marcus]

Moreover, if the United States were willing to deploy and use a military space force that maintained effective control of space, and did so in a way that was perceived as tough, non-arbitrary, and efficient, such an action [End Page 171] would serve to discourage competing states from fielding opposing systems. Should the United States use its advantage to police the heavens and allow unhindered peaceful use of space by any and all nations for economic and scientific development, over time its control of low-Earth orbit could be viewed as a global asset and a public good. In much the same way the British maintained control of the high seas, enforcing international norms of innocent passage and property rights, the United States could prepare outer space for a long-overdue burst of economic expansion.

**No backlash to space NMD – only will be used against rogue nations.**

Jacques **Gansler,** Former Under Secretary of Defense for Acquisition, Technology and Logistics, **10**

CENTER FOR TECHNOLOGY AND NATIONAL SECURITY POLICY NATIONAL DEFENSE UNIVERSITY WASHINGTON, DC, “ Ballistic Missile Defense Past and Future, 4/10, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA527876&Location=U2&doc=GetTRDoc.pdf> [Marcus]

The area that will require the most attention in the coming years is assuring the cooperation of Russia and China (probably in that order) for a new ABM Treaty that will allow the United States and its allies to deploy missile defense systems geared to defend against rogue nations and unintentional launches. However, the United States must be careful to stress that this increased defense would be no threat to either Russia or China, in terms of their strategic deterrent postures. It is essential that they recognize that the U.S. system is not intended for use against them. In fact, it will be necessary to show how it cannot become a threat to them—even with growth and enhancements in the future— through treaty constraints and verification techniques. Perhaps the best approach here is through joint programs (e.g. sharing of missile warning centers, sharing of radar tracking sites, etc.). This will, of course, require changes in U.S. technology export controls (ITAR, EAR, etc.).5 The increasing globalization of industry, technology, and particularly security, is increasingly making such changes mandatory, in any case.

# A2 Spending

**Fully funded space NMD would cover less than 2% of the defense budget.**

Charles **Glaser and** Steve **Fetter,** Professor in the Irving B. Harris Graduate School of Public Policy Studies at the University of Chicago and Professor in the School of Public Affairs at the University of Maryland, **01**

International Security, “National Missile Defense and the Future of U.S. Nuclear Weapons Policy”, Summer, 2001, Vol. 26, No. 1, P. 40-92 [Marcus]

At the same time, if NMD could be made effective against rogue threats and if the political costs with Russia and China could be minimized, then the case against limited NMD becomes less clear-cut. Although rogue states would most likely be deterred from attacking the United States with long-range ballistic missiles, this is not certain. At $60 billion,7 limited NMD is expensive but would amount to less than 2 percent of the defense budget and 10 percent of the procurement budget during the years it was being deployed, which is not out of line with other procurement programs that can be described as insurance against unlikely dangers. Thus the United States should explore whether there are policies that would significantly reduce the international political costs of NMD and begin laying the groundwork for pursuing them, in case an effective NMD system becomes feasible.8

**Space NMD is economically feasible.**

Jacques **Gansler,** Former Under Secretary of Defense for Acquisition, Technology and Logistics, **10**

CENTER FOR TECHNOLOGY AND NATIONAL SECURITY POLICY NATIONAL DEFENSE UNIVERSITY WASHINGTON, DC, “ Ballistic Missile Defense Past and Future, 4/10, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA527876&Location=U2&doc=GetTRDoc.pdf> [Marcus]

Naturally, the cost of any missile defense system will vary widely as a function of the type of system and its complexity. Therefore, the early ground-based, terminal-phase systems (with their limited range intercept systems) would require a very large number of interceptor locations around the country, in order to defend the cities and critical sites at which they were located. In 1966, Defense Secretary McNamara estimated a cost of about $15 billion for enough firepower to defend a significant part of the country (over $100 billion in today’s dollars).1 Later that year, he said that a “limited” system, aimed at protecting some cities against a few unsophisticated Chinese missiles, would be very effective and only cost $8 to $11 billion (around $50 billion in today’s dollars).2 The limited NMD system that was developed during the Clinton Administration began at a level of around $4 billion a year, and was accelerated by the George W. Bush administration. It was estimated to have an initial deployment cost of under $20 billion for the single site in Alaska, plus an added $10 to $15 billion for upgrading.3 The General Accounting Office (GAO) estimated the cost for deployment and 20 years of operation of the limited NMD system (including the spacebased infrared warning and tracking systems and 100 ground-based interceptors) would be about $60 billion. Finally, a 1988 estimate for a space-based system done by the independent Cost Analysis Group of the Pentagon put a laser-based defense system’s total deployment at around $115 billion. It also stated that if the program were structured to eliminate the lasers and have a more limited deployment on a spacebased system (such as using kinetic interceptors), it would cost around $55 billion (both estimates in 1988 dollars). What is important about all of these numbers is that they are very large. However, if this is a high-priority program, they are affordable within an annual defense budget that is well over $500 billion a year (recognizing that the large estimates for the full deployment and support of any of the systems are divided over a significant number of years). For example, the GAO cost estimate of $60 billion over 20 years is $3 billion per year—or (on average) less than 1 percent of the annual DOD budget (even after adjusting for inflation). The early-year costs would, of course, be higher, and thus compete with other highcost priorities.

