20000915 139

The Maxwell Papers

US-Led Cooperative Theater Missile Defense in Northeast Asia

Challenges and Issues

Rex R. Kiziah
Lieutenant Colonel, USAF

Air War College
Maxwell Paper No. 21

DISTRIBUTION STATEMENT A
Approved for Public Release
Distribution Unlimited

DTIC QUALITY INSPECTED 4

Air University

Lance W. Lord, Lt Gen, Commander

Air War College

David F. MacGhee Jr., Maj Gen, Commandant
Stephen O. Fought, PhD, Dean
Lawrence E. Grinter, PhD, Series Editor
Lawrence E. Grinter, PhD, Essay Advisor

Air University Press

Shirley B. Laseter, Director
Emily Adams, Content Editor
Diane Clark, Copy Editor
Prepress Production: Vivian D. O'Neal
Cover Design: Daniel Armstrong

Please send inquiries or comments to:
Editor
The Maxwell Papers
Air War College
325 Chennault Circle Bldg 1401
Maxwell AFB AL 36112-6427
Tel: (334) 953-7074
Fax: (334) 953-1988
Internet: lawrence.grinter@maxwell.af.mil

AIR WAR COLLEGE
AIR UNIVERSITY

US-Led Cooperative Theater Missile Defense in Northeast Asia

Challenges and Issues

REX R. KIZIAH
Lieutenant Colonel, USAF

Air War College
Maxwell Paper No. 21

MAXWELL AIR FORCE BASE, ALABAMA

July 2000

This Maxwell Paper, and others in the series, is available electronically at the Air University Research web site http://research.maxwell.af.mil under "Research Papers" then "Special Collections."

Disclaimer

Opinions, conclusions, and recommendations expressed or implied within are solely those of the author and do not necessarily represent the views of Air University, the United States Air Force, the Department of Defense, or any other US government agency. Cleared for public release: distribution unlimited.

Foreword

In this paper, Lt Col Rex R. Kiziah, USAF, examines current US efforts to cooperatively develop and deploy with Japan and South Korea a theater missile defense (TMD) family of systems (FoS) in Northeast Asia. First, the author summarizes the US security strategy for the East Asia-Pacific region with emphasis on the importance of regional missile defense. Second, he characterizes the ballistic missile capabilities of North Korea and China, which constitute the primary threat in the region and have spurred increased US and allied pursuit of advanced TMD systems. Third, the author discusses the advantages, country-specific issues and status of cooperative US, Japanese, and South Korean TMD developmental activities. Finally, Colonel Kiziah details some of the complex regional security issues associated with US, Japanese, and South Korean missile defense activities vis-à-vis China and Taiwan; the challenges in ameliorating Chinese concerns; and the prospects of long-term partnering and fielding of a tri-country, integrated regional TMD system.

Responding to increasing North Korean and Chinese ballistic missile threats, the United States has placed a high priority on developing and deploying a Northeast Asian regional TMD FoS by the 2010 time frame. Motivated by the benefits of burden and technology sharing, increased system effectiveness, and strengthened US-allied security relationships, US officials have worked extensively with the Japanese and South Koreans for more than a decade to establish a cooperative TMD acquisition program.

The August 1998 North Korean launch of a Taepo Dong-1 across the Japanese archipelago helped to secure US success with Japan, at least for the short term. Colonel Kiziah discusses the recently negotiated US-Japan cooperative, three-year research and development program and identifies the many challenges in long-term continued cooperation through TMD deployment. By contrast, South Korean leadership has increasingly resisted partnering with the United States and Japan on TMD development activities and, at odds with US regional nonproliferation

goals, has been pursuing development of an indigenous, offensive missile deterrence against Pyongyang.

The author argues that US success with Japan in pursuing a regional TMD capability has increased the tensions between the United States and China and between China and Japan. Although these heightened tensions should not yet be construed as seriously increasing the security risks within the region, Chinese concerns regarding a US and allied regional TMD FoS need to be addressed sooner rather than later. The Chinese concerns are many but their principal one seems to be that an effective TMD system significantly mitigates China's principal means of coercing Taiwan into reintegration with the mainland over the next 15- to 20-year time frame. Colonel Kiziah concludes that, since the Chinese have never wavered in their public goal of eventually regaining Taiwan, the US and Japanese leadership must seriously address Chinese concerns. Concerted efforts to engage the Chinese leadership and build mutually trusting relationships are required over the next 10- to 15-year period as a Northeast Asian regional TMD system becomes operational.

The Air War College encourages discussion and debate on Colonel Kiziah's examination of Northeast Asian regional TMD issues and challenges.

DAVID F. MacGHEE, JR.
Major General, USAF
Commandant, Air War College

About the Author

Lt Col Rex R. Kiziah (BS, US Air Force Academy [USAFA]; PhD, The University of Texas at Austin) is currently the deputy chief, Theater Air Defense Division in the Air Staff's Directorate of Global Power Programs. Previous assignments include serving as the Air Force Research Laboratory commander's representative to the National Reconnaissance Office; deputy program manager of the Office of the Secretary of Defense Counterproliferation Support Program; special assistant for research and technology for the assistant to the Secretary of Defense for Nuclear, Chemical and Biological Defense Programs; associate professor of physics at the USAFA; and section chief and neutral particle beam research officer at the Air Force Weapons Laboratory. He is a graduate of Squadron Officer School, Air Command and Staff College, a 1998 graduate of the Defense Systems Management College and a 2000 graduate of the Air War College.

