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JOINTNESS and AEROSPACE POWER

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The 17th International Air Strategy Symposium

Airpower and Extended Deterrence for the United States and Korea

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INTRODUCTION

It is my distinct privilege to be here with you at the Korea Air University for this 17th symposium on Air and Space Power to Stabilize the Security of the Korean Peninsula. I have a deep and abiding personal connection to Korea; three generations of my family have served and sacrificed in the cause of our mutual defense.

My Uncle, Staff Sergeant James R. Sanders, Jr., was a radioman on a B-29 that was shot down over North Korea on 10 November 1950. Attacked by at least six enemy fighters, the aircraft was shot down at 1147 hours. Eleven parachutes were observed just before the B29 crashed enroute to its target, Uiju, just South of the Yalu River. My uncle survived his parachute landing, was captured north of the Yalu and taken to Prison Camp 5 at Pyoktong, where he died in captivity from the effects of malnutrition and dysentery in the summer of 1951. His remains were repatriated in 1954 under Operation Glory and he now rests at Arlington National Cemetery. My father served here as a sergeant in the combat engineers during the Korean Conflict and my younger brother was a Military Police Sergeant who served in the Joint Security Area in the 1980s.

When I was in the United States Army I spent many weeks here during Exercise Team Spirit in 1986 and, as a scholar at the Center for Strategic and International Studies in the 1990s I participated in several seminars with South Korean colleagues both in Washington and here in the ROK where I witnessed the profound and robust growth of the South Korean economy. So it is within that great tradition that I stand here with you to advance our mutual understanding of how the United States and the Republic of Korea might bring greater strategic stability to this part of the world through the application of air and space power to the 21st century challenges and opportunities of extended deterrence.

I realize that my remarks here are on the record. But let me emphasize that I do not speak on behalf of the US Government, the Department of Defense or the United States Air Force. These are my personal views and should not be taken to form official policy.

Let me tell you up front what the thesis of this presentation is. I am persuaded that the most effective means for the United States to credibly extend its umbrella of deterrence over the Republic of Korea is by means of airpower. I will develop the case for this conclusion over the course of the next half-hour or so, and then will welcome your questions, and perhaps arguments, in response.

I propose to do that in three stages – a discussion of fundamentals, a case study, then applications. Our discussion of fundamentals will cover the essentials of US deterrence policy and strategy, the basic nature of deterrence, as well as a review of the fundamentals of airpower. The case study will illustrate the complexities of Extended Deterrence in the 21st century. I will conclude with some practical suggestions for projects and tasks that might be explored within the Extended Deterrence Policy Committee for future implementation.

FUNDAMENTALS

Policy and Strategy

The 2010 National Security Strategy identifies “no greater threat” than that posed by “weapons of mass destruction, particularly the danger posed by the pursuit of nuclear weapons by violent extremists and their proliferation to additional states.” Recognizing such risks across the decades, every U.S. president of the nuclear age has clearly declared the intent of the United States to maintain nuclear weapons capabilities and to sustain the credibility of their employment if necessary. In a key speech to the Czech Republic in April 2009, in the context of the pursuit of the long term goal of less reliance on nuclear weapons in our national security, President Obama steadfastly affirmed, “Make no mistake: as long as these weapons exist, the United States will maintain a safe, secure and effective arsenal to deter any adversary, and guarantee that defense to our allies.”

The United States remains the world's preeminent power in our new "multi-nodal" world. Rising economic powers with burgeoning modern militaries strive for greater influence to bring change to regional security status quo. Nuclear proliferation has been on the rise. Now all of us must adapt. The environment and related deterrence calculus will change as a result of lower numbers of nuclear weapons and adversaries may arrive at conclusions we don't expect ... and so might our allies and partners. We fully expect that as the number of weapons or delivery systems decrease, the intrinsic value of each remaining platform will increase. We are entering an environment without historical precedent -- low numbers, in a non-bipolar world.

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The United States and the Republic of Korea have an enduring security relationship. The 1953 Mutual Defense Treaty declares that an armed attack on one would be dangerous to the peace and safety of both, declaring their intent to act to meet the common danger.¹

That danger is manifest in that North Korean forces have a substantial numerical advantage over the South (around 2 to 1) in several key categories of offensive weapons. In May 2010, the United States re-certified North Korea as “not cooperating fully” with U.S. counterterrorism efforts. In March (2005), the D.P.R.K. said it would no longer be bound by its voluntary moratorium on ballistic missile launches, and declared itself a nuclear weapons state. On July 4-5, 2006 the D.P.R.K. launched seven ballistic missiles, including six short- and medium-range missiles and one of possible intercontinental range. On October 9, 2006, North Korea announced the successful test of a nuclear explosive device, verified by the United States on October 11. On April 5, 2009, the D.P.R.K. launched a Taepo Dong-2 missile over the Sea of Japan, in violation of UN Security Council Resolution 1718. On May 25, 2009, the D.P.R.K. announced that it had conducted a second test of a nuclear explosive device. On July 3-4, 2009, the D.P.R.K. fired a series of short-range ballistic missiles into the Sea of Japan. On October 12, 2009, the D.P.R.K. launched additional multiple short-range ballistic missiles. The D.P.R.K.’s sinking of the R.O.K. naval vessel Cheonan on March 26, 2010 and its shelling of Yeonpyong Island on November 23, 2010 have diminished the prospects for talks to resolve the issues surrounding the D.P.R.K.’s nuclear program. Secretary of State Hillary Clinton has called on North Korea to take concrete, irreversible denuclearization steps.²

Presidents Obama and Lee advanced the US-ROK relationship at their June 2009 summit when they addressed security:

The Alliance is adapting to changes in the 21st Century security environment. We will maintain a robust defense posture, backed by allied capabilities which support both nations' security interests. The continuing commitment of extended deterrence, including the U.S. nuclear umbrella, reinforces this assurance³.

As you all should know, the United States has embarked on a path to a nuclear force posture for the 21st century that continues to pose a threat of devastating consequences. The 2010 Nuclear Posture review makes this clear:

¹ Mutual Defense Treaty between the Republic of Korea and the United States of America, Entered into Force: November 17, 1954 Article 3, http://www.koreaembassyusa.org/bilateral/military/eng_military4.asp

² <http://www.state.gov/r/pa/ei/bgn/2792.htm>

³ http://www.whitehouse.gov/the_press_office/Joint-vision-for-the-alliance-of-the-United-States-of-America-and-the-Republic-of-Korea/

“In the case of...states that possess nuclear weapons and states not in compliance with their nuclear non-proliferation obligations – there remains a narrow range of contingencies in which U.S. nuclear weapons may still play a role in deterring a conventional or CBW attack against the United States or its allies and partners.”⁴

The U.S. military implements those strategies and policies in close cooperation with our Allies, as declared by the Department of Defense and the Chairman of the Joint Chiefs of Staff:

To reinforce U.S. commitments to our allies and partners, we will consult closely with them on new, tailored, regional deterrence architectures that combine our forward presence, relevant conventional capabilities (including missile defenses), and continued commitment to extend our nuclear deterrent.⁵ ...we must continue to prevent and deter conflict in strategically important regions, including those involving Iran and North Korea.⁶

Analysts warn of the growing need to deter North Korea from using weapons of mass destruction in future conflicts and crises⁷.