**Modern Day Cost Figures are Flawed must look to past Programs**

**Independent Working Group**(The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collectivereport/study) “missile defense and the space relationship and the 21st century”2007 http://www.missilethreat.com/repository/doclib/IWGreport.pdf (Pitman)

Much of the work of the Independent Working Group (IWG) has focused on systems, technologies and cost factors that clearly make the case that the American people can have cost-effective global protection systems against limited missile strikes; moreover, systems that can also protect the citizens of our allies and other friendly countries, and even the people of nations unfriendly to us (if they would so choose). Yet, the mantra of the MAD culture still exists, in that significant elements of this technology (and the economic efficiencies it can provide) still are not being used that could be used – such as nano and other lightweight technologies – so that even those critics who are looking more at performance rather than politics at times have well-founded concerns that deserve to be vetted and answered. How does this occur? It has to do with how knowledge is used and the political and cultural climate that governs how well that knowledge is used. For example, a July 2004 Congressional Budget Office (CBO) report, called “Alternatives for Boost-Phase Missile Defense,” estimates that costs could reach upwards of $78-billion for the most effective option (out of five options studied) for a twenty-year space-based operating system – very expensive because of the weight of the components assumed in the study, i.e., the heavier the kill vehicle (KV), the bigger the booster required to deliver the KV into space and the greater the cost. This compares with $16.3 billion (in 2005 dollars) for a Global Protection Against Limited Strikes (GPALS) system discussed extensively in Section 4. The 50-page CBO report, which drew heavily on a 400-page 2003 boost-phase study by the American Physical Society (APS), doubtless is essentially correct in its $78-billion cost projections in terms of the technology it looked at. And therein lies the rub: the design assumptions used in both the CBO and APS calculations include heavier components than those used in the GPALS system, which was technologically feasible over a decade ago. When combined with the rocket equation and the fundamentals of orbital mechanics, the use of available lightweight technologies – including significant progress in miniaturization during the past decade – should reduce the CBO/APS cost estimates by over 80 percent to a figure consistent with the 1990 GPALS estimate.

# \*\*Add-Ons\*\*

# Exploration/Disease Add-on

**Missile Defense Tech Leads to Spin Off tech leading to space exploration**

**Canavan** “Gregory Canavan works in the Physics Division Office of the Los Alamos National Laboratory.  In January 2000 he was elected an APS Fellow through the Forum on Physics and Society for his contributions leading to the improvement of military science and technology”**01 [**Space-Based Missile Defense: Has Its Time Come?] 2001; <http://www.marshall.org/pdf/materials/56.pdf> (Pitman)

Brilliant Pebbles, however, was reduced in the 1991 authorization bill to a “robust technology program” and then was abolished altogether in 1993, freezing the technology at about that point. Yet a nucleus of the technology and capability was resident in the National Laboratories and industry, and with them, the SDI program was able to execute the Clementine experiment in 1994. The Clementine experiment used a collection of SDI sensors to re-map the surface of the moon at the highest accuracy ever seen. In the process of the experiment, ice was discovered at the southern pole of the moon, which has always been the great hope of people who want to use ice as a fuel for further exploration of the solar system. The Clementine experiment was very well and efficiently executed. (For more, see the special issue of *Science Magazine*, Volume 266, No. 5192, December 1994.) There is sometimes a little confusion about Clementine because there were actually two experiments. On the way back from moon mapping, while in translunar orbit, the satellite was reprogrammed to perform a second phase of the experiment, to rendezvous with an asteroid. A mistake in the software left it unable to do its rendezvous. A second Clementine was designed to complete the asteroid research. I had to design the science package for that, and it would have been a very nice experiment, but it was cancelled before launch because it looked too much like a space-based interceptor.

