

Throughout the decades of the Cold War, China remained secondary to the Soviet Union in American strategy and thinking. Ironically, the Asia-Pacific region was where the Cold War got the hottest and a relatively minor nuclear power, China, often proved the most antagonistic to American interests. Now, after the Soviet Union devolved into a weakened Russian Republic, the rise of Chinese power has caused the United States to “rebalance” to the Asia Pacific region and toward China in particular. It would be comforting to simply assume that the nuclear policies so successful in deterring a major war between the U.S. and the Soviet Union will translate seamlessly into similar success regarding China. However, despite communism providing a façade of similarity, both advancing technologies and cultural differences demand that this assumption be re-examined and challenged. Successful deterrence is a communicative art that, in the nuclear arena especially, defies simplistic solutions¹.

HISTORY OF STRATEGIC AIRPOWER

The tragedy of the trenches that defined the First World War coincided with the rapid advancement of technology. Particularly in aviation, only a decade after the Wright Brothers flew at Kitty Hawk, fragile warplanes took to the sky over Western Europe. Originally capable of only rudimentary observation, aircraft quickly evolved into specialized missions and designs. This technical innovation expanded the previously two dimensional battlefield into three. National capitals, the heart of governance heretofore defended by armies and navies, stood exposed to direct destruction from the air. This ability to bypass the seemingly senseless slaughter of the Western Front captured the imagination of several visionaries. Foremost among these prophets of airpower was an Italian artilleryman, Guilio Douhet².

Douhet, while probably not the first to identify the potential of this new concept of “Airpower,” was certainly airpower’s most articulate, forceful and dedicated advocate³. His 1921 publication, *Command of the Air*, remains the basis of strategic airpower doctrine and theory in the United States and globally⁴. Douhet’s application of strategic airpower, separate from, and independent of, aircraft in support of ground and naval forces, possesses the ability to target the strategic centers of gravity of an opponent⁵. This new kind of war transcended the technologies of existing surface forces. A nation that could gain command of the air could strike directly and decisively the industry, farming, and, ultimately, the civilian populations of his enemies⁶. This theory of warfare was effectively complete and integrated into American and British aviators’ thinking before the Second World War⁷.

While the theory was fundamentally logical, the technology lagged behind the ideas. The aircraft and munitions of the day proved incapable of destroying both the homes, and the more important hearts, of the German and Japanese populations or their leaders during the Second World War. The assumed invulnerability of the bombers to

defensive measures was laid bare a deadly lie⁸. Tens of thousands of airmen were killed in the fruitless pursuit of an airpower solution to Axis aggression⁹. In the even greater tragedy of this second global war, however, two technologies emerged which seemed to bring to fruition both the requisite destruction and invulnerability required for true airpower. These were the atomic bomb and the ballistic missile.

Generals and academics both saw the promise inherent in atomic weapons atop unstoppable ballistic missiles¹⁰. The poor accuracy of the latter was irrelevant when combined with the awe inspiring destruction of the former. Only a year after the Second World War ended in the shadow of two atomic clouds over Japan, the future of strategic airpower was suspected by many to be found in atomic bomb laden missiles. How soon this future was to arrive, however, was unknown¹¹. In the interim between the declaration and the fulfillment of this missile laden future, the airpower theories were augmented by theorists using intercontinental bombers carrying first fission and, later, the much more powerful fusion based hydrogen weapons. The various theories of nuclear warfare and its inherent deterrent capability from the 1950s and 1960s remain almost unchanged today¹².

NUCLEAR DETERRENCE THEORY

Nuclear deterrence theory, born and bred both from the earlier airpower theories and basic strategic thought¹³, has a language and history all its own. Books have been written on the subject that precludes an in-depth analysis here. But, for the purposes of this paper, an overview of the basic concepts will be enough for analytical purposes. Due to the horrific destruction promised in a nuclear exchange, concepts inherent in all warfare can often be magnified; none more so than the proclivity to over-estimate the ability of your enemy¹⁴. This over-estimation of your enemy, while being fully cognizant of your own weakness, has led to arms races, paranoia and, fortuitously, hesitancy to use nuclear weapons since World War II.

Reserving the first use of nuclear weapons has been the policy of the United States since atomic weapons were invented. Indeed, the United States remains the only country to have used them in conflict. Their threatened use was considered a legitimate defense against a seemingly overwhelming Soviet conventional capability immediately after the Second World War in Western Europe and remained so for decades later¹⁵. As the Soviet Union developed its own nuclear weapons (and the means to deliver them) the United States developed the concept of “counter-force” for its “first strike” strategy¹⁶. Going back to Douhet, a “first strike” counterforce plan would seek to disarm the enemy of its own nuclear capability in an all-out attack. Having disarmed the enemy (or, in the original term, having gained “Command of the Air”), the US would then be free to pursue its policy objectives with the specter of nuclear retaliation safely removed or at least minimized to an acceptable level.