The Fundamentals of Deterrence

The deterrent value of nuclear weapons is inherent in the terrible nature of the destruction they can cause. *Joint Publication 1-02* (JP1-02) defines deterrence as: “...the prevention from action by fear of the consequences...a state of mind brought about by the existence of a credible threat of unacceptable counteraction.” This definition remains relevant for the 21st century.

One of the impenetrable basics of deterrence is the fundamental paradox that nuclear weapons exist in order never to be used. The reason for this paradox is in the basic physics of nuclear weapons. These things are not, as many have asserted, sub-sets of “kinetic” military capabilities. While nuclear weapons are distinct from “non-kinetic” capabilities such as those in the cyber and space domains, nuclear weapons are certainly not simply more powerful forms of classic firepower. Indeed the kinetic energy of a nuclear explosion, while orders of magnitude more powerful than that of an equivalent mass in a conventional weapon, is typically no more than half the total energy output of a nuclear device. The other half is distributed over thermal and radiation effects that no

⁴ United States Department of Defense, *Nuclear Posture Review Report*, April 2010 p. 16.

⁵ United States Department of Defense, *Quadrennial Defense Review Report*, February 2010, p. 14.

⁶ “Chairman’s Assessment,” *Ibid.*, p.128.

⁷ Bruce W. Bennett, “Deterring North Korea from Using WMD in Future Conflicts and Crises,” in *Tailored Deterrence: Influencing States and Groups of Concern*, Edited by Barry Schneider and Patrick Ellis, USAF Counterproliferation Center, Maxwell Air Force Base, Alabama, May 2011, pp. 157-196.

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Indeed, US Strategic Command's *Deterrence Operations Joint Operational Concept* (DO JOC) provides the framework for understanding how deterrence works:

"Deterrence operations convince adversaries not to take actions that threaten US vital interests by means of decisive influence over their decision-making." It suggests to planners they can achieve decisive influence by credibly threatening to impose costs, deny benefits and/or encourage restraint.

Deterrence is a psychological phenomenon, it happens in the mind of the one whom you intend to deter. Assurance is also a psychological phenomenon, it occurs in the minds of those whom you seek to assure. Deterrence and Extended Deterrence as military operations thus occur in the cognitive domain of war. When he served as Director, Force Transformation in the Office of the Secretary of Defense, Rear Admiral Art Cebrowski asserted that wars are won or lost in the cognitive, rather than in the physical, domain⁸. By this he meant that the information revolution has ushered in a new era in which mastery of the physical domain of war is no longer sufficient. His thinking on this is most applicable to the problem of deterrence in the 21st century where we must develop military campaigns to deter the use of nuclear weapons by a variety of potential adversaries.

Complexity of 21st Century Deterrence

There are four global trends making 21st century deterrence very different than that of the 20th century⁹.

1. *We live in a multi-polar nuclear world.* There are now multiple nuclear-armed states. This multi-polar nuclear world will function systemically more like a balance-of-power world.
2. *We also now live in a proliferated nuclear world,* where lesser nuclear states and non-states add increased risk of catalytic effects. Defiant proliferators, such as North Korea, seek nuclear weapons not to deter but to employ. They are more risk-acceptant than responsible nuclear-armed states, more likely to use them first use, more likely to use all they have, and more likely to provoke their use by others¹⁰.

⁸ CDR Phillip G. Pattee, USN, Retired, "Network-Centric Operations: A Need for Adaptation and Efficiency," *Air and Space Power Journal*, Spring 2008, Vol. XXIII No. 1, pp. 24-30.
<http://www.airpower.maxwell.af.mil/airchronicles/apj/apj08/spr08/pattee.html>

⁹ This section draws from: James Blackwell, "Deterrence at the Operational Level of War," *Strategic Studies Quarterly*, Summer 2011 Vol. 5, No.2., pp. 30-51.

¹⁰ Andrew J. Coe and Victor A. Utgoff: "Understanding Conflicts in a More Proliferated World," Institute for Defense Analyses, report # P-4426, December 2008.

3. *The behavioral model of deterrence will predominate* in this more complex global system. Cold War deterrence was built on the rational actor model. The rational actor model emphasizes the intellectual nature of deterrence. It holds that no matter what the cultural or emotional makeup of an adversary, the threat of use of nuclear weapons by an opponent resulting in sure destruction of the other would be so risky that no one, no matter what their individual behavioral attributes or institutional decision-making processes might be, would ever conclude they could prevail in such an ultimate nuclear contest.

In contrast, the Behavioral School emphasizes the cognitive nature of deterrence as applied to individuals, groups, organizations and nations. Field research by certain behavioral scientists suggests that humans, perhaps regardless of culture, make decisions based on a few common heuristics that enable decision making that is fast enough to avoid falling prey to other species, and sufficiently frugal in terms of exploiting the cognitive capacity of the human brain, to seek and absorb only enough information necessary to make the decisions at hand.

The reality of the growing complexity of deterrence means that we have much to gain from deeper understanding of how to apply the behavioral approach to deterrence operations.

4. *Deterrence now crosses over multiple domains of war.* Emerging domains of war – Cyber and Space – combined with the increasing contributions of traditional domains – conventional and especially missile defenses -- are contributing an increasing measure of complexity to the challenge of deterring future adversaries. Attacks against space assets, with the intent to blind or dazzle for tactical or operational effect, may be perceived as precursors to broader and deeper strategic attacks. Computer Network Attacks may have huge unintended consequences for the entire global system. And new conventional capabilities may have far-reaching deterrent effects. Some assert that missile defenses will reduce the need for non-strategic nuclear capabilities. And there is an emerging debate on the deterrent value of conventionally-armed intercontinental missiles that would perhaps fly a ballistic trajectory for part of its path then shift to a more maneuverable path on reentry¹¹. Such complex escalation and deterrence relationships heighten the potential for misperceptions and increase the risks of unleashing catalytic escalation forces.