**Missile defense increase space exploration technology Empirical proof**

**Pinkerton** (Fellow at the new American foundation) **01”** Missile Defense Spinoffs from Outer Space

**“**July 16 2001” http://www.newamerica.net/node/6152(Pitman)

Most Americans know the concept of space "spinoffs," but the press lost interest in the '60s, the era of Teflon and Tang. Yet the whirl of spinoffs has never ceased; recently, Scientific American filled up a whole book, *Inventions from Outer Space,* with more recent examples, including portable X-ray machines, micro-pump technology, ceramic dentistry, and more efficient solar power. And, of course, there's the unsung hero of the Information Age, the communications satellite. Jastrow, an astronomer who has been a leading figure in missile defense matters for decades, offered three more examples of the value that NMD has spun off onto his own academic discipline. First, piezoelectrics. Piezoelectric substances, typically crystals and quartzes, can be mechanically deformed by the application of electricity. Telescope lenses, for example, can be made infinitely malleable; piezoelectricity enables computers to manipulate lenses to compensate for refractions in the atmosphere, allowing an ultra-clear picture. This acuity was a critical objective for strategic defensers as they struggled to find ways to identify incoming objects, such as missiles; the U.S. government, Jastrow said, spent about $500 million on this effort. But the costly fruits of those efforts have been declassified now, and the spinoff has given new life to terrestrial telescopes, which were once thought to be on their way to obsolescence because of increased interference in the atmosphere. Jastrow, whose Mt. Wilson Observatory is in the thick of Los Angeles "light smog," said proudly, "Mt. Wilson now produces images that are as sharp as the Hubble Space Telescope." Second, adaptive optics. The idea here, Jastrow explained, is to use light as a tool to help see light. Does that sound counterintuitive? So are many things in science. But as DDPers like to say, the glory of the scientific method is that it is based on objectivity, not subjectivity. Objectivity offers even crackpots, or seeming crackpots, a chance to prove that their wild theory is, in fact, true. And in the case of adaptive optics (AO), the vindicated visionary was Laird Thompson of the University of Illinois. AOers started out using the light from a single bright natural star as a benchmark, to correct for atmospheric perturbations. Once again, strategic defensers jumped on the idea as yet another way to identify incomings. Now Thompson and others, riding on the cushion of intellectual capital that Uncle Sam helped pay for, are going further, using lasers as the benchmarking light source, so as to see even further into deep space. Third, the inferometer. This is yet another astronomical technology juiced by missile money, Jastrow told his listeners. It allows scientists to get a better look at a single astronomical object through multiple telescopes, all computer calibrated for maximum resolution. Astronomers at Georgia State University, for instance, are using six telescopes spread out over a mile to get the space equivalent of a Kodak moment. Inferometers could help unravel one of the great mysteries of the universe, the formation of planets. Astronomers are looking, for example, at 3 Juno, a 200-mile-wide asteroid not far from Earth, whose name derives from its status as the third asteroid ever discovered, by the astronomer Karl Harding, back in 1804. Today's astronomers believe that planets came into being in part because they are the cumulative product of various inter-stellar collisions; they wonder whether 3 Juno is such a planet-in-progress. The inferometer is helping test this hypothesis.

**Space exploration allows us to cure diseases**

**ABC News 07** [“Space travel makes bacteria more deadly: study,” http://www.abc.net.au/news/stories/2007/09/25/2042694.htm]

Cheryl Nickerson is an associate professor at the Centre for Infectious Diseases and Vaccinology at Arizona State University, and lead author of the study. "We know that reports suggest that there are aspects of the astronauts' immune systems that don't function quite as well in flight as they do on the ground, and so that suggested increased risk for infectious disease events," she said. "In particular, when we start looking at these future missions ... as we continue to push the frontiers and explore our universe, we're going to be extending both our duration, in terms of our length of time, that we send humans into space, and also they're going to be much further out in space and much further away from Earth than they have been. "As we start to make those kinds of changes in space flight, there comes with that an increased risk of infectious disease." Clinical use Prof Nickerson says that deepening understanding of how the bacteria react in certain situations could also have applications in the treatment of infectious diseases on Earth. "Using this new insight that we're gaining from culturing these bacteria - under ways that they normally encounter in the body, but we haven't paid a lot of attention to before - opens up the possibility that we can identify new targets that have a real potential to be translated to a clinical application, perhaps as a new drug or therapeutic or vaccine to treat the infections, whether it's for astronauts or for space tourists, or for us here on Earth," she said. The astronaut who carried out the experiment on board Atlantis collapsed during a welcome home ceremony from the mission. NASA experts attributed that to her adjusting to gravity. And Assoc Prof Nickerson says the incident was totally unrelated to her work with the bacteria. "At no time were the crew at any risk - this experiment was properly contained in triple containment levels for their safety," she said. "Nor was anyone on the ground, or nor is anyone on the ground in any risk for these bacteria. "Everyone actually has potential to benefit because of the novelty in the ways that this bug is now showing us that it's causing disease."

 Even Just the researching discovers curse for diseases

Martin **Schwab**, security strategist at the University of Zurich, 20**06** [“dhttp://beyondearth.org/pdfs/beyond-earth-ch-34.pdf ]

\*Natural and human influenced change to the Earth system. Citizens and their representatives need to know that we are now winning or losing the battles against multiple threats to human existence in the wider war for our progeny. We are now experiencing the effects of climate change around Earth. We are experiencing potential pandemics of disease around Earth. We are now experiencing fresh water scarcity around Earth. We are now experiencing biodiversity decline around Earth. These global threats can be overcome by an expanded human presence in our solar system, if for no other reason than micro-evacuation followed by back-population of Earth, in a worst case scenario. Closer to home, continued medical experimentation aboard the International Space Station (ISS) could potentially yield breakthroughdefenses against SARS, the Ebola virus and AIDS, each of which potentially threatens global civilization as we know it.90

Risks of diseases and biological weapons on the earth outweigh.

**Falconi 01,** Oscar: BS degree in Physics from M.I.T.

[“THE CASE FOR SPACE COLONIZATION - NOW!” http://www.nutri.com/space/]