First strike is, paradoxically, an offensive operational concept supporting a defensive strategy. From the United States' perspective, it could deter a Soviet conventional attack against NATO maintaining the status quo throughout Europe. The ultimate measure of the capability of a first strike, counter force strategy is, "What could the enemy still do to us after our first strike with his remaining forces?"¹⁷ If the surviving capability of the enemy remains strong, then his retaliatory "second strike" would render the first strike strategy weak or completely untenable. The greater the ability of the enemy to defend and strengthen his second strike capability, the less likely a first strike strategy would be used. Anything that can minimize the destructive effects of the enemy's second strike strengthens a first strike strategy.

Obviously, targeting the empty silos and long abandoned airbases would be foolish as a retaliatory tactic. Second strike targeting abandons the counter-force concept and is based around a "counter value" targeting scheme. This seemingly antiseptic euphemism usually translates openly to the targeting of industrial centers. This, due to their inherent close proximity to cities, really means the targeting of your enemy's cities and the civilians which inhabit them. If the enemy can maintain a reliable and survivable second strike capability, this would deter any proposed first strike and would deter, in theory, all nuclear wars involving rational belligerents¹⁸.

The technologies for both a first strike and a second strike nuclear capability are somewhat similar but have differences that must be noted. A counter-force strategy requires outstanding intelligence and, in the era of concrete hardened missile silos, a high degree of precision¹⁹. These capabilities must be so closely coordinated that they could strike all their targets within a matter of minutes. Any and all defenses against the nuclear counter attack would augment this strategy. A second strike capability requires survivability and power²⁰. Large payloads capable of mass destruction of undefended cities are the most effective in deterring a first strike.

Survivability can be gained in many ways, though the preferred method remains mobility. Both the United States and the Soviet Union developed submarine launched missiles to ensure their second strike capability remained viable even after a first strike. Their unmatched stealth and ability to launch close to the enemy ensured a high payload and meant that only one surviving submarine could provide enough deterrence to thwart an enemy contemplating a nuclear first strike. Submarines are not invulnerable, however. NATO, and the United States and Great Britain in particular, invested heavily in anti-submarine warfare. To counter this, the Soviet Union developed land mobile ICBMs to provide yet another level of redundancy to their retaliatory capability²¹. History would indicate that both the United States and the Soviet Union successfully hardened their second strike capabilities to such a degree that mutual deterrence effectively kept the Cold War from going hot²². This Mutually Assured

Destruction (MAD) eventually would appear to have fulfilled the promise of peace made by the early airpower apostles.

MODERN CHINESE STRATEGY

Chinese strategy, while borrowing heavily from Marxist-Leninism on the surface, remains grounded in Sun Tzu and Mao Tze Tung²³. The terminology used in modern Chinese strategy will be instantly recognized by any Sovietologist. A key difference being that the core of Soviet thought was the inevitability of both an existential conflict between Capitalism and Marxism and the inevitability of the ultimate global triumph of Marxist ideology²⁴. This led to a patient policy that did not seek to challenge the western interests in the absence of certain success. China, however, currently retains a more nationalistic point of view. Domestic stability and expansion of near territorial claims in the name of China, not global communism, is their stated priority²⁵. Moreover, China's Communist Party now apparently perceives China as the victim of "hegemons" seeking to establish dominion over China and her interests²⁶. The inevitable triumph of China is not an assumption, but rather a goal to be actively pursued. So while patient in their own way, Chinese patience may not be same model the United States faced from the Soviets during the Cold War.

Chinese nuclear policy reflects both similarities with, and differences from, the Soviet and American models. China has a no first use policy which externally slaves it to a second strike, counter value nuclear strategy²⁷. China's claimed capability reflects this strategy. With less than 50 ICBMs capable of reaching the United States²⁸ and topped with large, single warheads, China's inventory²⁹ is best suited for targeting large cities. China does not have a significant force of inter-continental bombers and its submarine fleet remains small and inexperienced³⁰. China's vastly improved and demonstrated space capabilities, however, indicate that they are capable of rapid advancement of their nuclear delivery technology. Consequently its current status could be quickly and dramatically improved.

Confusing the issue is that China deliberately obfuscates its nuclear capabilities³¹. Western deterrence theory has been built upon a foundation of improved openness in order to facilitate arms reductions with both the Soviet Union and Russia. America's nuclear delivery TRIAD capability of ICBMs, SLBMs and bombers remains open and unclassified. The same cannot be said of China's capabilities. Their actual numbers of ICBMs and warheads is unknown. While orthodox analysis estimates low numbers, some estimates have the Chinese capability an order of magnitude greater³². China eschews any strategic arms limitation talks which would necessitate an ability to verify their capability. Why China chooses to do so could be either from a fear of displaying weakness or desire to keep a stronger capability secret.