There have been many debates in the US on the value of conventional deterrence. Indeed, the Nuclear Posture Review sets us on a path to zero nuclear weapons in part based on the belief that conventional means may one day fully substitute for nuclear weapons. Empirical research suggests that conventional deterrence might work about half the time. Surely our 4,000 years of human history with conventional warfare -- compared to the 65 or so we have had with nuclear weapons -- can teach us something empirically about the efficacy of conventional deterrence.

¹¹ Bruce Sugden, "Speed Kills: Analyzing the Deployment of Conventional Ballistic Missiles," *International Security* Vol. 34 No.1., Summer 2009, pp. 113-146.

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In this milieu, Herman Kahn's classic ladder of escalation¹² is less helpful as a mental model of how deterrence works. In a bipolar world, escalation was linear. Now, escalation can function across many dimensions, not limited to the nuclear escalation ladder. In the multi-polar, proliferated nuclear world, deterrence exists across at least four domains simultaneously – conventional, nuclear, cyber, and space. Dr Chris Yeaw, Air Force Global Strike Command's Chief Scientist, has likened this to a vortex in which each side could escalate or de-escalate simultaneously across multiple domains and even jump from one ladder to another, making crisis management and escalation control much more complicated.

Attributes of Deterrence Capabilities

Because deterrence resides mainly in this cognitive domain, defense planners should focus on developing the key attributes of military capabilities that will contribute to the stability of global and regional military balances. For the Cold War those capabilities were developed and assessed in terms of their military utility, generally assessed in terms of their effects on particular target sets. But in the 21st century, the kind of tailored deterrence needed to dissuade a disparate set of potential adversaries and to assure a wide range of allies and partners will require an array of nuclear and non-nuclear military capabilities.

Different opponents in differing contexts will attribute their own assessments of the credibility of our deterrent threats. They will judge the credibility of our threats, whether implicit or declaratory, based on their own calculations of our capabilities and their, perhaps idiosyncratic, perceptions of our intentions. When we convey a deterrent threat we cannot afford to bluff, nor can we afford to be perceived as bluffing. Because the 21st century is a multi-polar, proliferated nuclear world the size of our force is less important than its broader attributes. The key characteristics of our force posture will be *flexibility* and *resilience*. By "flexible" I mean that the US must have a variety of nuclear means to pose threats to several types of opponents – peers, near-peers, medium nuclear powers, defiant proliferators and non-states. By "resilient" I mean the capability to adapt the deterrent capability to changes in the nature of the opponents especially in crises and conflicts characterized by shifting coalitions among adversaries and partners. As Dr. Keith Payne recently put it:

"As we move forward for arms control purposes to reduced numbers of nuclear launchers and warheads, our priority for credible deterrence should be to preserve as much flexibility and resilience as is possible given the reductions mandated. As numbers decline, the force structure allowed needs to be

¹² Herman Kahn. *On Escalation*. New York: Pelican Books, p. 39.

optimized for flexibility and resilience to avoid the degradation of deterrence that a smaller force may otherwise cause¹³.

Fundamentals of Airpower and Nuclear Operations

I.B. Holley, one of the preeminent scholars on airpower, has observed in an article on the Search for Airpower Theory, how he was struck by the unsystematic, undisciplined thinking that all too often characterized the writings of the “theorists” described.”¹⁴ So, as we explore how Airpower contributes to extended deterrence, let us stick to the proven fundamentals as articulated in Air Force Doctrine Document 1 (AFDD 1), *Air Force Basic Doctrine*¹⁵. Reflecting specific historical lessons of air and space operations, AFDD 1 sets forth seven tenets of airpower, all of which apply to deterrence operations. The success of any military operation depends on air, space and cyber superiority. This is as true for deterrence as it is for close air support. But the most relevant tenet is that air and space power is flexible and versatile. Air and space power is flexible in that it can be shifted among objectives and locations quickly for decisive effect. Versatility refers to the fact that air and space power can be applied at any level of warfare across the global commons: “Air and space forces, unlike other military forces, have the potential to achieve...unmatched synergy through asymmetric and parallel operations.”¹⁶

Remarkably, only the United States Air Force has a published doctrine for Nuclear Deterrence Operations¹⁷. There is no Navy or Joint doctrinal publication covering this subject. In AFDD 3-72, there are two important elements for our consideration on extended deterrence for Korea. First, the decision to employ nuclear weapons is a political one, retained by civilian leadership of a true democracy¹⁸. This means that nuclear command and control procedures and systems are different than those for non-nuclear military capabilities and demand specialized training, equipment and constraints. Second, nuclear forces are not organized by component as they are for conventional forces. Nuclear forces are not under a Component Commander, rather they are functionally organized under a Combatant Commander, typically by Joint Task Force¹⁹. Of course, ROK Armed Forces are already experts at the complexities of US command

¹³ Keith B. Payne, “Maintaining Flexible and Resilient Capabilities for Nuclear Deterrence,” *Strategic Studies Quarterly*, Summer 2011 Vol. 5, No. 2, p. 26.

¹⁴ *The Paths of Heaven: The Evolution of Airpower Theory* School of Advanced Airpower Studies, Edited by Col Phillip S. Meilinger. Maxwell AFB, Alabama: Air University Press, 1997, Chapter 15. “reflections on the Search for Airpower Theory,” Dr. I.B. Holley, pp. 579-599.

¹⁵ United States Air Force, Air University Curtis E. Lemay Center for Doctrine Development and Education, *Air Force Basic Doctrine*, Air Force Doctrine Document 1, 17 November, 2003, pp.27-33.

¹⁶ AFDD 1, p. 30.

¹⁷ James Schlesinger, Chairman, Secretary of Defense Task Force on DoD Nuclear Weapons Management. *Phase II: review of the DoD Nuclear Mission*, December 2008, pp. 66-67.

¹⁸ United States Air Force, Air University Curtis E. Lemay Center for Doctrine Development and Education, *Nuclear Operations*, Air Force Doctrine Document 3-72, 7 May, 2009, p. 3.

¹⁹ AFDD 3-72, pp. 5, 12, 16, 18, 22.

relationships, especially those of a multi-“hatted” Sub-Unified Command. What this means is that deterrence operations will be planned and executed by means not generally implemented by conventional forces. Those who conduct deterrence operations must become well versed not only in the doctrines, but also in the specialized tactics, techniques and procedures.

A Case Study in the Fundamentals: Operation Paul Bunyan

The application of air power to extended deterrence is not alien to the Korean Peninsula. On August 18, 1976, while supervising the pruning of a giant poplar tree in the Joint Security Area of the Korean Demilitarized Zone, two American Army officers were murdered by North Korean soldiers. In the resulting crisis, US and ROK objectives in response were to counter the North Korean actions, defend against North Korea doing anything worse, deter future hostile actions, punish North Korea, avoid provocation and thus incentives to escalate, and then to end the crisis. There was also a shared perception that the situation was dangerous and could easily escalate into a major military confrontation.