About 30,000,000 persons died in the summer and fall of 1918 of "Spanish" influenza. This was about 2% of the world's population and far more than were killed in the 4 years of World War I. Between 1346 and 1368 the "Black Death", probably a bubonic plague, killed 25,000,000 persons just in Europe alone - about 1/4 of its population. In some parts of Europe over 3/4 of the population died. We should interpret these historical facts as an ominous warning of [hu]man[ity]'s vulnerability to forces beyond his comprehension and well beyond his control. Less than a thousandth of an ounce of a certain bacterial toxin is enough to kill the entire human population. Bacteria, their toxins, and other substances that are even more deadly, very probably exist in many of the chemical, bacteriological, biological, and germ warfare laboratories of the world. Important questions are: Can these substances kill ALL human life? How secure are they from theft or leakage? Can they be controlled if used? In 1974, at the now-famous Asilomar meeting, a group of 140 leading genetic researchers discussed the hazards of genetic manipulation, set guidelines, and pledged themselves to restrict certain aspects of their work in order to protect [hu]mankind from the potentially disastrous consequences of what modern science can create in a test tube. These scientists realized that they could produce a deadly virus or strain of bacteria against which there was no protection. From France: "The threat of disseminating new infectious germs that have never existed in nature could provoke uncontrollable epidemics." And from the U.S. National Acadamy of Sciences: "[Hu]Man[ity] has always been vulnerable to mass hazards, such as plagues and earthquakes, but he[/she] now has the capability of creating his own monumental disasters in a way never before possible." But is a moratorium on experimentation in genetic manipulation the answer? Can one really believe that Russian, Israeli, or Chinese researchers will abide by such an agreement? Can you picture a German or Indian scientist, on the verge of a spectacular breakthrough, stopping his research? Of course not! He'll merely postpone publication. The final result of any such agreement is that the United States will have unilaterally disarmed itself in the field of genetic manipulation. What's more, American scientists will no longer be in the position to lead an orderly, safe, development of the field. Advances will now be taking place clandestinely in backroom labs worldwide. Most scientists have the best intentions, but when God, country, or career enter the scene, nearsightedness can prevail. [\* edited for gender-biased language]

Diseases are short term – They evolve to be benign.

AMNH 98, The American Museum of Natural History

[“How did Hyperdisease cause extinctions?” http://www.amnh.org/science/biodiversity/extinction/Day1/disease/Bit2.html]

It is well known that lethal diseases can have a profound effect on species' population size and structure. However, it is generally accepted that the principal populational effects of disease are acute--that is, short-term. In other words, although a species many suffer substantial loss from the effects of a given highly infectious disease at a given time, the facts indicate that natural populations tend to bounce back after the period of high losses. Thus, disease as a primary cause of extinction seems implausible. However, this is the normal case, where the disease-provoking pathogen and its host have had a long relationship. Ordinarily, it is not in the pathogens interest to rapidly kill off large numbers of individuals in its host species, because that might imperil its own survival. Disease theorists long ago expressed the idea that pathogens tend to evolve toward a "benign" state of affairs with their hosts, which means in practice that they continue to infect, but tend not to kill (or at least not rapidly). A very good reason for suspecting this to be an accurate view of pathogen-host relationships is that individuals with few or no genetic defenses against a particular pathogen will be maintained within the host population, thus ensuring the pathogen's ultimate survival

# Exploration Solves Colonization

**Exploration Leads to colonization**

**AFP (**news agency) **08** “Space exploration key to mankind's survival: NASA chief” sep 25 2008 <http://www.breitbart.com/article.php?id=080925122953.ty01k9qm&show_article=1>(Pitman)

 Mankind's very survival depends on the future exploration of space, said NASA chiMichael Griffin in an interview with AFP marking the 50th anniversary of the US space agency. This journey, said the veteran physicist and aerospace engineer, is full of unknowns and has only just begun. "Does the survival of human kind depend upon it? I think so," he said. Griffin compared the first walk on the Moon with Christopher Columbus's first voyage to the Americas. "He travelled for months and spent a few weeks in the Americas and returned home. He could hardly have said to have explored the New World. "So we have just begun to touch other worlds," said Griffin. "I think we must return to the Moon because it's the next step. It's a few days from home," he said, adding Mars was also "only a few months" from Earth. But Griffin acknowledged that like the 15th century explorers who embarked on their adventures without knowing what they would find, a leap of faith is required for space travel. "As we move out in our solar system, expanding human presence, we can't prove what we will find will be useful. "It was understood in Columbus's time that if voyagers discovered new lands they would find valuable things. We can't prove today that we can exploit what we find to the benefit of humankind." However, in the long run, Griffin believes "human populations must diversify if it wishes to survive." In explaining his goals for NASA in testimony to Congress in 2004, Griffin said: "The single overarching goal of human space flight is the human settlement of the solar system, and eventually beyond.

# Aff – Inherency India

**India is becoming a space threat (or India is becoming a space power)**

**Samson** ( victoria Samson is currently the Washington director of the Secure World Foundation, an organization that focuses on the sustainable use of space. She was previously a senior analyst at the Center for Defense Information, focusing on missile defense and space security issues. She started out working on missile defense wargaming scenarios for what was then the Ballistic Missile Defense Organization, now the Missile Defense Agency. She is the author of American Missile Defense: A Guide to the Issues (Praeger Security International, 2010). **10** “India’s missile defense/anti-satellite nexus” Monday May 10, 2010(<http://www.thespacereview.com/article/1621/1>)(Pitman)

 While China’s 2007 anti-satellite (ASAT) test and its missile defense intercept test earlier this year have attracted much attention and concern, another emerging space power has also been expressing its interest in developing those capabilities yet attracting very little notice: India. Given enthusiastic statements by Indian officials about what they see as the need for ASATs and the country’s continued missile defense efforts, this could be worrisome. Though most of the rhetoric can be chalked up to regional rivalry, and much of the grandstanding downplays the level of technical capacity that still needs to be developed, India’s plans for missile defense and their relationship to space security bear further monitoring.