US-Led Cooperative Theater Missile Defense in Northeast Asia

On 31 August 1998, North Korea flight-tested a new, three-stage, medium-range ballistic missile (MRBM)/space launch vehicle (SLV) referred to by Western analysts and reporters as the Taepo Dong-1. The Taepo Dong-1 traversed a range of approximately 1,000 miles on a trajectory consistent with a satellite launch, which took it across the Japanese archipelago. Its first stage fell into the Sea of Japan, the second stage landed in the Pacific Ocean off the Sanriku coast of northeastern Honshu, and the third stage failed during powered flight.[1] After maintaining four days of silence, North Korean officials stated that the Western-labeled MRBM flight test was not the test firing of a ballistic missile but was a three-stage rocket launch of a small satellite, Kwangmyongsong (Bright Star), into a low-earth orbit with a period of approximately three hours. The US Space Command's extensive space surveillance network detected no satellite entering orbit or subsequently on orbit. Whether the 31 August 1998 North Korean event was an attempted satellite launch, or an MRBM test-flight, will perhaps never be decided conclusively,[2] nonetheless, the event was pivotal in that it was a very unpleasant surprise to US, Japanese, and South Korean officials and analysts. The US intelligence community had predicted the launch of the missile, but the existence of the third stage was completely unknown. Experts had assessed that the North Koreans could not master staging technologies—at least not yet.[3] Analysis of a video of the test flight revealed that the first stage of the Taepo Dong-1 was a No Dong, and the second stage was a Scud-C. Cyrillic numbering covered portions of the missile, suggesting possible Russian involvement—both materials and technical expertise—in the Taepo Dong-1's construction.[4]

The aftermath of this sputnik-like event has been significant, yet different for the United States, Japan, and South Korea. Within the United States, the Taepo Dong-1 missile test intensified nonproliferation, counterprolifera-

tion, and confidence and security building measures and activities. Government leaders immediately placed increased emphasis on developing and deploying a national missile defense (NMD) to defend the US homeland from rogue nations' intercontinental ballistic missiles (ICBM) and regional theater missile defense (TMD) systems for protection of US troops and facilities abroad. For Japan, with whom the United States has been discussing cooperative acquisition of a regional TMD system since the inception of the national Strategic Defense Initiative in 1983 to no substantive avail, other than a myriad of studies, the Taepo Dong-1 test flight enraged both the public and bureaucrats, propelling them from their customary glacial political pace into warp drive.[5] After years of indecision, in August 1999 the Japanese decided to join the United States in a cooperative TMD research and development (R&D) program. Unlike the Japanese, and much to the dismay of US officials, the South Korean leadership responded to the Taepo Dong incident with renewed vigor in its efforts to indigenously develop ballistic missiles, exacerbating the difficulties the United States faces in its efforts to eventually forge a single, integrated TMD regional system for Northeast Asia and at glaring odds with the US top foreign policy priority of nonproliferation.

In this paper, I discuss in some detail the US-led efforts to develop and deploy a TMD system within Northeast Asia, highlighting many of the regional security issues and challenges associated with these efforts and providing information that may aid in understanding the US, Japanese, and South Korean responses to the North Korean Taepo Dong incident. First, I summarize the US policy and strategy on TMD in general and with respect to Northeast Asia. I then briefly characterize the Northeast Asian regional security threats as perceived by the United States, Japan, and South Korea. Next, I discuss the advantages of cooperative TMD development and deployment, followed by a description of the recently initiated US-Japan cooperative TMD R&D program and an analysis of South Korea's stance on TMD. Lastly, I discuss the complex security issues (focused on China and Taiwan) associated with developing a US-Japan-South Korea regional TMD system and the prospects for successful deployment.

United States Theater Missile Defense Policy and Strategy

The 1999 US *National Security Strategy for a New Century* and, more specifically, the 1998 *United States Security Strategy for the East Asia-Pacific Region* (or East Asia Strategy Report [EASR]) define the engagement strategy and objectives for promoting US interests in the Asia-Pacific region. A salient point of these documents is that the strategy of engagement is aimed at promoting "a stable, secure, prosperous and peaceful Asia-Pacific community in which the United States is an active partner and beneficiary [one benefit being approximately $500 billion a year in trans-Pacific trade]."[6] Playing a key role in executing this strategy is the US military, which not only deters potential aggressors but also shapes the security environment to prevent regional security challenges from emerging. Thomas Christensen, of the Massachusetts Institute of Technology, in a 1999 *International Security* article on the East Asia security dilemma, notes that "most scholars . . . seem to agree with U.S. officials and local leaders that a major factor in containing potential tensions in East Asia is the continuing presence of the U.S. military, particularly in Japan."[7] Christensen further asserts that, because of the intense, historically based mistrust among the Northeast Asian leaders, maintaining a US military presence in Japan is critically important for regional stability. Nonetheless, he persuasively supports the view that "the United States faces tough challenges in maintaining the US-Japan alliance in a form that reassures both Japan and its neighbors."[8]

One of the key components of the US's Northeast Asian engagement strategy to which Christensen's view applies is the extremely challenging US effort to cooperatively acquire with Japan and South Korea an integrated, regional TMD system. With a national commitment to maintain approximately 100,000 military personnel along with the necessary infrastructure in Japan and South Korea, a top US defense priority is deterring the use of ballistic missiles, and if used the protection of US and allied troops and bases from ballistic missiles armed with conventional, nuclear, biological, or chemical warheads. In fact, due to the

widespread proliferation and threat of the use of ballistic missile-delivered weapons of mass destruction (WMD) against US forward-deployed personnel, TMD has emerged as the Department of Defense's (DOD) number one missile defense priority.[9] This sense of urgency and momentum has permeated US security relationships in Northeast Asia, especially since the regional shock of the August 1998 Taepo Dong 1 test-firing. Although the US views a regional TMD system as a purely defensive system, complementing its offensive forces and bolstering its ability to deter potential aggression and coercion throughout the region, Christensen highlights and provides compelling arguments that key actors in the region, especially China, may nonetheless perceive this supposedly defensive-only system as very provocative. I discuss some of these arguments, and others, in the last part of this paper, but first I describe the perceived threats to regional security and stability in the region, emphasizing theater ballistic missiles.

Northeast Asian Regional Security Threats

The two key players in Northeast Asia whose military capabilities and actions are perceived by the United States, Japan, and South Korea as threatening to the security and stability of the region are North Korea and China. The North Korean threat is probably best and most succinctly described in the 1998 EASR: "Its August 1998 missile launch, which overflew Japan, underscored for the entire region that North Korea, despite its domestic hardship, continues to pose a threat not only on the Peninsula but to common regional security."[10]

Of most concern to South Korea and to the US personnel stationed in the country, the North Koreans have several hundred indigenously produced (with technical assistance from China) short-range ballistic missiles (SRBM)—the road-mobile Scud-Bs (300-kilometer [km] maximum range, 1,000-kilogram [kg] maximum payload) and Scud-Cs (600-km, 500-kg)—deployed for strategic "terror" and tactical strikes against logistical nodes and urban areas in the event of a conflict. The Scud-C's range encompasses all of South Korea.