In order to resolve the crisis in a subsequent attempt to remove the tree, the Washington Special Action Group (WSAG) convened on August 19. This particular body was a small circle of the President's closest national security advisers first formed during the Yom Kippur War of 1973. It generally consisted of the Secretary of Defense, Secretary of State, Chairman of the Joint Chiefs of Staff, Director Central Intelligence and the National Security Adviser to the President. The WSAG approved a plan prepared by the Joint Staff to deploy an F-4 squadron for air superiority, an F-111 squadron for air interdiction, to cover the battalion-sized ground force that was to enter the Joint Security Area and cut down the tree.

In order to provide theater and strategic deterrence against any attempt by the North Koreans, Chinese or Russians, as well as to reassure our South Korean allies of our determination to see this mission through no matter what the various potential adversaries might do, the WSAG also approved additional measures. The alert status of all USFK units was advanced. The carrier Midway was ordered to move from its Japanese port to the Straits of Korea. And nuclear capable strategic aircraft were also to deploy, including 3 B-52s from Guam to Korea as a show of force. The Task Force was to enter the Joint Security Area at 0700 on Saturday August 21 Korea time, 1800 Friday Washington time.

In an exquisitely timed operation, the B-52s arrived from Guam over a Korea training area at 0645 Friday, escorted by USAF F4s and ROKAF F5s with flight paths to make their presence visible but sufficiently far from the DMZ to remain non-provocative. The tree and several offending road barriers were removed by 0745 and the work party departed by 0826 unopposed. The outcome of this demonstration of US will, resolve and capability exceeded expectations; the North Koreans discontinued their hostile acts in the JSA and along the DMZ, and North Korean political influence manifestly receded.

The North Korean government publicly called the incident regretful, and diplomatically ratified new procedures for the JSA that improved the physical security of US forces.²⁰

Since 2004 the United States has maintained a continuous presence of bombers in the Pacific region by rotating B-52s and B-2s from CONUS bases to Anderson Air Force Base, Guam. From Guam these nuclear-capable aircraft, supported by tankers and ISR aircraft, conduct training and other theater support missions to demonstrate the continuing resolve of the United States and its allies in the Pacific.

The U.S. has begun to develop a new long-range penetrating bomber and air-launched stand-off capability that will provide survivable, flexible capabilities -- including nuclear capabilities -- that can be postured to hold any target on the globe at risk within hours. The bomber will be one part of a family of long range strike systems that includes intelligence, surveillance, and reconnaissance; electronic attack; communications; command and control and other capabilities.

THE 1973 YOM KIPPUR WAR: A CASE STUDY IN EXTENDED DETERRENCE²¹

Eleven years after the United States and the Soviet Union stepped back from the brink of global nuclear war in the Cuban Missile Crisis, the Arab-Israeli conflict of 1973 incited a conflagration that threatened the world again with nuclear conflict. Only this time the crisis was complicated by the engagement of multiple allies of both nuclear super powers, one of whom was itself a nuclear armed state. The Yom Kippur War was a harbinger of the complexities of 21st century deterrence, extended deterrence and assurance in a multi-polar, proliferated nuclear world. It provides important insights

²⁰ Richard G. Head, Frisco W. Short and Robert C. McFarlane, *Crisis Resolution: Presidential Decision Making in the Mayaguez and Korean Confrontations*, Boulder Colorado, 1978: Westview Press, pp.149-215.

²¹ Except as noted, this analysis is based on: Barry M. Blechman and Douglas M. Hart, "The Political Utility of Nuclear Weapons: The 1973 Middle East Crisis," *International Security*, Vol. 7, No. 1 (Summer, 1982), pp. 132-156; William B. Quandt, *Soviet Policy in the October 1973 War*. A report prepared for Office of Assistant Secretary of Defense/International Security Affairs, Santa Monica, CA: The Rand Corporation, R-1864-ISA, May 1976; Michael O. Wheeler and Kemper V. Gay, *Nuclear Weapons and the 1973 Middle East War*, The Center for National Security Negotiations Occasional Paper, Nuclear Lessons and Legacies Project Monograph #3, August 1996, with papers by: Yuval Ne'eman and Avner Cohen and with included references to: Richard Nixon, *The Memoirs of Richard Nixon*, (New York: Grosset & Dunlap, 1978; Henry Kissinger, *Years of Upheaval*, (Boston: Little, Brown and Company, 1982); Alexander M. Haig, Jr., with Charles McGarry, *Inner Circles: How America Changed the World* (New York: Warner Books, 1992); Anatoly Dobrynin, *In Confidence: Moscow's Ambassador to America's Six Cold War Presidents* (New York: Times Books, 1995); Victor Israelyan, *Inside the Kremlin During the Yom Kippur War* (The Pennsylvania State University Press, 1995); Janice Gross Stein, "Calculation, Miscalculation, and Conventional Deterrence I: The View from Cairo," and: "Calculation, Miscalculation, and Conventional Deterrence II: The View from Jerusalem," in: Robert Jervis, Richard Ned Lebow and Janice Gross Stein. *Psychology & Deterrence*, Baltimore: The Johns Hopkins University Press, 1985, pp. 34-88.

about the role of airpower in extended deterrence for the 21st century. Those insights are instructive about the way that extended deterrence will work in the 21st century between the Republic of Korea and the United States.

By 1973 the Soviets calculated that momentum in the correlation of forces had shifted measurably in their favor. They sensed an historic moment of opportunity when the embattled Nixon Administration struggled amidst multiple constitutional crises. Seminal events in the Watergate Affair and the War Powers Resolution in October 1973 gave the Soviets a perception of fundamental US political vulnerability, emboldening them to seize the moment presented by their Arab clients. The Syrian and Egyptian leaders in particular believed they were ready to redress their losses suffered at the hand of Israel and were itching for a fight to impose restitution for their losses in the 1967 War.

The Russians, and several of their allies, including the North Koreans, had already been deployed and engaged in combat operations in this theater prior to the outbreak of hostilities on October 6, 1973. During the so-called "War of Attrition" between Israel and Egypt between April 1969 and August 1970, Egypt staged commando raids and artillery bombardments across the Suez Canal and Israel conducted strikes on air defense and other military installations along the Canal and the Gulf of Suez. Nasser had secretly gone to Moscow in January 1970 to ask for more help and the Russians had deployed an expeditionary force of air defense missile batteries and several fighter squadrons. In the last days before the August 7, 1970 cease-fire, the Russian squadrons started a battle for air superiority over the Canal Zone and lost 6 combat aircraft in the air-to-air dogfights. After the cease fire, the Soviets permanently stationed air defense batteries and North Korean fighter squadrons around Cairo and Damascus. In May 1973 the Egyptians had come to fear Israeli air threats to Egyptian cities and had secured Russian agreement to deploy a large number of Mig-23 fighters and Scud missiles.