The deception inherent in both Chinese strategy and nuclear policy also can extend to its oft stated, “No first use policy.” Strategic arms have often been equated to “nuclear weapons.” Both American and Soviet/Russian war planners flirted with tactical nuclear weapons. But the destruction inherent in even these “low yield” weapons is so great and the public perception of any nuclear use being repugnant that they remain in the hands of the highest policy makers and thus remain strategic by definition. Rather than making nuclear weapons tactical, both China and the United States have started to see high technology, conventional weapons as strategic³³. This blending of the conventional and nuclear at the strategic level brings nuance to the Chinese declaration of “No First Use.” It could be that no first use of strategic weapons means a high tech conventional attack on a strategic target would be *causus belli* to use other strategic weapons. Moreover, public statements by Chinese officials have openly brought into doubt the “No First Use” when concerned with areas of conflict such as Taiwan³⁴.

Chinese nuclear strategy and capabilities are, at best, a series of assumptions that leave open room for doubt for both hawks and doves. The transparency that many believe brought stability to the cold war remains an elusive goal when dealing with Chinese nuclear deterrence.

HISTORY OF STRATEGIC MISSILE DEFENSE

The defense against strategic airpower has been underestimated by many airpower advocates since Douhet’s time³⁵. Airpower theorists insisted that the effects of strategic bombing would be so horrific as to force capitulation or deter through threats alone. Anything that can be done to minimize these effects weakens the deterrence capability of airpower. These defenses mirror classic military risk reduction. Active defenses, such as interceptors, reduce the probability that a missile will get through while passive defenses, such as civil defense, reduce the severity of damage should a missile strike its target. Both are integral aspects of “holistic” defense against nuclear attack.

The British sought defenses soon after the first use of ballistic missiles. The primitive German V2 proved unstoppable once launched. The speed of the falling warhead could only be countered by the speed of another missile. But no defensive missile in existence had the technology to intercept the falling V2s³⁶. As with conventional bombing by aircraft, the British were forced to rely upon the basic passive defense of hiding underground in subway tunnels. Following the Second World War, the U.S. Army’s Coastal Artillery took up the challenge of missile defense as well as maintaining ground based air defense against piloted aircraft. In fear of a Soviet attack, many of these efforts were designed to be emplaced in the Continental United States (CONUS)³⁷.

Missile defense research lagged until Sputnik³⁸. The obvious realization that an orbiting satellite could easily be a falling atomic warhead left the US defenseless against a Soviet atomic attack by missiles. With the Soviets now having an unstoppable delivery mechanism for their proven nuclear capability, missile defense became a higher priority for American scientists and generals.

In order to understand the strategy of missile defense, a very basic understanding of ballistic missiles is required. The flight of a ballistic missile is broken into three phases: boost, mid-course, and terminal³⁹. The boost phase is the launch of the missile into its flight path forcing it out of the atmosphere and into its programmed path. It is normally 2-3 minutes long and is obviously over the launching country's territory. Due to this location, however, an effective boost defense remains elusive. The mid-course is the "flight" of the warhead in space (exo-atmospheric) traveling from launch location to target. Only the slightest movements are needed to fine tune the path of the warhead (known as a re-entry vehicle or RV) making predicting the flight path easy with proper radars. In addition, the ability to intercept during this phase means that one interceptor location can provide defenses over a wide area.

The two locations of the US's current Ground Based Mid-Course Defense (GMD) provides defenses for nearly all of the United States and Canada depending on the origin of the threat missile. However, being exo-atmospheric, intercepting the missile requires very powerful interceptors and radars. The mid-course phase is the longest, taking 20-30 minutes for an Inter-Continental Ballistic Missile (ICBM). Terminal is the final phase of a ballistic missiles flight. It is the shortest phase, only 40 seconds to drop from outer space to the ground. The terrific speed of the RV gives only the briefest intercept windows to the interceptors. In spite of these challenges, terminal intercept is the basis of our tactical missile defenses and is utilized by the Army's Patriot and Terminal High Altitude Air Defense (THAAD) as well as the Navy's Aegis, all having proven themselves against shorter range missiles⁴⁰.

The Nike Hercules missile was the first capable of defending against a falling warhead. The cure, however, was little better than the disease. Primitive targeting radars and interceptors could not provide a "Hit to Kill" capability that would destroy the warhead through direct impact. Rather, nuclear tipped interceptors would destroy the incoming warhead by proximity but still over the "defended" city. Being a terminal defense, Nike Hercules batteries were scattered throughout the United States⁴¹. The idea of nuclear warheads, albeit small ones, being so close to the populations they defended, left the program open to legitimate political opposition. Nike Hercules was, however, also useful against bombers (against which they were originally designed) and during the 50s the Soviet bomber threat justified their procurement and use.

As the bomber threat gave way to the perceived “missile gap” the many shortcomings of the Nike Hercules missile were addressed with an upgraded system. Called Nike-Zeus this missile gave greater speed and came with an upgraded radar, but still proved too slow to provide an effective terminal defense⁴². Another very high speed missile was created to minimize the gap in defenses. The Army renamed the Nike-Zeus to Spartan and the newly conceived high speed interceptor, “Sprint.” Combined with new phased array radars, the defense department planned to use the Spartan/Sprint to guard 20 locations nationwide in an overall defense system called “Sentinel”. Sentinel was an area system, designed to provide protection over a large percentage of the American populace. It was horrifically expensive and the Spartan/Sprints still required the use of nuclear warheads⁴³. The idea of multiple nuclear detonations to defend cities against nuclear attack proved to be ironically laughable. The systems cost and proposed usage quickly killed Sentinel in the planning phase.