North Korea's Ballistic Missile Capabilities

Posing a threat to both Japan and South Korea, the North Koreans have also deployed an undetermined number of MRBMs—the No Dong single-stage missile with a maximum range of 1,300 km—giving them the capability to strike much of Japan from Okinawa to Hokkaido, which includes all US bases on the archipelago. As highlighted earlier, Pyongyang has developed and recently tested a three-stage MRBM/SLV, the Taepo Dong-1, with a maximum range of more than 2,000 km and a payload capacity of several hundred kilograms, bringing the entire group of Japanese islands within its strike capabilities. Lastly, as part of its ongoing and ambitious ballistic missile development programs, North Korea is developing the Taepo Dong-2 ICBM, the two-stage version having an estimated maximum range of 6,000 km or more, thus placing the western part of Alaska, the far western portions of the Hawaiian Island chain, East Asia, and major parts of Southeast Asia within its reach. A three-stage version could reach the western portion of the continental United States. The Taepo Dong-2 has not yet been flight tested. It is interesting, but not surprising, to note that the North Korean leadership asserts that its ballistic missiles are needed for self-defense, particularly against the United States, and that satellite development is a sovereign right.[11] Apparently, emerging on the world scene as a space-faring nation is a national priority for Kim Jong Il, even as his nation is collapsing from economic distress and mass starvation.

All of North Korea's ballistic missiles are assessed to be capable of carrying its panoply of conventional high-explosive, biological, or chemical warheads (and possibly nuclear). The Japanese Defense Agency Chief, Hosei Norota, recently stated that there were several factories in North Korea that were producing "toxic gas and germs" that could be weaponized.[12] A US Central Intelligence Agency document released in early February 2000 reported that "North Korea produces and is capable of using a wide variety of chemical and possibly biological agents, as well as their delivery means."[13] There is also concern in the United States, Japan, and South Korea that the North Koreans

have the material to develop, or have already secretly developed, one or more nuclear devices, particularly since they appear to have violated the 1994 Agreed Framework by maintaining a covert nuclear capability.[14]

North Korean Leadership Intentions

Exacerbating the threat perceived by the United States, Japan, and South Korea because of its ballistic missile and WMD capabilities is the cloak of secrecy enveloping North Korean leadership actions and the apparent irrationality of the majority of Kim Jong Il's actions, resulting in the inability to even remotely gauge his intentions. A prime example is the August 1998 Taepo Dong-1 flight test. As Taewoo Kim, Policy Research Office director for the United Liberal Democratic Party, Republic of Korea, discusses in his May–June 1999 *Asian Survey* article, Kim Jong Il's decision and timing of the launch of the Taepo Dong-1 appear to be a completely irrational act to outsiders.[15] However, Mr. Kim argues that Kim Jong Il is not irrational but is "dangerously calculative," and his actions are aimed at regime survival and coping with his nation's severe economic crisis. Reaching basically the same conclusion, but referring to Kim Jong Il's actions as missile blackmail and extortion, Richard Fisher of the Heritage Foundation argues that the Taepo Dong missile test was an effort to extort money from the United States. Specifically, the test firing quickly followed a June 1998 North Korean Central News Agency announcement and August 1998 North Korean officials' discussions with congressional staff members demanding US compensation of $500M per year for North Korea to halt its missile exports as well as foregoing reinitiation of its nuclear weapons program.[16] Whether these views of Kim Jong Il's actions and intentions are correct is debatable, but it is apparent that assessing the North Korean threat to regional security and stability will necessarily be replete with uncertainties.

Chinese Leadership Intentions

Like North Korea, the secretive barrier behind which leadership actions occur complicates assessment of the

true threat that China poses to Northeast Asian regional security and, therefore, necessarily frustrates outside attempts to understand Chinese intentions. Whether or not China has regional hegemonic aspirations is unclear. Stephen Cambone of the Center for Strategic and International Studies in Washington, D.C., notes: "Observers have yet to agree on China's intentions beyond recognizing that it will no longer allow itself to be treated as anything other than a great power."[17] Furthermore, China views its ballistic missile forces as an essential element of great-power status as demonstrated by its firing of nuclear-capable SRBMs across the Taiwan Strait to intimidate Taiwanese leadership in 1995 and 1996, veiled threats to use its ICBMs against the United States if the United States supports Taiwan in a conflict with China, and its vociferous condemnation of US-planned NMD development and deployment as destabilizing to the US-Chinese strategic relationship. Thus, there is both an international and regional focus on China's growing military power.

China's Ballistic Missile Forces and Military Modernization

For at least a decade, China has increased its defense expenditures annually (estimated at around 10 percent per year) and, in a savvy, methodical fashion, has been modernizing the People's Liberation Army (PLA) across the board—acquisition of advanced fighter aircraft and a range of power-projection platforms along with programs to develop advanced surface-to-air missiles, land-attack and antiship cruise missiles and mobile ballistic missiles. And, according to Fisher, the PLA places the highest modernization priority on its missile forces for the following reasons: (1) the PLA desires a variety of nuclear and nonnuclear ballistic missiles to deter US support for Taiwan and to project power throughout Asia; (2) China cannot modernize its air force and navy without significant outside assistance, but can itself develop a variety of modern ballistic missiles (with foreign missile technologies which China has demonstrated adeptness at obtaining via cooperation, purchase, and espionage); and (3) ballistic missiles provide an asymmetric form of attack against the United States

and potential adversaries which currently, and for at least 10 years into the future, have no effective theater ballistic missile defenses.[18]

China's SRBMs are its cheapest and most effective option for neutralizing Taiwan's technologically superior air force and air defenses. It is estimated that 100 to 150 of the nuclear-capable, but currently conventionally armed, 600-km range DF-15 and 300-km-range DF-11 missiles are now deployed for potential strikes against Taiwanese airbases, ports, command and control centers, and early warning systems.[19] The PLA is improving the accuracy of these missiles with integrated, enhanced guidance and satellite navigation technologies, possibly increasing the DF-15's circular error probable (CEP) by an order of magnitude from 300 to 30 meters (m).[20] Additionally, in one or two years, the PLA will complete development of maneuverable versions of these missiles, thus providing the capability to reach targets previously geographically obscured.[21] According to Fisher, the US intelligence community has estimated that China could deploy up to 650 of the DF-11s and DF-15s by 2005.[22] Although presumably directed at preventing Taiwan from declaring permanent independence from the Chinese nation, these SRBMs are also of concern to Japan because they could be used against the sea and air lines of communication in the East China Sea.