The first signs of the nascent crisis appeared on October 4, when, among other indicators, the Russians began evacuating families of their advisors from Egypt and Syria. Although they detected these signs, Israel did not mobilize that day. A previous mobilization under similar circumstances back in May 1973 proved to be a costly false alarm, although in fact Egypt and Syria had initiated an attack but called it off. Israel did order an alert just after midnight in the wee hours of October 6th, but they were not postured for the massive armored assault launched at 2:00 p.m. by Egypt and Syria.

Israeli losses the first 24 hours were staggering. By the 7th of October the Egyptians secured a bridgehead 10-15 miles into the Sinai and the Syrians had advanced to the Sea of Galilee. Israel had lost more than 500 tanks and 50 aircraft. Israel was threatened with being cut into pieces -- a strategic defeat on the scale of the German blitzkrieg of 1939-1940. Political leaders made desperate appeals to the United States for immediate resupply of ammunition, tanks, guns, planes and supplies, but U.S leaders were divided as to the amount, speed and means of US military aid and deliberated for several days.

The Defiant Proliferator

U.S. intelligence picked up indications on the 7th of October that Israel was making preparations associated with activating and arming its Jericho ballistic missiles. To this day analysts are divided as to Israeli intentions. Most surmise that it was nothing more ominous than prudent preparation by tactical level operators and technicians, perhaps directed by Defense Minister Moshe Dayan, in case the war continued to progress so badly that Israeli senior military and political leadership might order further steps. Such measures might range from evacuation of the missiles to demonstration deployment or launch. Others claim it was an Israeli bluff, in an attempt to blackmail the United States into accelerating the replacement of Israel's combat losses. A few, based on less credible evidence, assert more menacing intent by the US ally to take matters, however fatefully, into their own hands.

Whatever the Israelis were about to do, concerns on Israeli intentions hinted at looming superpower confrontation during the Washington Special Action Group deliberations of October 9th. Those concerns were perhaps magnified when the Israeli Air Forces broke through Syrian air defenses and executed significant strikes on Damascus, including bombing the Soviet Cultural Center. President Nixon, despite preoccupation with imminent Watergate revelations and the impending resignation of Vice President Agnew over tax evasion accusations, decided to begin to provide Israel with additional military aid. Decision-making delays continued until the President settled matters on the 12th with direction to conduct an immediate airlift to replace all Israeli losses, and then some, as quickly as possible.

By the time the US airlift operation, code-named *Nickel Grass*, got underway on the 13th, Russian air transports had already begun arriving in Egypt and Syria on the 12th and continued for 40 days, ultimately delivering 15,000 tons on 935 Antonov -12 and -22 aircraft on a 1700 mile air bridge from bases in the Soviet Union²². *Nickel Grass* soon made the Soviet airlift look like a minor-league operation. Within nine hours of the president's decision, the US Air Force had C-141s and C-5s ready to depart. Aerial ports of embarkation included 29 airfields in the continental United States and the US base at Ramstein, Germany²³. Daily departures from the Lajes stopover base in the Azores grew to 40²⁴.

The first C-5 landed at Lod airfield, Tel Aviv at 2201 (Z) on 14 October. Its 97 tons of 105mm artillery rounds were offloaded by hand and trucked immediately to the front. Offloaded materiel was at the Syrian front in 3 hours and in the Sinai in 10. The most impressive cargo brought in on C-5s was the heavy, out-sized equipment that no aircraft

²² Capt Chris J Krisinger, USAF, "Operation Nickel Grass: Airlift in Support of National Policy," *Airpower Journal*, Spring 1989, accessed 4 June 2011:

<http://www.au.af.mil/au/cadre/aspj/airchronicals/api/api89/spr89/krisinger.html>

²³ U.S. General Accounting Office, *Airlift Operations Of The Military Airlift Command During the 1973 Middle East War*, Report to Congress by the Comptroller General of the United States. LCD-75-204, April 16, 1975, pp. 43,45-47.

²⁴ Walter J. Boyne, "Nickel Grass," *Air Force Magazine*, December 1998, pp. 54-59.

other than the C-5 could move. The Soviets had nothing to compete with the capacity of the C-5 to deliver M-60 tanks, 155mm self-propelled howitzers, CH-53 helicopters and disassembled A-4E attack fighters.

The US effort started 4 days later than the Soviet airlift but it soon exceeded that of the Arab supplier's 12,500 tons²⁵, moving nearly 9,000 tons to Israel by October 23rd by US military airlift and another 5,500 tons via Israeli commercial aircraft²⁶. Both the Soviets and their Arab clients could calculate that the logistics momentum had already swung in the Israelis favor at about time the battlefield situation had begun to shift decisively away from the Arabs on the 14th.

More importantly, the battle for the cognitive domain shifted decisively to the Israelis on October 14th. That day, in full view of the media, one of the C-5s arriving at Lod offloaded an American M-60 tank that had been shipped from war stocks in Germany. No one had ever seen an airplane fly with a 60-ton tank on board. Everyone could count – the US had 77 C-5s in its fleet, and tens of thousands of tanks in its inventory – and reach the conclusion that Israel would within days have more than enough armored vehicles to replace its losses and then some. And that was the day that Israel, exploiting its advantage of interior lines, shifted an armored division from the Golan to the Sinai front.

The Soviets began to realize their gamble on their Arab clients was about to backfire on them.

When an Israeli air strike on the Syrian port of Tarsus sank a Russian merchant ship on October 12th, the Russians concluded the situation demanded a stronger response. Israeli tanks on the Syrian front were now no more than 25 miles from Damascus, apparently stalled only for a moment by the arrival of 3 rather incompetent Iraqi divisions. On the 14th the Egyptians failed miserably in attempt to extend their gains in the Sinai. It was in this phase that the North Korean fighter pilots, participating in the large furball that occurred over the Sinai, were soundly defeated²⁷.

Kosygin came to Cairo and issued instructions to a stubborn and irresponsible Sadat that the Soviets would not become a party to their war. On the 16th Israel launched its counterattack in the Sinai. Major General Ariel Sharon's tank division led the way back across the Suez Canal in a lightning move. Fearful of Israeli airpower despite early IAF losses, Sadat and Kosygin announced that Egyptian missiles would retaliate on Tel Aviv to any bombing of Egyptian cities. US intelligence discovered that Soviet Scuds had moved into the region accompanied by nuclear warheads. On the 17th IDF Chief of Staff General Eleazar ordered deployment of a Jericho missile battery with its warheads in plain view²⁸.