The improved accuracy and capability of Soviet missile technology had given rise in the 1960s to the fear of a legitimate Soviet first strike ICBM capability. The United States saw the possibility of using the Spartan/Sprint equipment of Sentinel for a much more limited defense of a missile field ensuring the survivability of a legitimate US second Strike and thereby maintain the requisite capability for deterrence. Here the same technology was used for very different strategies. Sentinel was an area defense strengthening a first strike strategy⁴⁴. It could defend against the Soviet retaliatory strike and also defend against a Soviet first strike. But Safeguard was designed to provide a single point defense primarily for a missile field. It was only useful for the defense of a second strike capability. As the basis for mutual deterrence is each side having an effective second strike capability, Spartan/Sprint used for Sentinel was seen as destabilizing while Spartan/Sprint used in Safeguard was seen as stabilizing in most strategic circles⁴⁵⁴⁶.

The U.S. Senate narrowly approved Safeguard in August 1969⁴⁷. The United States constructed, activated and, less than a year later, deactivated it by 1973. Improvements in United States submarine technology had strengthened its retaliatory capabilities and doubts still remained about the effectiveness of the system⁴⁸. But it carried great political leverage against the Soviet Union and proved, if nothing else, a highly valuable bargaining chip in strategic arms negotiations⁴⁹. The Anti-Ballistic Missile (ABM) Treaty of 1972 authorized a “point” defense such as Safeguard. The Soviets maintained a similar point defense system around Moscow until the 1990s. While the US focused on defending the missiles, the Soviets wished to ensure the command and control (C2) required for effective nuclear deterrence survived a first strike⁵⁰. Missiles awaiting an order from a destroyed C2 are just as ineffective as ones destroyed by a nuclear strike.

The final piece of missile defense is the passive defense to protect citizens against the effects of a nuclear blast. The greatest proponent for this philosophy was Herman

Kahn, a member of RAND, whose coldly calculating book, *On Thermonuclear War*, was so macabre it made Kahn the most likely inspiration for the Dr. Strangelove character from the movie of the same name⁵¹. Kahn's research showed that investments in civil defense could save 10s of millions of lives in a nuclear war⁵². Of course, explicit in this legitimate claim, was that 10s of millions of lives would still be lost⁵³. Still, with the memory of World War II remaining fresh in everyone's mind, the loss of 20 million people was a number from which a country like the US could recover, if basic steps were taken. Civil defense could transform a nuclear exchange from an existential threat to a horrific, but survivable, possibility. In yet another irony of nuclear theory, the completely defensive and passive civil defense idea carried some of the most political baggage by forcing people to "think about the unthinkable" as well as being only viable as an adjunct to an aggressive first strike.

The previous overview is only the basic pieces and principles of nuclear deterrence. The first strike strategy, whose effectiveness is measured by how much damage an enemy can do after the first strike, requires accurate missiles, an active missile defense to destroy what is missed, and passive civil defense as a final layer to protect against those missiles that "leak" through. Second strike strategies focus on nullifying the three pieces of first strike to such a degree that the damage that can be inflicted after the enemy's first strike is so horrific as to render a first strike unthinkable. Required for both strategies is a rock solid command and control that ensures no accidental or unauthorized launches, but remains survivable after any attack and able to wield the surviving retaliatory capability.

NUCLEAR DETERRENCE VIS A VIS MODERN CHINA

Hans Morgenthau reminds us we must view these principles from a current Chinese perspective⁵⁴. Despite our primary focus on the Soviet Union, China was keenly aware that any nuclear capability effective against the Soviet Union would be overwhelming if directed against China. Furthermore, American capabilities were often explicitly directed against China. The U.S. nuclear arsenal was seen as a check on Soviet aggression in Western Europe, they were also used during the Korean conflict, not against North Korean troops, but as a lever against China⁵⁵. Eisenhower and Dulles attributed the threat to use nuclear weapons as the primary tool to break the stalemate with China in Korea⁵⁶. China was ultimately forced to accept not only *the status quo ante bellum*, but also a humiliating abandonment of their policy of forced repatriation for communist prisoners. From 1954-1958, China was again subjected to the threat of nuclear retaliation several times⁵⁷.

The highly contentious area defense Sentinel System was explicitly stated by Secretary McNamara to counter the Chinese nuclear threat, not the Soviet⁵⁸. While this public proclamation could be seen as simply verbally assuaging Soviet and domestic concerns

of destabilizing the nuclear balance it can also be seen *prima facie* as an undue U.S. fear of Chinese nuclear intentions. Several times during the Cold War deterrence implicitly designed against Soviet capabilities were publically focused on China.