In addition to a robust force of SRBMs, China possesses a significant number of MRBMs and intermediate range ballistic missiles (IRBM) that can be armed with conventional or nuclear warheads, and new ones are under development. Japan is well within range of all the MRBMs and IRBMs. The current inventory consists of the nuclear-tipped, 2,800-km range DF-3/3As and 1,800+-km range DF-21/21As.[23] The PLA may have more than 80 of the road- and rail-mobile DF-21s deployed. It has also been reported that China recently fielded an advanced version of the DF-21, referred to as the DF-21X, with a range of 2,900 km and significantly improved accuracy, perhaps as small as 50-m CEP.

China also possesses a sizable force of ICBMs, currently assessed to be relatively inaccurate and armed with only one nuclear warhead per missile. US intelligence estimates

range from 18 to 26 DF-5/5A 13,000-km range ICBMs.[24] However, the Chinese have intensely pursued multiple independently targetable reentry vehicle (MIRV) capabilities for many years. Having obtained information on the United States's smallest and most modern nuclear warhead, China could combine such a warhead with smaller reentry vehicles and reconfigure its multisatellite bus developed for launching Motorola Iridium satellites and convert the DF-5 into an eight-warhead MIRVed ICBM.[25] Two Chinese ICBM development programs are underway—the 8,000-km range DF-31 and 12,000-km range DF-41—both of which are mobile ICBMs and are expected to be MIRVed. The DF-31 and DF-41 ICBMs are estimated to be operational by 2003 and 2010, respectively.

Realizing that its ballistic missile forces may be more effective in accomplishing regional and strategic objectives if some of them are equipped with extremely powerful, highly accurate, nonnuclear warheads as opposed to nuclear, the Chinese have substantial efforts devoted to developing radio-frequency (RF) weapons and cluster munitions.[26] With significant reduction for the likelihood of US nuclear retaliation, the PLA could use RF-armed or cluster munitions-filled ballistic missiles to strike command and control networks, power grids, carrier battle groups, airbases, ports, and other infrastructure targets throughout Northeast Asia.

The bottom line is that China is well on its way to possessing formidable regional (and beyond) force-projection capabilities via its ballistic missiles by 2010, a time period that allows for development and deployment of a regional TMD system, if pursued aggressively. Further heightening US and Japanese concern about the need for regional TMD is China's evolving security policy. The PLA appears to be shifting from a "minimum" to a "limited" nuclear deterrence strategy—not just developing a minimal capability to target a few key cities in the United States or Russia, but developing the capability to strike targets regionally or outside the region in such a manner as to gain a strategic advantage but control escalation and minimize nuclear retaliation. Additionally, PLA missile doctrine has increasingly emphasized the use of nonnuclear armed ballistic missiles for a variety of military actions at the regional level. That

such a strategy may work to China's strategic advantage was clearly demonstrated in July 1995 when the PLA's Second Artillery fired six DF-15s north to an East China Sea impact area 90 miles north of Taipei and again in March 1996 with four DF-11s impacting at ocean points bracketing the island. As David Wiencek, a Washington, D.C.-based international security analyst, noted, "These tests were one of the most striking uses of ballistic missiles for the purposes of political intimidation ever seen."[27] Adding to the threat, Chinese officials also issued warnings in both 1995 and 1996 that the PLA could attack Taiwan without fearing substantive US military intervention because US leaders "care more about Los Angeles than they do about Taiwan."[28] These euphemistically termed "missile tests" clearly indicated that China was a serious power and would have an impact on the regional security environment.

Theater Missile Defense Description and Cooperative Development and Deployment

Both the North Korean and Chinese ballistic missile and WMD capabilities are credible and growing threats to the interests of the United States, Japan, and South Korea. Both North Korean and Chinese leadership have not hesitated to demonstrate their willingness to use their ballistic missile arsenals in a threatening manner against other countries in the region. To deter and counter these increasingly sophisticated and destructive ballistic missile threats, the United States is pursuing several TMD development programs as part of a time-phased acquisition of multitiered, interoperable land-, sea-, and air-based systems that will provide defense in-depth against a wide variety of theater ballistic missiles. This integrated combination of systems is called the TMD Family of Systems (FoS). The FoS approach provides multitiered defenses—terminal defense (low tier systems), endo- and exo-atmospheric intercepts (upper tier systems) and boost-phase intercept—which increase overall system robustness, that is, kill probability and efficiency.

Lower-tier systems such as the Patriot Advanced Capability-3 (PAC-3) and the Navy Area Defense system are designed to defeat SRBMs. The PAC-3 will provide air defense of ground combat forces and high-value assets. The projected date for the first equipped unit is FY 2001. Likewise, the Navy Area Defense will provide a capability to protect US and allied forces and important assets at sea and in coastal regions. The goal for the first unit equipped for this system is FY 2003. Upper-tier systems under development are the Theater High-Altitude Area Defense (THAAD) and Navy Theater Wide (NTW) systems. They are designed to defeat MRBMs and IRBMs by intercepting the missiles at high altitudes, thus providing effective protection of broad areas, dispersed assets, and population centers. The US objective is to field an upper-tier system capability by 2007. Lastly, the United States is developing the Airborne Laser system for boost-phase intercept of theater ballistic missiles. A demonstration to lethally shoot down a realistic target is planned for late 2003. By developing and deploying a regional TMD FoS, the United States hopes to deter countries such as North Korea and China from using ballistic missiles in an attempt to achieve political and military objectives, and if missiles are used, to protect US military personnel deployed abroad, defend military installations such as ports and airfields, and protect US allies and friends.