²⁵ Quandt, p. 25.

²⁶ GAO Report, p.i

²⁷ Tom Cooper & Brig.Gen. Ahmad Sadik, "Secret Helpers: 'Other' Arab Air Forces in 1973 War," accessed 4 June 2011: <http://www.group73historians.com/MSP.aspx?ThreadID=40>

²⁸ Ne'eman in Wheeler, pp. 5, 15.

Thus, when Kissinger was in discussions with the Soviets in Moscow on the 20th and the 21st, nuclear tensions in the conflict had begun to heighten. On the battlefield, Israeli planes had decimated the Iraqi divisions that stood as the only roadblock between the Israeli armored forces and Damascus. Sharon had fought two more divisions across the Suez Canal and the Israelis were encircling the 25,000 men of Egyptian Third Army now trapped on the eastern side of the Canal beyond its lines of communication and resupply.

Meanwhile in Washington, President Nixon on the 20th personally fired Watergate Special Prosecutor Archibald Cox who had issued a subpoena to compel Nixon to release secretly taped conversations related to the scandal. Nixon had ordered Attorney General Eliot Richardson to dismiss Cox, but Richardson resigned in protest rather than issue the president's directive. With this "Saturday Night Massacre," impeachment became a real political possibility.

Kissinger's talk had produced agreement with the Soviets on the terms of a cease-fire to be implemented by means of a UN Security Council Resolution. Under these terms the Israelis were not to complete the annihilation of the Egyptians trapped in the Sinai, nor to demand their surrender. They were to have 12 hours to stop the fighting in the Sinai and talk directly to the Egyptians to establish a just and durable peace in the Middle East. For their part, the Russians were to persuade the Arabs to stop fighting in place and negotiate implementation of UN Resolution 242 which had ended the 1967 War calling for withdrawal from occupied territory and recognition of the right of every State in the area to live in peace within secure and recognized boundaries.

The UN passed the cease fire resolution just after midnight, to take effect within 12 hours on the 22nd. The Syrians, having lost 1200 tanks and suffered 3500 killed, accepted the ceasefire terms. Sadat, accepted, saying that US tanks were rolling down ramps at Ben Gurion airport.

On the 22nd ...Kissinger left Israel believing that the end of the war was near and that with careful diplomacy in the weeks ahead the situation could be defused. The Israelis, on the other hand, thought that they had some time left to fulfill their military objectives. And the Soviets thought that Kissinger had taken them to the cleaners.²⁹

The Stability of the Central Nuclear Balance

But while the diplomats seemed to be working toward a de-escalation of the crisis, events on the battlefield were taking a different course. On the 21st the Egyptians had launched a cruise missile targeted at an Israeli urban center – that missile had been shot

²⁹ Blechman, p. 136

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down by the IAF before it hit³⁰. On the 22nd, with the approval of Soviet Defense Minister Grechko, apparently despite the protestations of other members of the Politburo, the Egyptians began firing their Russian-manned Scud missiles at the Israeli bridgehead across the Suez³¹. And US intelligence sensors in the Dardanelles picked up neutrons emitted from a passing Russian freighter on the 22nd,³² an almost certain indicator of the presence of nothing other than nuclear warheads.

During the 12-hour implementation time allowed by the UN Resolution on the 22nd, the Israelis continued to fight in the Sinai, moving quickly to try to complete the encirclement of Egyptian forces. The Soviets believed this was contrary to their understanding with Kissinger and decided to take stronger measures of their own. On the 23^d Brezhnev sent a hotline message to Nixon indicated he believed that Moscow felt betrayed and that the US had colluded with the Israelis³³.

On the 24th, Sadat, supported by the Soviets, appealed to both superpowers to impose a peacekeeping force between Israel and Egypt. Kissinger bluntly refused arguing that it would be dangerous for such superpower rivalry to be present on the ground in the region. He said the US would not accept any manner of Soviet troops on the ground there³⁴. But Dobrynin read a second Brezhnev message to Kissinger over the phone warning that if the US would not agree, the Soviets would send its troops unilaterally.

Throughout the crisis US intelligence had been tracking Soviet air and ship movements bringing arms and equipment to their clients in the Middle East. One movement was not quite consistent with movement of weapons and equipment, but seemed to indicate preparation for deployment of Soviet forces. On the 17th of October a unit of 30 Antonov transports (the same squadron that spearheaded the invasion of Czechoslovakia in 1968) was said also to have been moved to Belgrade³⁵.

By October 24th all seven Soviet airborne divisions were then on alert; three had been placed on alert as early as October 11, the rest in the early morning hours of the 24th. An airborne command post had been established in Southern Russia and Soviet Air Force units were also on alert. Together these forces represented some 40,000 combat troops. According to some reports, preparations for imminent departures were visible at several bases used by the airborne divisions. Indeed, one source reports that one of the seven divisions had been moved from its base outside Moscow to an airfield near Belgrade the week before³⁶. In addition, seven Soviet amphibious assault vessels, some possibly with naval infantrymen on board, and two helicopter carriers were deployed in the Mediterranean³⁷.

³⁰ Wheeler, p. 26.

³¹ Israelyan in Wheeler, p. 53.

³² Quandt, pp. 30-31.

³³ Blechman, p. 136.

³⁴ Blechman, p. 138.

³⁵ Blechman, p. 137.

³⁶ Blechman, p. 136.

³⁷ Blechman, p. 137.

By noon on 24 October, the same day that Nixon vetoed the War Powers Resolution, the apparent stand-down in Soviet airlift of weapons and supplies appeared ominous. Most of the Soviet transports could not be located by US intelligence; electronic intercepts indicated flight plans for next day were being changed and certain "communications nets" showed surge in activity, indicating an imminent major change in Soviet operations³⁸. When the Washington Special Action Group convened at 11:00 pm on the 24th, all evidence pointed to serious preparations by the Soviets for an intervention in Egypt in the very near future – within 24 hours³⁹.

In response, the WSAG unanimously recommended the president place U.S. conventional and nuclear forces on a higher state of alert to send an unambiguous message to the Soviets:

If you persist and actually go ahead and land forces in Egypt, you will initiate an interactive process between our armed forces whose end results are not clear, but which could be devastating...the US feels so strongly about this issue that it is prepared to participate in this escalatory process until our objectives are achieved...the US was demonstrating and making credible the vital stake it perceived in the situation.⁴⁰

Nixon agreed and the CJCS ordered the alert status of U.S. forces advanced to DEFCON III.