Today, both the Russian and American nuclear inventories are greatly reduced. On the U.S. side, the first strike ICBM force has been slashed to only 450 warheads. While incapable of severely reducing the Soviet land based retaliatory capabilities, it provides an intimidating threat against the most likely Chinese capability. Several U.S. warheads could be targeted against each Chinese ICBM. The Chinese are developing mobile ICBMs utilizing a tunnel system to mitigate this threat⁵⁹, but the Chinese can never be sure how well US intelligence has penetrated the secrets of Sino nuclear deterrence.

The improving GMD system is unquestionably a cause for concern for China. John Holum, former US State Department chief of arms control stated, "The Chinese see missile defense as part of a grand design aimed at China.⁶⁰" Only a decade ago, the 5 interceptors were a minimal threat to China's deterrence. But now the Obama administration, far from a hawk on missile defense, has promised to increase the current inventory to 44⁶¹, nearly matching China's entire ICBM fleet. That is an order of magnitude larger inventory in only ten years. Publically, the US says the deterrence is designed against emerging threats such as North Korea and Iran⁶². But publically the US also said Sentinel was directed against China. Has the public deception now flipped? It is hard to justify 44 interceptors to counter the current or even future estimated North Korean nuclear capabilities. Both their warheads and their missiles are of questionable quantity and quality. The current GMD system is designed to counter warheads specifically, not missiles. The single warhead capability which China supposedly possesses is more easily countered by GMD than Multiple, Independently Targeted RVs (MIRVs) previously used by the United States and currently used by Russia. The West Coast based system in California and Alaska is well situated to provide defenses against a North Korean launch. But the geographical proximity of China to North Korea cannot be ignored by either party. We can deny GMD is focused on China in all honesty. But China cannot ignore the simple fact that accidentally or otherwise GMD poses a direct threat to their second strike deterrence.

The terrorist attacks of the post-Cold War era have given impetus to the development of greatly improved domestic response capabilities. Their title is no longer civil defense, which described their purpose, but rather now describes the threats they defend against: Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE). Since 1996, the United States has invested heavily in the US military and civilian first responder CBRNE defensive capability. Every major city's fire department is trained in radiological response⁶³. The US DoD has likewise invested greatly in National Guard CBRNE capabilities. Each state and territory has at least one full time response team and each of the ten Federal Emergency Management Agency (FEMA) regions have a

robust National Guard unit dedicated to search and rescue, medical support and radiological decontamination⁶⁴. While no one can say these teams were designed as part of a Kahnian first strike plan, the fact is these teams do support that 50 year old concept. As pure coincidence, FEMA was created by combining the various civil defense organizations created in response to Kahn's ideas⁶⁵.

You cannot talk about American strategy against China without talking about Air Sea Battle (ASB), the conventional operational concept developed partially, if not mostly, to counter Chinese expansionism. The details of ASB change as required, but the original, and most bellicose, description came from the Center for Strategic and Budgetary Analysis (CSBA) which describes utilizing advanced conventional strike capabilities to target not only China's conventional military, but also its command and control⁶⁶. The new TRIAD⁶⁷ may now be applied to target the heart of all nuclear deterrence; its trigger. So while ASB may specifically decline a nuclear integration⁶⁸, if successful in its implied operational objective of isolating the political control of its enemies' military, it would effectively and surgically neuter its nuclear deterrence as well. Remember, too, China sees conventional high tech warfare as a part of modern nuclear combat.

Here we have four separate elements of the US defense establishment, seemingly developed independently, combining to counter China's current estimated nuclear deterrence. If the heart of stability is found in the sanctity of both parties' second strike force, then we are rapidly approaching an increasingly unstable future *vis a vis* China. From this assumption, predictive analysis is possible.

HOW WILL CHINA RESPOND?

The *sine quo non* of super power sovereignty is effective nuclear deterrence. China must respond in the face of openly stated American capabilities and operational concepts. The 44 GMD interceptor capability can expect to be countered through an increased warhead count, either through more ICBMs or the development of a MIRV capability⁶⁹. While a Chinese nuclear submarine force is being developed⁷⁰, US Anti-Submarine Warfare (ASW) has an 80 year history of success⁷¹. It would be questionable for China to invest its deterrence capability in submarines so early in its own history of submarine warfare. To increase survivability, China is already investing in endo-atmospheric hypersonic capabilities for its warheads⁷². This could conceivably nullify GMD's abilities, though its technological viability is still questionable.

China may continue to openly state a "no first use" policy, but expect Chinese opaqueness to render the truth of these statements questionable⁷³. American policy makers must be sure to be as inclusive as possible in determining exactly what no first use means with every conceivable nuance taken into account. Finally, China may

utilize the brute force mechanism of simply building an unassailably large arsenal of missiles⁷⁴. A new arms race may be the only technologically viable mechanism available for China to maintain a reliable second strike. And as long as ASB maintains its insistence upon striking the Chinese mainland, a more decentralized nuclear command and control mechanism is a logical counter⁷⁵. The combination of larger nuclear forces and an increasingly decentralized command structure might be the price China must pay.