Cooperative Theater Missile Defense Development and Fielding

The United States desires to cooperatively develop and deploy an integrated regional TMD system with Japan and South Korea. As delineated by Secretary Cohen in his *1998 Annual Report to the President and the Congress*, the general objectives of US TMD cooperation with allies are to (1) strengthen US security relationships, (2) enhance the US's counterproliferation efforts, (3) share the burden of developing and fielding defenses, (4) enhance interoperability between US forces and those of allies and friends, and (5) share knowledge for the mutual benefit of both the United States and its partners.[29] Probably the biggest motivation for the US's desire to cooperate is cost sharing. Bruce Ben-

nett, a RAND Corporation researcher specializing in counterproliferation and force improvement issues, estimates the development and deployment costs for an East Asian regional TMD system could be $10 billion or more.[30] In an era of declining defense budgets, cooperation with allies may be the only way to affordably develop and field such expensive weapon systems. Dr. Paul G. Kaminski, then under secretary of defense for acquisition and technology, stated in a February 1995 speech: "That means increased emphasis on cooperation with our allies in acquisition of defense equipment."[31] Adding to this Department of Defense policy, especially for Japan, was the increasing insistence of many government officials, driven by the growing trade tensions between the United States and Japan during the 1980s and 1990s, that Japan should get no more free rides and must play a central role in the funding, research, and procurement of a regional TMD system. Attempting to capitalize on this Pentagon atmosphere of allied cooperation for large defense acquisitions and making Japan pay its fair share, the Navy strongly advocated cooperative TMD to procure additional dollars for its underfunded NTW development program.

Another important reason for cooperating on an integrated, multicountry, regional TMD system is that such a system would be more effective at locating, tracking, and intercepting ballistic missiles than would be a system fielded by a single country—multiple, dispersed, early warning radars can locate and track the target more accurately than can a single radar or multiple radars located in the same general area. Closely related is that single-country deployment of a regional TMD system would likely undermine the interoperability and defense cooperation between US, Japanese, and South Korean forces. And, from a pragmatic viewpoint, the United States intends to develop and deploy TMD to protect its forward-deployed personnel and assets; not protecting supporting allied forces and local populations would most likely destroy coalition efforts.

If the United States and its allies did not cooperate in a missile defense system, allied confidence in US defense commitments could erode and lead to Japan and South Korea developing and deploying offensive missiles (perhaps

including nuclear warheads) to deter China. Cooperative TMD would supplement and enhance the effectiveness of the US nuclear umbrella, providing a much broader and more flexible deterrent to coercion and aggression in the region. Countries' susceptibility to nuclear blackmail by rogue nations such as North Korea should be reduced, and China may become less apt to flex its "missile muscles."[32] Additionally, Fisher believes that cooperative TMD could create incentives, especially for the Chinese, to negotiate a reduction in the numbers of nuclear weapons and ballistic missiles, arguing that the reduced utility of ballistic missiles resulting from deployment of an effective regional TMD system would enhance mutual confidence. Also, cooperative deployment of regional TMD would provide the United States and its allies the credibility to approach China on the issue of shared missile defense.[33]

Given the North Korean and Chinese ballistic missile and WMD capabilities and their propensity to use these capabilities in antagonistic ways against their neighbors in the region and the United States, and given the myriad of seemingly beneficial reasons to work "hand-in-glove" with each other, one would think there would be a common strategic interest and strong motivations for the United States, Japan, and South Korea to cooperatively develop and deploy a Northeast Asian regional TMD system. However, the complex security issues associated with deploying TMD in Northeast Asia and the diversely perceived impacts on stability and country-to-country relationships complicate the decisions to cooperate and the extent of that cooperation.

US-Japan Cooperative Theater Missile Defense Activities

Ironically, North Korea, the threatening nation whose ballistic missiles a Northeast Asian regional TMD system would ostensibly be designed to thwart, managed to jump start substantive cooperation between the United States and Japan with its August 1998 Taepo Dong-1 flight test. On 16 August 1999, US DOD Under Secretary of Defense for Acquisition and Technology Jacques Gansler, and Japan Defense Agency Director General of the Bureau of

Equipment Kozo Oikawa, signed a memorandum of understanding (MOU) detailing a three-year, cooperative TMD R&D program.[34] The United States will spend around $36 million (M) on the cooperative program; the Japanese are committed to spending an equitable, but unspecified amount. Their government's fiscal 1999 (April 1999–March 2000) budget included approximately $8M for the R&D effort; future years budget amounts were still under consideration at the time the MOU was signed.[35] The regional TMD architecture that the cooperative effort supports is a sea-based missile defense system, specifically a system such as the Navy's NTW which would be deployed within approximately 12 years and provide an antiballistic missile shield with a radius of about 3,000 km. Previous studies, both bilateral US-Japan feasibility studies and unilateral analyses, had indicated that an NTW-like system provided the most cost-effective missile defense for the Japanese archipelago and was the most fruitful for collaboration. The foundation of the NTW system is the Aegis radar-equipped warships. Japan already operates four Aegis destroyers that could be modified to serve as TMD platforms and is considering procuring two additional Aegis ships.[36]

More specifically, the MOU is an agreement that the United States and Japan will cooperatively conduct a three-year preliminary design and analysis effort, including risk mitigation and developmental activities, on evolving the Standard Missile-3 Block I into a Block II variant.[37] Four areas of R&D were identified: the missile's lightweight nose cone, advanced kinetic warhead, infrared seeker sensor, and second-stage propulsion. The goal of this cooperative requirements analysis and design (RA&D) effort is to specify the design and select the technologies for these four missile subcomponents. Although the United States clearly intends to move into the next acquisition phase, demonstration and validation, at the conclusion of a successful cooperative RA&D effort, there is no commitment by either side to cooperate beyond the R&D activities. At the conclusion of the three-year effort, both sides may end the partnership with full rights to the commonly developed technologies.[38] Nevertheless, US Embassy Mutual Defense Assistance Office personnel in Japan have noted that Japanese political consensus for the demonstration and

validation phase currently exists, and both the United States and Japanese developed the cooperative TMD program with the intent of joint production and deployment of an NTW Block II system in 2012.[39] Authors of a House International Relations Committee report surmised that, if the jointly developed technologies are validated, Japan could ultimately spend $300–$500M on the shared development of a regional TMD system. However, as Keizo Takemi, the Japanese secretary for foreign affairs, clarified, the Japanese participation in a TMD system is now only at a cooperative research stage.[40]