By 2:00 am on the 25th the order had been implemented. Fifty to sixty B-52 bombers were moved from Guam to CONUS, aerial refueling tankers were dispersed, the aircraft carrier *John F. Kennedy* was ordered to take up station near Gibraltar and the 82nd Airborne Division was ready for deployment by 6:00 am. There was no public announcement and no reply to Brezhnev's message.

Kissinger refused to accept Dobrynin's repeated telephonic requests for conversation. He did let Israeli ambassador know of US preparations as a way to impress Jerusalem with the gravity of the situation and the imminent danger of catastrophe should Israel force the Soviets' hand by annihilating the Egyptian 3d Army. By 7:00 am on the 25th the alert was the lead story in all the media. Americans, having gone to sleep unaware of Soviet preparations for intervention in the Middle East, awoke on Saturday morning to TV footage of US preparations for war – soldiers being recalled from leave, nuclear bombers taking off and ships moving off to sea⁴¹.

At his press conference at noon on the 25th, Kissinger dealt exclusively with the nuclear danger: "We possess, each of us, nuclear arsenals capable of annihilating humanity. We, both of us, have a special duty to see to it that confrontations are kept within bounds that do not threaten civilized life."⁴² Within hours the crisis ended. The Soviets stopped their efforts to send combat troops, opting instead to a call for a small group of observers.

³⁸ Blechman, p. 138.

³⁹ Blechman, p. 139.

⁴⁰ Blechman, pp. 146-147.

⁴¹ Blechman, p. 142.

⁴² Blechman, p. 143.

Israeli military activity ceased. The superpower nuclear confrontation lasted less than 48 hours.

Implications for Extended Deterrence

The central difficulty throughout the crisis was the need to influence the behavior of an adversary and the behavior of an ally at the same time. In the 1973 incident, first Egypt and then Israel, through actions of their own, actions which their patrons were powerless to prevent, brought the United States and the Soviet Union to the edge of catastrophe. This mirrors a similar understanding about extended deterrence that Europeans came to realize during the Cold War. Britain's Minister of Defence, Denis Healey, in the late 1960s is said to have postulated a theorem that holds that it took only five percent credibility of American capability and intent to deter the Soviets, but it took ninety-five percent credibility to reassure the European allies that the United States would risk nuclear war to defend NATO⁴³.

Escalation Control Remains Fraught With Uncertainty and Risk

As it did in the Cuban Missile Crisis, the Soviet Union backed down in response to a threat of nuclear escalation from the United States. But in the 1973 Middle East crisis, the Soviet Union clearly did not back down because the United States had an edge in strategic weapons and could "win" a nuclear exchange. By 1973 both superpowers had deployed nuclear forces that seemed likely to be able to survive a first strike and retaliate with devastating force against the attacker. Neither side could deliver a disarming first strike; each could expect to suffer devastating retaliation. The United States was able to convince Soviet leaders that strategic parity, an uncertain conventional balance, and domestic problems notwithstanding, the President was willing to risk war with the USSR to block the contemplated Soviet action. As Barry Blechman put it, American decision makers were not threatening to unleash nuclear war; in effect these actions constituted manipulation of the risk of nuclear war by pursuing an escalation process despite awareness that its potential consequences were incalculable. A statesman cannot actually threaten nuclear war more credibly than to draw attention to the fact that a process has been set in motion which, unless stopped, could lead to nuclear war⁴⁴.

In a crisis involving multiple powers, the risks of escalation are magnified by the simple mathematical reality that there are more permutations and combinations of calculations that must be made. Failure to recognize the multiple branches and sequels that could play out in a crisis can increase the risk of failure. In the Yom Kippur War the Israelis

⁴³ Denis Healey, *The time of my life*, (London: Michael Joseph, 1989), 243, quoted in David Yost, "Assurance and US Extended Deterrence in NATO," *International Affairs* 85: 4 (2009), 768.

⁴⁴ Blechman, pp. 150-152.

rested confident that the Arabs would be deterred by the realization that they could not win a conventional war. But they did not understand that Sadat's intent was not to achieve a decisive victory over the Israeli Defense Forces but to achieve a position on the battlefield from which they could restore the 1967 border in a post-conflict negotiation.

Conventional Deterrence is Necessary But Not Sufficient

The 1973 war demonstrated, once again, that conventional capabilities alone are an unreliable deterrent to conventional war. Israel relied on a false sense of conventional superiority to persuade the Arabs never to attempt what they did on October 6. They did not figure on Sadat's willingness to risk taking losses in battle for the potential to win a larger strategic victory in achieving a negotiated settlement that would restore the 1967 borders. Israel also had failed to realize the marginal utility of its strategic posture to provide them sufficient deterrence.

But the 1973 War also illustrated a fundamental link between conventional and nuclear force posture to achieve deterrent effect. Neither alone will produce sufficient impact on the cognitive processes of either the adversary or the ally of the seriousness of the commitment of the superpower to the defense of the ally whose land is far away. This again is a truth discerned by our European allies.

Before the Yom Kippur War renowned strategist Michael Howard had asserted that the more remote a crisis or country from the territory of a nuclear power, the more necessary it will be for that power to deploy conventional forces to demonstrate the intensity of its interest in that area and the less will be the significance of its bare nuclear strength. He observed that the engagement of conventional forces is indeed a prior necessity to the credibility of a nuclear deterrent threat⁴⁵. The US conventional alert, in conjunction with the nuclear alert on October 25th, added credibility to the nuclear threat. It showed the US would not have to choose between accepting the Soviet fait accompli and initiating nuclear war. It made the US position and the risk of escalation to nuclear war credible.

The Employment of Military Power for Extended Deterrence Is Not A Pick-Up Game

The United States learned from the Yom Kippur War that in order to be effective, extended deterrence should not be left to improvisation during crisis. In fact the US already knew that from its NATO experience, but the absence of analogous plans and procedures for other allies under the extended deterrence umbrella made for a measure of uncertainty and risk in 1973 that resulted in far-reaching changes for future deterrence operations.

⁴⁵ Michael Howard, "The Relevance of Traditional Strategy," *Foreign Affairs*, January 1973, pp. 253-266.

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Massive airlift operations of the scale of *Nickel Green* had been contemplated for reinforcement of Europe and practiced regularly in annual "REFORGER" (Redeployment of Forces to Germany) exercises since 1969. The deterrent value of airlift that had been presumed for REFORGER was apparent after the 1973 crisis. TEAM SPIRIT exercises brought this practice to the US-ROK extended deterrence relationship in 1976 and continue today in various other exercise series. After the Camp David accords, the US began regular airlift deployments to Egypt in the "BRIGHT STAR" series of exercises beginning in 1980. While somewhat difficult to measure, we must not underestimate the value of the public visibility of such airlift exercises both as a deterrent to potential adversaries and to reassure allies.