Two of these elements (ASB and the 44 interceptor fleet) remain years away from operational status. China currently has a window where their current nuclear deterrence remains relatively strong. China may take this near term opportunity and accelerate its forceful advancement of territorial claims in the Asia-Pacific region. Rather than improve its nuclear deterrence, China may simply move quickly to establish a new *status quo* in a conventional manner before the US has its more robust first strike capability established⁷⁶. China's recent actions in the Spratleys and Senkaku islands could reflect this strategy⁷⁷. American current and planned actions should elicit a Chinese response. Whether this will be near term conventional aggressiveness or a long term buildup of their nuclear forces (or both!) is unknown.

WHAT CAN THE US DO?

Should the United States adjust its policies to assuage Chinese concerns? One has to ask which parts of this four headed hydra (civil defense, ASB, missile defense and ICBMs) the United States would be willing to abandon. Our civil defense capabilities are clearly required in the wake of successful and attempted terrorist attacks both in the United States and abroad⁷⁸. Its linkage to our nuclear posture is a vestige of a generation past. It is by far the weakest aspect of any first strike capability and one that most likely enjoys the highest level of public support. Our ICBM force is an established part of America's TRIAD of nuclear deterrence. Anything short of complete removal of this leg will do little to change the balance of deterrence and is a political decision that appears unreasonable in the near future. And it doesn't eliminate the use of submarine launched missiles in a first strike role.

GMD is likewise a political winner with admittedly vocal detractors⁷⁹. The bedrock of all deterrence is rationality amongst all players. To eliminate GMD would require an assumption of rationality from all current and would be nuclear powers⁸⁰. Iran and North Korea may behave rationally, but are their underlying grand strategies equally rational? Henry Kissinger identified that communicating suicidal tendencies has a rational role for weaker powers⁸¹. US policy makers would be betting the lives of hundreds of thousands of Americans on the rationality of the current and any future North Korean dictator. The number of interceptors, rather than the program itself, is the most likely mechanism to adjust China's possibly negative perspective. A shift of funds from

operational interceptors to more robust testing could be reassuring for both the United States and China.

Finally ASB, or, rather, the proposed targeting scheme from CSBA, must be reappraised from a nuclear deterrence perspective. A fair assumption on the part of China is that should the US utilize the thousands of strike fighters and bombers being justified, in part, to support the ASB concept their command and control elements will be targeted to isolate them from their deployed forces or destroyed completely⁸². That these C2 elements might also control China's nuclear deterrence cannot be ignored. Even should the United States adopt a clearly limited strategy, this does not mean that the Chinese fear of India or Russia taking advantage of their weakness is removed. We must see the targeting of high level C2 elements in China as a nuclear level provocation and treat it as such.

Thus far China has eschewed meaningful participation in strategic arms limitation talks⁸³. Two of its three largest threats, Russia and the United States, are providing a free ride for China as current strategic arms treaties demand openness and verification of nuclear capabilities⁸⁴. China knows what each has with nothing given up on their part. In the face of a growing American capability, this will not change. Should the US wish to entice the Chinese to a more open nuclear posture all aspects of our nuclear deterrence, even those which we do not consider a nuclear threat to China, must be part of the discussion. Whether we say it or believe it, GMD and ASB, as well as civil defense and, of course, our nuclear TRIAD all pose legitimate threats to Chinese nuclear deterrence. As Sun Tzu reminds us, "If you besiege an army, you must leave an outlet⁸⁵." We must likewise be aware of the pressure we exert on China's nuclear deterrence and leave an outlet if we wish to duplicate the successful deterrence we enjoyed in the Cold War in a twenty first century multi-polar nuclear environment.

¹ David B. Myers, *New Soviet Thinking and US Nuclear Policy*, (Philadelphia: Temple University Press, 1990), 69.

² Peng Guangqian and Yao Youzhi, eds, *The Science of Military Strategy*, (Beijing: Military Science Publishing House, 2005), 16.

³ JFC Fuller, *The Conduct of war, 1789-1961*, (Rutgers, NJ: Rutgers University Press, 1968), 240.

⁴ Bernard Brodie, *Strategy in the Missile Age*, (Princeton, Princeton University Press 1959), 73.

⁵ Giulio Douhet, *The Command of the Air*, (Washington DC: Air Force History and Museums Program, 1998), 25.

⁶ Michael Sherry, *The Rise of American Air Power*, (New York: Vail Ballou Press, Inc. , 1987) 30.