If the Japanese were to continue to cooperate with the United States after the three-year preliminary design and analysis effort, a new MOU would be required along with Japanese legislation to address the use of space for satellite-based sensors that would locate and calculate the trajectories of theater ballistic missiles. Previously instituted Japanese Diet resolutions expressly prohibit the militarization of outer space. Changing this legislation could prove to be a formidable task given the inordinate amount of time and negotiation required to conclude the agreement for the current, relatively benign, cooperative effort. Also, future acquisition phases of a TMD system will be much more costly than the roughly $70M set of R&D activities and, if the ongoing Japanese recession and banking crisis continues, a decision to continue will be extremely difficult to make. Additionally, journeying further down the path of joint TMD development and deployment will certainly encounter even more bellicose rhetoric and missile deployments by Beijing. In discussing the US-Japan TMD cooperation, Takemi stated "We are always very careful to conduct our defence policies to avoid unnecessary misunderstandings among neighbouring countries."[41] Recent discussions with officials of Japan's Ministry of Foreign Affairs and Air Staff College confirmed Takemi's inference to the reality that Japanese decision making is clearly influenced by anticipated Chinese reactions. Given that the Japanese governmental system operates in a slow and sedate manner with politicians and bureaucrats all too often relying on tactics of delay as opposed to tough decision making, Japan's long-term participation with the United States in fielding a regional TMD system is far from cer-

tain. As the authors of a July 1999 *Far Eastern Economic Review* article on TMD pessimistically state, "bringing Northeast Asia under a missile-defense umbrella remains a distant American dream at best, and a chimera at worst."[42]

South Korea and Theater Missile Defense

Whereas the United States has had some significant recent successes in gaining Japanese cooperation on a regional TMD system, the South Korean government has continued to shun US efforts to gain its cooperation. South Korea's Minister of Defense Chun Yong Tack, clearly indicated in March 1999 that his country would not participate with the United States or Japan in any regional TMD programs, citing the following rationale: "Pursuing the TMD is not an effective countermeasure against North Korean missiles. It can also arouse concern from neighboring countries."[43] Unfortunately, given the nature and proximity of the North Korean threat, developing a regional antiballistic missile shield that is sufficiently protective of South Korea is complicated and costly, and perhaps infeasible. The central military threat to South Korea consists of North Korea's short-range Scud missiles and massive amounts of artillery and multiple-rocket launchers located just 50 km from Seoul. South Korean military analysts have concluded that none of the TMD systems can effectively counter them. Even though the US government has repeatedly tried to convince the South Korean officials that it believes there are viable TMD architectures, the South Korean officials are unconvinced. They have made it clear that they view the US-proposed TMD options such as THAAD, PAC-3, or sea-based systems as unproved, costly, and inadequate for deterring North Korean missile attacks against their country.[44] Additionally, given the magnitude of the threat they face, the South Koreans have indicated that concern about Chinese and North Korean ballistic missiles/WMD capable of striking Japan or the United States is not their highest priority. And perhaps most importantly, South Korean President Kim Dae Jung is keenly aware that his country's participation in a US-Japan-South Korea regional TMD program could anger China—he

needs China's assistance in persuading North Korea to be more responsive to his "sunshine policy" peace initiatives.[45] Recent discussions with US embassy personnel, Republic of Korea, clearly highlighted that South Korean officials were indeed concerned with Chinese reactions to the current US-Japan cooperative TMD program and to those Chinese actions that may arise in response to any potential South Korean involvement in a cooperative, regional TMD program. Specifically, one embassy official pointed out that the United States and Japan are already confronting real and potentially serious issues with the Chinese over their joint TMD venture, and the South Koreans are avoiding any involvement.

The South Korean military's preferred method for dealing with the North Korean threat is a deterrent force consisting of indigenously produced MRBMs capable of striking critical targets throughout North Korea. In early 1999, a South Korean National Security Council official told a *Defense News* reporter, "We need to have a deterrent capability. Our government wants a missile capable of reaching Pyongyang and beyond. . . . If North Korea attacks, we want to initiate a counter-offensive action as quickly as possible."[46] Although South Korea has been developing a medium-range missile since 1989—the Hyonmu project—their efforts have been constrained by a 1990 US-South Korean agreement restricting Seoul's domestically produced missiles to a maximum range of 180 km.[47] These restrictions are part of the US's nonproliferation efforts and are currently contentious with the South Koreans. North Korea's August 1998 test firing of the Taepo Dong-1 revitalized and strengthened their resolve to persuade the United States to remove the restrictions. On 10 April 1999, South Korea test fired the Hyonmu (NHK-2). Although it only covered a range of 40 km, the United States determined that the South Korean military had only partially fueled the missile, and that its true range was closer to 300 km, exceeding the 180-km restriction.[48]

Trying to adhere to its nonproliferation goals, the United States expressed a willingness to accept South Korean development of 300-km range missiles, but only with the conditions of transparency in their R&D programs and their membership in the Missile Technology Control

Regime (MTCR).[49] A senior official of South Korea's Ministry of National Defense aptly expresses South Korea's view on these conditions: "As a matter of national pride, we cannot agree to transparency conditions. Our people will view this as an infringement of sovereignty."[50] Additionally, many South Korean officials are hesitant about joining the MTCR, concerned that membership would limit their missile development options. Thus, they are advocating acquisition of missile technologies from other countries such as Russia, France, and Israel, and circumventing the United States and its nonproliferation demands. On 1 February 2000, South Korea's Samsung Electronics Company and the French group Thomson-CSF launched a joint venture defense firm that will manufacture components for indigenous South Korean air-to-ground missiles. This is a watershed event for South Korea's missile development program and is the first-ever transfer of non-US missile-related technologies to the country.[51] Fundamentally, US and South Korean leadership appear to have different strategies to deal with the North Korean ballistic missile/WMD threat. Obtaining Seoul's participation in a cooperative TMD development and deployment effort makes dealing with Japan appear to be a "walk in the park."