**India is building missile Defense now**

**Samson** ( victoria Samson is currently the Washington director of the Secure World Foundation, an organization that focuses on the sustainable use of space. She was previously a senior analyst at the Center for Defense Information, focusing on missile defense and space security issues. She started out working on missile defense wargaming scenarios for what was then the Ballistic Missile Defense Organization, now the Missile Defense Agency. She is the author of American Missile Defense: A Guide to the Issues (Praeger Security International, 2010). **10** “India’s missile defense/anti-satellite nexus” Monday May 10, 2010(<http://www.thespacereview.com/article/1621/1>)(Pitman)

 India has been working on a missile defense system that is primarily indigenously built for several decades, but it wasn’t until relatively recently that successes were repeated during testing. India held missile defense intercept attempts in November 2006 (a test where the intercept occurred outside the Earth’s atmosphere, or was exoatmospheric), December 2007 (a test where Indian officials claimed that the intercept occurred inside the Earth’s atmosphere, or was endoatmospheric, despite video footage implying that the interceptor missed the target), March 2009 (an exoatmospheric test), and March 2010.1 During the last test, the modified Prithvi target missile did not follow its scheduled flight path and thus the interceptor missile, called the Advanced Air Defense (AAD) missile, was not launched.2 Indian officials have indicated that they want to deploy a working missile defense system by 2012. Defense Research and Development Organization Director General V.K. Saraswat stated last October that the “[o]nly part that remains to be developed is the interceptor missile;”3 the US Missile Defense Agency’s experience in developing interceptors might demonstrate to him how much work India might have ahead of itself. Per Saraswat, there are two phases to India’s intended ballistic missile program: the first phase is planned to intercept target missiles with ranges of up to 2,000 kilometers via “exo-atmospheric, endo-atmospheric and high-altitude interceptions,” while in the second phase, India will strive to be able to intercept target missiles with ranges of 5,000 kilometers, which potentially could give India the ability to intercept intercontinental ballistic missiles.4 Saraswat also proudly noted after China held its first missile defense intercept test attempt in January 2010, “This is one area where we are senior to China.”5

**Anti satellite testing leads to space debris**

**Samson** ( victoria Samson is currently the Washington director of the Secure World Foundation, an organization that focuses on the sustainable use of space. She was previously a senior analyst at the Center for Defense Information, focusing on missile defense and space security issues. She started out working on missile defense wargaming scenarios for what was then the Ballistic Missile Defense Organization, now the Missile Defense Agency. She is the author of American Missile Defense: A Guide to the Issues (Praeger Security International, 2010). **10** “India’s missile defense/anti-satellite nexus” Monday May 10, 2010(<http://www.thespacereview.com/article/1621/1>)(Pitman)

Clarifying his statements from the previous month, Saraswat announced in February 2010, “In Agni-III, we have the building blocks and the capability to hit a satellite but we don't have to hit a satellite… If you hit a satellite, the repercussions are that we will have debris and they will be detrimental to objects in space and it will remain in there for many years.”12 This was a welcome acknowledgement by an Indian military official of some of the negative consequences of actively testing an ASAT program. Instead, Saraswat said that India “will validate the anti-satellite capability on the ground through simulation,” emphasizing that “there is no program to do a direct hit to the satellite.”13 Conflating India’s successes thus far with its ballistic missile arsenal development and its plans for a ballistic missile defense system, he went on to say, “With the kill vehicle available and with the propulsion system of Agni III, that can carry the missile up to 1,000 kilometers altitude, we can reach the orbit in which the satellite is and it is well within our capability.”14

 **Increasing risk of china India war over space**

**Samson** ( victoria Samson is currently the Washington director of the Secure World Foundation, an organization that focuses on the sustainable use of space. She was previously a senior analyst at the Center for Defense Information, focusing on missile defense and space security issues. She started out working on missile defense wargaming scenarios for what was then the Ballistic Missile Defense Organization, now the Missile Defense Agency. She is the author of American Missile Defense: A Guide to the Issues (Praeger Security International, 2010**). 10** “India’s missile defense/anti-satellite nexus” Monday May 10, 2010(http://www.thespacereview.com/article/1621/1)(Pitman)

But primarily, as can be seen by statements by Indian officials, not ceding ground to its political regional rival, China, is mostly grandstanding by India. The Indians see China as their main competitor and nation of concern (regarding space capabilities) in the region. So these statements by Indian officials partially can be explained as bombast to assure domestic audiences that India is a peer of China or even ahead of it. However, there is another explanation: these statements indicate that India is interested in being able to reach China. The Indians may have decided that they should be able to cover all contingencies for future conflicts. The Pakistanis are already well within range of Indian ballistic missiles, and by developing this long-range missile capability, the Indians will be able to counter China as well. They can point to the 2007 Chinese ASAT test as an example of the pressing need for reciprocal capability; again, this mirrors some of the debate within the United States for why American space assets may be endangered. And since China reportedly held its own hit-to-kill missile defense test in January 2010, this just adds more justification to those who feel that India must have a missile defense system in order to keep up with regional capabilities.