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- ⁷ Thomas Greer, *The Development of Air Doctrine in the Army Air Arm 1917-1941*, (Alabama: Research Studies Institute, Air University, 1955), 115.
- ⁸ James Parton, *Air Force Spoken Here; General Ira Eaker and the Command of the Air*, (Alabama: Air University Press, 2000), 328.
- ⁹ Thomas Greer, *The Development of Air Doctrine in the Army Air Arm 1917-1941*, 117.
- ¹⁰ H.H. Arnold, "Airpower for Peace", *National Geographic Magazine*, February 1946.
- ¹¹ Bernard C. Nalty, *Winged Shield, Winged Sword, History of the US Air Force Volume 2*, (Alabama: Air University Press, 1997), 373.
- ¹² B. Bruce Briggs, *The Shield of Faith; Strategic Defense from Zeppelins to Star Wars*, (New York: Touchstone, 1988), 412.
- ¹³ Bernard Brodie, *Strategy in the Missile Age*, 73
- ¹⁴ Carl von Clausewitz, *On War*, (Princeton: Princeton University Press, 1976), 85.
- ¹⁵¹⁵ David M. Kunsman and Douglas B. Lawson, *A Primer on US Strategic Nuclear Policy*, (Albuquerque: Sandia National Laboratories, 2001), 23.
- ¹⁶ Ibid, 23.
- ¹⁷ Herman Kahn, *On Thermonuclear War*, (Princeton: Princeton University Press, 1960), 32.
- ¹⁸ Samuel Huntington, *The Common Defense; Strategic Programs in National Politics*, (New York: University Press, 1961), 122.
- ¹⁹ B. Bruce Briggs, *The Shield of Faith; Strategic Defense from Zeppelins to Star Wars*, 310.
- ²⁰ Stephen Cimbala, *Nuclear Weapons and Strategy; US Nuclear Policy for the 21st Century*, (London: Routledge, 2005), 12.
- ²¹ Richard Burt, *Arms control and Defense Postures in the 1980s*, (Boulder: West View Press Inc., 1982), 177.
- ²² "Nuclear war was therefore tantamount to mutual suicide. Many scholars believe that the nuclear stalemate helped prevent conflict between the superpowers during the Cold War, and that it remains a powerful force for great power peace today." (Waltz, Jervis, Et Al) Keir Lieber and Daryl Press, "The End of MAD; The Nuclear Dimension of US Primacy", *International Security* Vol 30, No 4, Spring 2006, 7-44.
- ²³ Peng Guangqian and Yao Youzhi (editors), *The Science of Military Strategy*, 104.
- ²⁴ Henry Kissinger, *Nuclear Weapons and Foreign Policy*, (New York: Council on Foreign Relations, 1957), 331.
- ²⁵ Peng Guangqian and Yao Youzhi (editors), *The Science of Military Strategy*, 14.
- ²⁶ Ibid, 68.
- ²⁷ Gregory Kulacki, "Chickens Talking With Ducks: The US-Chinese Nuclear Dialogue" Arms Control Association, October 2011.
- ²⁸ Defense Intelligence Agency, *Defense Intelligence Agency Annual Threat Assessment, Statement Before Senate Armed Services Committee*, 18 April 2013, Page 17
- ²⁹ Thomas Grinter, Speech given at UNC-Chapel Hill, October 2013. "No Operational MIRVs nor sea based or air based nuclear capability"
- ³⁰ Miles Yu, "Inside china: Nuclear Submarines Capable of Widespread Attack on US." *Washington Times*, 31 October 2013.
- ³¹ Gregory Kulacki, "Chickens Talking With Ducks: The US-Chinese Nuclear Dialogue."

³² Thomas Grinter, Speech given an UNC-Chapel Hill, October 2013 “ A Retired Soviet General states there are 1600-1800 warheads are in the Chinese Inventory.”

³³ Peng Guangqian and Yao Youzhi (editors), *The Science of Military Strategy*, 17

³⁴ Thomas Grinter, Speech given an UNC-Chapel Hill, October 2013. “General Zu Chang Hu in 2005 said, ‘China would have no choice but to respond with nuclear weapons to a nuclear or conventional intervention vis a vis Taiwan.’”

³⁵ Bernard Brodie, *Strategy in the Missile Age*, 80.

³⁶ Missile Defense Agency, *Missile Defense; The First Seventy Years*, 8 August 2013, <http://www.mda.mil/global/documents/pdf/first70.pdf>, accessed 15 January 2014, 1.

³⁷ Ibid, 1.

³⁸ Ibid, 7.

³⁹ “Intercontinental Ballistic Missiles”, <http://www.fas.org/nuke/intro/missile/icbm.htm>. Accessed 20 February 2014.

⁴⁰ The System” <http://www.mda.mil/system/system.html>. Accessed 25 February 2014.

⁴¹ B. Bruce Briggs, *The Shield of Faith; Strategic Defense from Zeppelins to Star Wars*, 141.

⁴² Missile Defense Agency, *Missile Defense; The First Seventy Years*, 9.

⁴³ Ibid, 10.

⁴⁴ Ibid, 10.

⁴⁵ Richard Burt, *Arms control and Defense Postures in the 1980s*, 163.

⁴⁶ B. Bruce Briggs, *The Shield of Faith; Strategic Defense from Zeppelins to Star Wars*, 187.

⁴⁷ Richard Burt, *Arms control and Defense Postures in the 1980s*, 104.

⁴⁸ Ibid, 105.

⁴⁹ Missile Defense Agency, *Missile Defense; The First Seventy Years*

⁵⁰ Ibid

⁵¹ Sharon Ghamari-Tabrizi, “Dr Strangelove” <http://www.visual-memory.co.uk/amk/doc/0097.html> accessed 23 February 2014.

⁵² Herman Kahn, *On Thermonuclear War*, 19.