The Chinese Factor

As if the United States did not have its hands full in simply trying to forge a cooperative US-Japan-South Korea TMD venture, the associated issues with China seem to increase daily at an exponential rate. Not surprisingly, even though China is clearly intent on modernizing and improving the capabilities of its ballistic missiles, which serve as a principal component of its military forces, and is itself pursuing missile defenses, the Chinese leadership is fiercely opposed to, and is vigorously campaigning throughout the international community against any activities by the United States, Japan, and South Korea on a Northeast Asian regional TMD. As a 1999 Nixon Center panel (one of the members was Adm David Jeremiah, Retired, former vice chairman of the Joint Chiefs of Staff and commander in chief of the Pacific Fleet) on TMD highlighted, the United

States must ultimately act in its own interests to protect itself and key allies from ballistic missiles/WMD, but should be sensitive to the concerns of China and other nations.[52] In the remainder of this paper I discuss some of the key differences between the views of the United States, Japan, and China with regard to fielding a Northeast Asian regional TMD FoS (South Korea is not included since it is not cooperating with the United States and Japan and does not share the same view on the efficacy of a TMD system for the region).

A fundamental difference exists between the United States and China on their views of the role of a TMD system in enhancing regional security and stability. US officials and analysts argue that a US-Japan regional TMD system and strengthened alliance serve as a defensive deterrence to aggressive actions in the region and thus promotes security and stability. Diametrically opposed to this view, the Chinese assert that missile defenses, especially a cooperative US-Japan TMD system, do not contribute to East Asian security and are destabilizing. They insist that deployment of a TMD system would fuel an offense-defense arms race—a spiraling competition of ballistic missiles and antimissile defenses.

China's strongly divergent view is to some degree a manifestation of the intense, historically based distrust and animosity between the Chinese and Japanese. Because of Japan's brutal occupation of China before and during World War II and its refusal to officially acknowledge and apologize for its imperial past, the Chinese government for over 50 years has consistently conducted a campaign of anti-Japanese media programming for its citizens. Consequently, the Chinese people—across the full spectrum from oldest to youngest—collectively have a firmly inculcated, negative and suspicious view of Japan and its people.[53] Therefore, Chinese officials regard any Japanese military development, even defensive systems, as dangerous. They fear that any greater military role assumed by the Japanese in the US-Japan alliance, as cooperative TMD would necessarily entail, could erode Japan's military self-restraint and serve as a stepping stone for Japan's return to militarism and emergence once again as a great military power, perhaps within the first quarter of the twenty-first

century. To respond to this growing Japanese military power, China feels that it would have to continue to increase and strengthen its offensive forces. Additionally, Chinese analysts have argued that the so-called defensive TMD technologies can be used by Japan to build offensive missiles to threaten China's interests in the region.

Chinese, US and Japanese officials and analysts also hold different views of the regional threats and the rationale for deploying a TMD system. Citing North Korea's August 1998 test firing of the Taepo Dong-1 over Japanese territory, the United States and Japan contend that there is a growing missile threat from rogue nations and a threat of accidental or unauthorized nuclear launches, especially from China, which together more than justify the need to deploy a regional TMD umbrella to protect Japan, US personnel deployed in Northeast Asia, other allies and friends, and facilities. The Chinese believe the US and Japanese official views of the North Korean threat are merely a ruse to develop and deploy a regional TMD system aimed at countering China's growing power and influence in the region. After all, the phrase "regional TMD" implies protection against ballistic missiles fired from any country in the region. Statements such as Seizaburo Sato's, a security specialist at the Institute for International Policy Studies, Tokyo, validate China's suspicions: "North Korea provides a good excuse, but as a matter of fact the primary target is China."[54] The Chinese assert that if the threat is solely North Korean, then Japan's existing TMD systems provide sufficient protection. Countering, US analysts argue that Japan's current land-based TMD systems, the PAC-2 Pluses, are insufficient to protect against North Korean missile attacks and are deployed in an air-defense vice an antimissile mode.[55] Additionally, the Chinese note that the regional TMD system currently being cooperatively explored by the United States and Japan is, in effect, an NMD for Japan.

Perhaps the most important complicating issue between the United States, China, and Japan with respect to the current US-Japanese plans for cooperative TMD development is China's view of this effort with respect to Taiwan. Ultimately, the Chinese leadership would like to regain control of what it considers to be a renegade province. For

China, unification with Taiwan is a cherished national goal. In the past China's leaders have threatened the use of force if Taiwan formally declared independence, a Chinese government white paper released in February 2000 broadened the reasons that Beijing considered would justify the use of military force—specifically, "if Taiwan's authorities refused indefinitely 'the peaceful settlement of cross-Straits reunification through negotiations.'"[56] Believing that a US-Japan TMD system will also be clearly designed to counter China's ballistic missiles, then it would eliminate Beijing's only credible military option to bring Taipei to the negotiating table on China's terms. Reinforcing this belief is the joint US-Japanese decision to pursue R&D on an upper-tier, NTW-like TMD system. Such a ship-based system would have wide-area defensive coverage and be highly mobile; it could therefore be moved quickly to thwart Chinese actions against Taiwan. The Chinese argue that, even if there is no US or Japanese intent at the present time to use a missile defense system to protect Taiwan in the event of a cross-strait crisis, a ship-based TMD system will clearly provide the United States and Japan such a capability which they may then choose to use. Furthermore, based on extensive interviews conducted in 1996 and 1998 with military and civilian analysts in Chinese government think tanks and academicians at leading Chinese institutions, Christensen concludes that Chinese officials view the Japanese as more likely than the United States to oppose Taiwan's reintegration with the mainland. Christensen supports his conclusion with the following:

> Taiwan is a former Japanese colony (1895–1945). It is near international sea-lanes that are important to Japan. In addition, . . . Japan has a strategic interest in preventing Taiwan's high-technology and capital-rich economy from linking politically with the mainland. Moreover, some Chinese analysts view Taiwan as having geostrategic significance for Japan as a potential ally because of its location near the Chinese mainland.[57]