# Space Debris Add-on

**SBLs are key destroy space debris orbiting around the earth.**

Wolfgang **Schall,** scientist at DLR Institute for Technical Physics, **98**

DLR Institute for Technical Physics, “Removal of small space debris with orbiting lasers”, 4/27/98, <http://spiedigitallibrary.org/proceedings/resource/2/psisdg/3343/1/564_1?isAuthorized=no> [Marcus]

Space debris at low Earth orbits (LEO) in the size range of 1 to 10 cm in diameter poses a severe threat on the International Space Station and other valuable space assets. High-power laser radiation may be the most feasible means to mitigate this problem. Under the irradiation of a high-power laser beam part of the debris material is ablated and provides an impulse to the debris fragment. Proper direction of the impulse vector allows either to deflect the object trajectory to miss the station (defense option) or to reduce the orbital energy of the debris and force it on a trajectory through the upper atmosphere. There the debris burns up instantaneously or after a few revolutions (cleaning option for LEO). A space based deployment of the laser is favored for several reasons: The lack of laser transmission through the atmosphere reduces the total the total system substantially, laser range and detection requirements are inferior and the laser can be used against an immediate threat. Peculiarities of the geometrical situation in the orbital plane are described. Based on a 100 kW average power laser, aluminum as a typical material, and some other assumptions, the capability and limitations with respect to the debris velocity and mass are calculated for both options of the laser utilization.

**Space Debris risks extinction.**

Timothy **Ferris**, American Physics Pulitzer Prize winner, **97**

The New Yorker, “Is this the end”, 1/27/97, <http://www.dhushara.com/book/future/comet.htm> [Marcus]

On the final night, debris blown off the comet as it passed near the sun starts striking Earth. Fireballs light up the sky. A meteorite punches a hole in an apartment house in Morocco. Another sets fire to oak trees in Anatolia. The comet hits near Bermuda just before dawn Eastern time. The explosion vaporizes an enormous sphere of air, seawater, and sou, cutting a crater a hundred mues in diameter in the ocean floor. This makes a thunderdap that rolls through Philadelphia and New York a little over an hour later and will thereafter be heard, rather more faintly, in London, Moscow, Rio, and Tokyo. The impact's splash arrives at the East Coast not far behind the sound. In the deep sea, where it has plenty of room to expand, this mighty wave soon settles to a height of only fifty feet or so - a long, gentle swell moving inconspicuously but rapidly outward at a velocity of more than five hundred miles an hour. But tsunamis grow when water gets shallow. This one stacks up over the Grand Banks, then hits Manhattan at sunrise at a height of six hundred feet. Florida has already gone under. Before the day is out, most of Earth's low-lying regions have been submerged, from Edinburgh, Copenhagen, and Dubbn to Hong Kong and Bangkok Yet, in the final accounting, water creates only tertiary damage. A greater threat is fire. The conflagration begins within the hour, as a spectacular meteor shower best seen from Asia, where it is evening. Clumps of debris thrown into space by the exploding comet have been launched in all directions, Eke fleets of ICBMS, and now they descend, filling the night with fireballs. Many expire in the atmosphere, but millions hit, igniting forests, villages, and cities. Soon the world is ablaze, and the air turns black with soot. The soot, along with tons of talc-like dust pumped into the air by the explosion, clouds the atmosphere and blots out the sun for a period ranging from six months to a year, and it is this blackness along with an acid rain comprising sulfur dioxide and toxic metals-that proves to be the impact's most lethal agency. In a world gone dark that long, most plant life expires, as do marine creatures that dwell near the surface, and their loss, in turn, dooms the creatures that rely on them for food. The pattern of extinction shows a preference for the more complex organisms, which are most reliant on the support of multiple elements in the food chain. Human beings are complex organisms; their problem wiu be what to eat. With the world's food surpluses amounting, typically, to less than a year's supply, people who manage to survive the initial blast, floods, and fires wifl find themselves confronting starvation. Among the dire possibilities brought forth by those who consider such things is the prospect that nuclear-armed nations with little remaining food might try to blackmail those with somewhat more food. In the over-all scheme of things, however, it doesn't matter much whether nuclear violence writes a final chapter to the general catastrophe. Scattered enclaves of humans might survive a major comet impact, but human civilization almost certainly would not.

# Asteroids Add-on

**Attempting to stop asteroids is imperative- the risk is too large to take**

**Gold and Bucknam** Robert is Chief Technologist for the Space Department at the Applied Physics Laboratory of the Johns Hopkins University. He is a physicist who has specialized in heliospheric and planetary particles and fields research. Colonel Mark is a former Council Military Fellow **‘08** (Survival, “Asteroid Threat? The Problem of Planetary Defence”, 2008, Hopkins)