⁵³ Peter Paret, *Makers of Modern Strategy from Machiavelli to the Nuclear Age*, (Princeton: Princeton University Press, 1986), 770.

⁵⁴ David M. Kunsman and Douglas B. Lawson. *A Primer on US Strategic Nuclear Policy*, 87.

⁵⁵ Robert A. Pape, *Bombing to Win; Airpower and Coercion in War*, (Ithaca, NY: Cornell University Press, 1996), 38.

⁵⁶ Rosemary J. Foot, “Nuclear coercion and the Ending of the Korean Conflict”, *International Security*, Vol 13 No 3 (Winter, 1988-1989) 92-112

⁵⁷ Ibid

⁵⁸ Richard Burt, *Arms Control and Defense Postures in the 1980s*, 104.

⁵⁹ Thomas Grinter, Speech given an UNC-Chapel Hill, October 2013

⁶⁰ Bradley Graham, *Hit to Kill*, (New York: Public Affairs, 2001), 176.

⁶¹ *Missile Defense: The First Seventy Years*, 20.

⁶² US DOD Ballistic Missile Defense Review Fact Sheet, March 3, 2010.

⁶³ National Science and Technology Council, “Committee on Homeland and National Security, Subcommittee on Standards, A National Strategy for CBRNE Standards”, May 2011

http://www.whitehouse.gov/sites/default/files/microsites/ostp/chns_cbrne_standards_final_24_aug_11.pdf accessed, 23 February 2014.

⁶⁴ “National Guard Homeland Response Force, What is it?”

<http://www.nationalguard.mil/features/ngps/2012/Homeland%20Response%20Force%20ORF%20ARNG%2014FEB11.pdf> accessed 20 February 2014.

⁶⁵ B. Bruce Briggs, *The Shield of Faith; Strategic Defense from Zeppelins to Star Wars*, 398.

⁶⁶ Jan Van Tol, Mark Gunzinger, Andrew Krepinevich, Jim Thomas, “Air Sea Battle” May 18 2010 <http://www.csbaonline.org/publications/2010/05/airsea-battle-concept/> accessed 25 February 2014

⁶⁷ NPR 2001 defined a new “TRIAD” which included conventional strike, missile defense as well as nuclear strike. James Wirtz and Jeffrey Larson, Editors, *Nuclear Transformation, the New US Nuclear Doctrine*. (New York: Palgrave Macmillan, 2005), 126.

⁶⁸ Jan Van Tol, Mark Gunzinger, Andrew Krepinevich, Jim Thomas, “Air Sea Battle”

⁶⁹ Bradley Graham, *Hit to Kill*, 173.

⁷⁰ Thomas J. Christensen, “The Meaning of the Nuclear Evolution, China’s Strategic modernization and US-China Security Relations”, *The Journal of Strategic Studies*, Vol. 35 No. 4 August 2012, 447-487.

⁷¹ Eleni Ekmektsioglou and Matthew Hallex, “Chinese Submarines and U.S. Anti-Submarine Warfare Capabilities”, August 27th, 2011. *E International Relations*. <http://www.e-ir.info/2011/08/27/the-undersea-balance-in-the-western-pacific-chinese-submarines-and-u-s-anti-submarine-warfare-capabilities/> Accessed 20 February 2014.

⁷² Bill Gertz, “China Conducts First Test of New Ultra High Speed Missile Vehicle”, *Washington Free Beacon* January 13, 2014 <http://freebeacon.com/china-conducts-first-test-of-new-ultra-high-speed-missile-vehicle/> accessed 13 January 2014.

⁷³ Thomas J. Christensen, “The Meaning of the Nuclear Evolution, China’s Strategic modernization and US-China Security Relations”.

⁷⁴ James Wirtz and Jeffrey Larson, Editors, *Nuclear Transformation, The New US Nuclear Doctrine*, 154.

⁷⁵ Thomas J. Christensen, “The Meaning of the Nuclear Evolution, China’s Strategic modernization and US-China Security Relations”.

⁷⁶ *Ibid.*

⁷⁷ Brahma Chellaney, “China’s Creeping Cabbage Strategy”, 1Dec 2013, <http://www.taipetimes.com/News/editorials/archives/2013/12/01/2003578036/2>, accessed 14 Dec 2013.

⁷⁸ National Science and Technology Council, Committee on Homeland and National Security, Subcommittee on Standards, “A National Strategy for CBRNE Standards”.

⁷⁹ Bradley Graham, *Hit to Kill*, xxvi.

⁸⁰ Henry Kissinger, *Nuclear Weapons and Foreign Policy*, 128.

⁸¹ Ibid. 173

⁸² Thomas J. Christensen, "The Meaning of the Nuclear Evolution, China's Strategic modernization and US-China Security Relations".

⁸³ Ibid.

⁸⁴ Gregory Kulacki, "Chickens Talking With Ducks: The US-Chinese Nuclear Dialogue".

⁸⁵ Sun Tzu, *The Art of War*, Trans. Ralph D. Sawyer, (New York: Barnes and Noble, 1994), 117.