Planning for nuclear operations is quite complex compared to planning for conventional operations. NATO planning and release procedures are reported to have required upwards of 24 hours to put weapons on targets and in practice may have demanded 60 hours or more⁴⁶. And NATO's 1983 command post exercise to simulate a nuclear crisis proved that even exercising these complex procedures can have profound effect on real world deterrence and escalation⁴⁷. Such complexities do not make nuclear weapons planning infeasible. Indeed, at the operational level military leaders of the Cold War found ways to exploit the effects of nuclear weapons to integrate them into their plans for decisive effect.⁴⁸

The art of military campaign planning must incorporate techniques and procedures for deterrence operations including deterrence lines of operations that provide deterrence branches and sequels extending across all phases of the Joint Force Campaign. We must involve expert, live, Red Teams that will produce insight into opponent military decision making processes while fielding a new generation of analytic tools for planning staffs to measure and assess the credibility of their deterrence planning efforts.

APPLICATIONS

This review of Airpower and Extended Deterrence suggests to me a number of vectors we might consider to strengthen the US-ROK relationship, deter North Korean provocation and prevent proliferation.. These kinds of activities could contribute to developing optimal response options to weapons of mass destruction threats emanating from North Korea and for enhanced deterrence against North Korean provocations. They could also serve to advance our broader understanding of 21st century deterrence for the benefit and security of freedom loving peoples around the globe. Now do not

⁴⁶ Jeffrey D. McCausland, "Battlefield Nuclear Weapons and NATO Defense: Doctrines and Technologies," in James R. Golden, Asa A. Clark and Bruce E. Arlinghaus, *Conventional Deterrence: Alternatives for European Defense*, Lexington, Massachusetts, Lexington Books, 1984, pp.177-188.

⁴⁷ http://en.wikipedia.org/wiki/Able_Archer_83 accessed 6 June 2011.

⁴⁸ Donn A. Starry, *Press On! Selected Works of General Donn A Starry*, selected, edited and with an introductory essay by Lewis Sorley, Volume II, Fort Leavenworth, Kansas, US Army Combined Arms Center Combat Studies Institute Press, September 2009, pp. 731-737.

assume that these proposals are official proposals from the United States Air Force. I'm not at all sure that I could persuade my superiors of the wisdom of doing these things, much less of providing the funding that would be required. But they are ideas that I believe are affordable and that would contribute materially to extended deterrence and should be considered perhaps in the US-ROK Extended Deterrence Policy Committee.

This KAU Airpower symposium already is a success. Clearly this issue requires fresh, robust thinking between allies. Why not hold a reciprocal event at the US Air University? This could contribute to the development of a broadly applicable theory of deterrence and extended deterrence for the 21st century as well as to development of deterrence operations doctrines in both countries. Such symposia held perhaps biannually could rotate between our two countries, with smaller scale seminars in the interim periods to work on particular elements of the theory. An especially challenging problem that could be approached in this manner would be the replacement of the "Escalation Ladder" with an "Escalation and Deterrence Vortex."

Another methodology that can be helpful in advancing mutual understanding of deterrence is the conduct of Table Top Seminar War Games. Wargaming can take any number of forms but I have in mind here a particular type that would help us to advance our mutual military relationships. Wargames are participatory narrative experiences that give players active responsibility for their decisions, similar to what they would experience in the real world. What I propose is a series of high engagement games that draw participants into tasting the emotional and empathetic challenges they would face in situations like those presented in the game⁴⁹.

The principal benefit of this kind of wargaming lies not in the production of plans and procedures; it is in the development of officers who understand the cognitive domain of war. There are excellent facilities in a number of places in the United States for the conduct of such wargames and I would expect they are here as well. A high technology simulation setup is not necessary, although it can contribute to achieving the desired high impact. What is required is the right kinds of people who can emulate the perception, thinking and behavior of the actors, North Korea, China, Japan, the US, South Korea and others, who would in fact be involved in the kinds of real-world contingencies we may face together in the future.

A third effort to consider is to devote an upcoming Proliferation Security Initiative (PSI) Exercise to the conduct of an air-sea interdiction of suspected North Korean WMD shipment. The PSI has a track record of successful air interdiction exercises both in the Pacific and European scenarios. Prevention is an essential element of deterrence and with the recent ROK accession to the PSI framework the time is ripe to develop this relationship to its fullest potential. The US has conducted several seminars and wargames in support of the PSI so the first step in such an exercise would be advance work that could be co-sponsored by the Air Force Counter Proliferation Center at

⁴⁹ Peter P. Perla and ED McGrady, "Why Wargaming Works," *Naval War College Review*, Summer 2011, Vol. 64, No. 3, pp. 111-130.

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Maxwell AFB, Alabama and an appropriate South Korean counterpart organization. Subsequent command post and field exercises could then be conducted in collaboration with other PSI members in the region or integrated into the annual ROK-USFK exercise program.

Finally, let me suggest that both the US and the ROK would benefit from the continued conduct of bilateral training exercises at aerial range facilities in South Korea involving an array of military capabilities that could contribute a certain measure of deterrent value. What I have in mind is the overt incorporation of bombers in a fuller spectrum of air power capabilities, training with simulated cruise missiles and gravity weapons could enhance both training and deterrent value. In the course of such an exercise we could further our extended deterrence relationship if we organized a targeting, planning cell that would go beyond the regular Air Liaison Officer relationship that is formed to coordinate such events.

CONCLUSION

There are those who assert that deterrence is greatly overrated, poorly understood, and desired today mostly out of nostalgia. Not so. Campaign planners in operational forces around the globe increasingly find themselves confronted with developing concepts of operation that will in practice provide their commanders with realistic likelihood of deterring potential adversaries who are willing to take on allies of the United States.

Air power enables operations that solve the paradox of the nuclear age. No one is interested in waging a nuclear war; we must maintain stability in the midst of a multi-nodal, proliferated nuclear world such that no one is tempted to use a nuclear weapon in the first place. But the most sobering aspect of deterrence is that it cannot be a bluff. The nation must be willing to use nuclear force if all other actions fail. This, in turn, obligates the Air Force to develop and maintain capabilities to conduct nuclear operations no matter how frightening the prospect may be.

Let me to conclude with a final word on why nuclear capable aircraft are the most effective deterrent and then I will take your questions. You see, unlike airplanes, nuclear ballistic missiles are just like lawyers. First, when one side has one, the other side has to have one too. Second, once they are launched they cannot be recalled. And third, when they arrive, nuclear ballistic missiles, like lawyers, leave everything a mess for a thousand years.