Apophis is not the only massive and potentially threatening object crossing Earth’s orbit. Larger objects that could inflict even greater damage also circulate in Earth’s neighbourhood. Fortunately, larger objects are proportionally rarer. There are roughly 100 times as many objects onetenth the size of Apophis, and only one-hundredth as many objects ten times its size. At one-tenth the size of Apophis – approximately 23m across – an asteroid is big enough to make it through Earth’s atmosphere but unlikely to do widespread damage. As a point of comparison, some 50,000 years ago an asteroid roughly 46m in diameter is thought to have created Arizona’s impressive 1,200m-wide Meteor Crater. Scientists estimate impacts from asteroids of that size occur, on average, approximately once every 1,000 years. 2 At ten times the size of Apophis – roughly 2.3km across – an asteroid colliding with Earth would cause global effects and could kill tens of millions, if not billions, of people. Finally, the National Aeronautics and Space Administration (NASA) has categorised a strike from a 10km-wide asteroid as ‘an extinction-class event’. 3 An asteroid of that size is widely believed to have hit the continental shelf off Mexico’s Yucatán Peninsula some 65m years ago, near the present-day town of Chicxulub, wiping out an estimated 70% of all animal species, including the dinosaurs. 4 Fortunately, such catastrophes are estimated to occur only once every 100m years. 5 On average, a 1.5km asteroid will strike the Earth approximately every 500,000 years. The devastation from such an impact could kill up to 1.5 billion people. In one sense, that puts the risk of dying from an asteroid strike on a par with dying from a passenger-aircraft accident—around 1 in 20,000 averaged over a 65-year lifetime. But half a million years is so long compared to a human lifespan that it defies believable comparison. Twenty thousand generations will go unscathed for each generation that is decimated by a 1.5km asteroid. Aeroplanes have been around for little more than a century, and fatal aircraft accidents occur every year, so it is not difficult to convince people of the risks associated with flying and the need to spend money to improve flying safety standards. The chances of Earth being hit by a comet are even smaller than for asteroids. This is a very good thing: comets travel faster and would deliver about nine times as much energy as comparably sized asteroids. When Comet Shoemaker–Levy 9 broke up and slammed into Jupiter in 1994, one of its fragments delivered energy equivalent to 6 million megatonnes of TNT, hundreds of times more energy than in all of the world’s nuclear arsenals combined. Long-period comets spend most of their existence in the outer regions of the solar system, beyond the orbits of Jupiter, Saturn, Uranus and even Neptune, infrequently visiting the neighbourhood of the inner planets. Unfortunately, such comets, unknown to us, would only become visible when they were within 6–18 months of possibly striking Earth, leaving little time to react. There has not been a single recorded incident of a person being killed by a meteoroid, asteroid or comet, so it is understandable that most people, including scientists, have not traditionally worried about the threat posed by space objects. It is to be hoped that Apophis will not pass through the ‘gravitational keyhole‘ that would put it on course to collide with Earth in 2036, and that there are no undetected asteroids or comets on such a course. But hope is not a strategy, and There is not a single recorded death by meteoroid as small as the probabilities might be, the possible consequences of such an impact merit efforts to mitigate the risk. Despite human inventiveness and rapidly expanding knowledge, the ability to detect threatening asteroids and comets is weak, and there are no proven systems for deflecting them. Scientists have identified the problem and analysed possible approaches for addressing it, but no one has begun to implement any of the proposed techniques. The threat of collision from asteroids and comets calls for a three-step approach to mitigating the risks: first, find and track objects that are potentially hazardous to the Earth; second, study their characteristics so as to understand which mitigation schemes are likely to be effective; and third, test various deflection techniques to ascertain the best way to adjust the orbits of asteroids and comets, and possibly field a planetary-defence system. Each of these steps would benefit from international cooperation or agreement. It takes an asteroid like Apophis, or a comet like Shoemaker–Levy 9, to remind us that the threat from space is real. And while the probabilities of a strike are small, the consequences are potentially cataclysmic, making our current state of near ignorance unacceptable.

# Russian Accidents – Add On

BMD creates pre-emption – makes crisis control easier

Dr. Steven **Lambakis**, Senior Defense Analyst at the National Institute for Public Policy, 20**07**. “Missile Defense from Space,” http://www.gees.org/documentos/Documen-02177.pdf

Improved system performance would give the U.S. leadership a better array of options. In the face of attempted blackmail, for example, the president and his advisors would have confidence in the nation’s capabilities to defeat a missile, which would make it possible to avoid more destabilizing moves, such as offensive preventive attacks on enemy territory. It is equally true that strong defenses would support necessary offensive action. Effective defenses can buy time to understand the strategic consequences and overall impact of military action.

**Russian accidental launch is probable and would lead to global nuclear exchange.**

Jacques **Gansler,** Former Under Secretary of Defense for Acquisition, Technology and Logistics, **10**

CENTER FOR TECHNOLOGY AND NATIONAL SECURITY POLICY NATIONAL DEFENSE UNIVERSITY WASHINGTON, DC, “ Ballistic Missile Defense Past and Future, 4/10, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA527876&Location=U2&doc=GetTRDoc.pdf> [Marcus]

The second scenario is a real, near-term possibility. Russian command and control over the launch of ICBMs has deteriorated, The Russian leadership continues to fear a U.S. first strike and believes it must keep its ICBMs on high readiness. The President of the United States receives a “hotline” call from the President of Russia saying: “You were right to keep warning us about the possibility of an inadvertent launch of one of our long-range missiles. In fact, this just happened, and the missile is on its way to strike Washington, D.C. You have my sincere apologies about this catastrophic event, and we will certainly do everything we can to make sure that your people understand this was not intentional. But, recognizing that you have no defensive capability, and that this means a catastrophic loss of American lives, we still think it is the wisest course for you not to respond in any equivalent or escalatory fashion, as it will undoubtedly result in an all-out nuclear exchange and the destruction of both of our countries.” Faced with the decapitation of the U.S. Government, what options does the President have for defending the Nation?

**Missile defense must be developed to counter expanding Russia**

**Independent Working Group** (The Independent Working Group is co-chaired by Dr. Robert Pfaltzgraff, President of the Institute of Foreign Policy Analysis (IFPA) at Tufts University, and by Dr. William R. Van Cleave, Professor Emeritus of the Department of Defense and Strategic Studies at Missouri State University, and a member of the original U.S. delegation which drafted the 1972 ABM Treaty. Ambassador Henry F. Cooper, who in former roles oversaw both development of missile defense for the U.S. and was chief negotiator to the Geneva Defense and Space Talks, Dr. Robert Jastrow, founding director of NASA’s Goddard Institute for Space Studies, and Dr. Lowell Wood, a Physicist at Lawrence Livermore National Laboratory and Commissioner on the Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) were among the numerous missile defense, space, and security experts from the scientific, technical, and national security policy communities around the country who are members of the Independent Working Group. Members of the Working Group also include Brian T. Kennedy, president of the Claremont Institute, and Thomas Karako, Director of Programs at the Claremont Institute and editor of Missilethreat.com. Sponsors and authors of the IWG report include eight think-tanks headquartered in Washington D.C., California, Alaska, Missouri, Massachusetts, and around the country.**2007**(Collectivereport/study) “missile defense and the space relationship and the 21st century”2007 http://www.missilethreat.com/repository/doclib/IWGreport.pdf (Pitman)

II. What are the implications of the key issues raised in the Cornerstone Paper for overall U.S. national security? The United States faces a global security setting character­ized by accelerating proliferation of weapons of mass destruc­tion (WMD) and the means to deliver them. New actors are acquiring technologies ranging from individual components to complete systems resulting in such capabilities. Although Russia does not today pose a missile threat to the United States, despite its continuing possession of large numbers of delivery systems with sufficient range to reach American targets, it possesses technologies, including ballistic missile components and expertise, that are being actively proliferat­ed. Furthermore, we have no assurance that a future Russian leadership will not threaten the United States with its exten­sive nuclear-armed missile inventory. Indeed, under President Vladimir V. Putin, Russia appears increasingly committed to the reestablishment of a neo-imperialist sphere of influence in the new states to its south and west. Putin has spoken of rebuilding a “Great Russia.” Russia has also demonstrated a sustained and alarming drift toward authoritarianism. A U.S. missile defense must therefore be sufficient to counter a fu­ture threat from Russia.

Space BMD is key to deter Russian strikes

Dr. Robert **Pfaltzgraff**, Professor of International Security Studies at the Fletcher School, Tufts President, Institute for Foreign Policy Analysis, **and** Dr. William R. **Van** **Cleave**, Professor Emeritus, Department of Defense and Strategic Studies at Missouri State **et al 2009**. “Independent Working Group on Missile Defense, the Space Relationship, & The 21st Century, 2009 Report. http://www.ifpa.org/pdf/IWG2009.pdf

The United States faces a global security setting characterized by accelerating proliferation of weapons of mass destruction and the means to deliver them. New actors are acquiring technologies ranging from individual components to complete systems resulting in such capabilities. Although Russia does not today pose a missile threat to the United States, despite its continuing possession of large numbers of delivery systems with sufficient range to reach American targets, it possesses technologies, including ballistic missile components and expertise, that are being actively proliferated. Furthermore, we have no assurance that a future Russian leadership will not threaten the United States with its extensive nuclear-armed missile inventory. Indeed, Russia appears increasingly committed to the reestablishment of a neo-imperialist sphere of influence in the new states to its south and west. Putin has spoken of rebuilding a “Great Russia” and has decried the dissolution of the Soviet Union as one of the greatest calamities of the twentieth century. Russia has also demonstrated a sustained and alarming drift toward authoritarianism and toward the reassertion of power on its periphery, as in the conflict with neighboring Georgia in 2008. A U.S. missile defense must therefore be sufficient to counter a future threat from Russia.

Russian opposition to missile defense proves they are trying to challenge the US

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Despite the political changes that have taken place in the U.S.-Russian relationship, some positive and others negative, a U.S. missile defense site in Eastern Europe is viewed in Moscow as inimical to Russia. On numerous occasions, Russian political and military officials have denounced the U.S. plans to deploy the ground-based components of missile defense in Poland and the Czech Republic, which were once part of the Warsaw Pact. 6 Before transitioning from the presidential to the prime-ministerial post in 2008, Vladimir Putin summarized Russian objections: “Our generals, our security council, consider these moves a threat to our national security.” He went on to say that Russia “will have to react appropriately by retargeting our missiles.” 7 After the collapse of the Soviet Union, Russia became increasingly dependent on nuclear weapons as its conventional forces atrophied. As U.S. officials have repeatedly pointed out, missile defense currently being developed is not directed against Russia. In detailed discussions with their Russian counterparts, U.S. officials have reiterated that the U.S. missile defense system is not sufficiently robust to intercept the large Russian ballistic missile force. Because Russian opposition to U.S. missile defense remains so great, one can only conclude that Russia, like the Soviet Union during the Cold War, seeks to drive a political wedge between the United States and NATO-Europe.