Perhaps of even greater concern to Beijing than the use of missile defenses by the United States or Japan in a possible future China-Taiwan contingency is that defensive weapons, such as a TMD system, deployed by Taiwan's allies and friends may bolster Taiwanese leadership's confi-

dence to declare permanent independence from China.[58] Preventing Taiwan from legitimizing the current territorial status quo, that is, *de facto* independence, is a high-priority Chinese security goal as evidenced by their ever increasing coastal ballistic missile deployments near Taiwan and their frequent veiled threats indicating a willingness to risk war to prevent others from intervening in their internal affairs. And Beijing's concerns and rhetoric do not appear to be diminished by the US's "three no's" policy that includes no support for Taiwan's independence.[59]

Summary and Conclusions

As emphasized in the Secretary of Defense's *1998 Annual Report to the President and the Congress*, ballistic missiles and the WMD and advanced conventional warheads North Korea and China can deliver already pose a serious threat for US deployed armed forces, allies and friends, and US overseas facilities. Despite the US's extensive non- and counterproliferation efforts, this threat is continually increasing. Responding to the urgency of this immediate threat, the DOD places its highest priority for ballistic missile defenses on developing and deploying regional TMD systems. The DOD's policy and acquisition strategy are to research, develop, and field TMD systems cooperatively with its allies for the benefits of burden sharing and increased system effectiveness, strengthened US-allied security relationships, enhanced US international counterproliferation efforts, and system interoperability between the United States and its allies. Nonetheless, because of the seriousness of the theater ballistic missile threat, even without allied cooperation, the United States intends to field regional TMD systems, especially in Northeast Asia.

For the last 10 years, US officials have worked diligently with the Japanese and South Koreans to establish a cooperative acquisition program that would lead to deployment of a single, integrated Northeast Asian regional TMD FoS to counter the ballistic missile/WMD threats of North Korea and China. Both countries have clearly demonstrated the strategic importance they place on their missile arsenals, the national priorities and commensurate re-

sources for improving and increasing their capabilities, and the willingness to use them in threatening ways against the United States, Japan, South Korea, and Taiwan. The United States has succeeded for the short term in securing a cooperative TMD R&D program with Japan. It is far too early to predict whether or not this cooperative venture will continue through all acquisition phases and result in deployment of some joint, regional TMD FoS. For sound reasons from their perspective, South Korea's leaders are adamantly refusing to partner with the United States and Japan in developing and fielding a regional TMD system and, instead, are pursuing development of an indigenous, offensive missile deterrent capability against Pyongyang.

The US's success with Japan has come at the cost of increasing the tensions between itself and China and between Japan and China. The Center for Nonproliferation Studies *Conference Report of the Second US-China Conference on Arms Control, Disarmament and Nonproliferation*, held in 1999, concludes that "the current controversy [over TMD] has escalated to the point at which it represents a serious threat to international security."[60] Although I would not categorize the TMD-heightened tensions as a serious international security threat, Chinese officials are boisterously appealing to the international community to oppose the United States led cooperative development of a TMD system because of their perception of the dangerous destabilizing effects it would generate if deployed in the Northeast Asian region. Heightening China's concerns and fueling its rhetoric is the US-Japanese choice of TMD systems for their three-year R&D effort—a sea-based and mobile NTW-like system. Although ostensibly chosen as the most cost-effective TMD system to counter the North Korean threat, this system would also be extremely effective and easily positioned to counter Chinese ballistic missiles, thus mitigating China's only means of coercing Taiwan over the next 15 to 20 year period until China has acquired more robust air and naval forces. To indicate their serious concerns about the impact a future US-Japan TMD capability may have on their ability to reintegrate Taiwan, the Chinese have issued numerous veiled threats about their willingness to risk war over Taiwan.

Given that the US-Japan cooperative TMD program is merely a three-year R&D effort at this point in time, with continued US-Japan cooperation beyond the R&D phase tenuous and uncertain, dealing with the Chinese concerns in a low-level fashion is probably sufficient. However, as a cooperative US-Japan (or US only) deployment of a Northeast Asian regional TMD begins to realistically materialize, the United States and Japan will need to seriously engage the Chinese and address their concerns. Although Chinese intentions will probably never be clear, reintegration of Taiwan into China has been and still is a repeatedly and emphatically declared Chinese national priority. Thus, a possibility the United States and Japan need to consider is that continued pursuit of a regional TMD capability without sincerely addressing Chinese concerns could push the Chinese to move forcefully against the Taiwanese well before a TMD system is deployed and the threat of their ballistic missile arsenal is diminished—a move that the Chinese would perhaps never make otherwise. Although I personally think that the probability of Beijing using force against Taiwan is extremely low,[61] with or without TMD deployment, it is not an impossibility. According to a recent *Washington Times* article, a Pentagon study of some 600 Chinese strategic writings by 200 Chinese military and party leaders revealed an extreme distrust of the United States.[62] Some of the military writings referred to the United States as a hegemon on par with Nazi Germany. And although stating that they wished to avoid a head-on confrontation with the United States until around 2030, Chinese military strategists noted that a war between the United States and China could erupt over Taiwan. Additionally, David Lampton, Nixon Center Director of Chinese Studies, recently testified before the US Senate Committee on Foreign Relations: "Beijing, I believe, currently is willing to lose a conflict with the United States [rather] than idly sit by and watch its long-term aspirations regarding Taiwan be ignored or jettisoned."[63]

Obviously, while proceeding forward with development of a regional TMD system, the United States and Japan need to increase their efforts in engaging Beijing and building mutual trust between political and military leaders. Renewed military-to-military talks and forums such as the

April 1999 *Second US-China Conference on Arms Control, Disarmament and Nonproliferation* sponsored by the Monterey Institute for International Studies are excellent approaches for building trust and resolving the real differences between the United States, Japan, and China on China's ballistic missile modernization and deployments and US-Japanese TMD activities. Building the necessary trust and resolving differences will be a long-term effort, but time is one resource that all three have in common—2012 is the earliest that the United States and Japan will be able to deploy a regional TMD system, and China's leaders have consistently shown that they are willing to allow time for the peaceful reunification of Taiwan into China as long as they perceive that they are progressing towards this cherished national goal. Although I am optimistic that the United States unilaterally or in cooperation with Japan (and other friends and allies) could deploy a regional TMD in Northeast Asia without provoking war with China, a historical example that may bear some relevancy to the current situation repeatedly surfaces in my thoughts: During October 1950, the Truman administration chose to ignore repeated warnings from the Chinese, convinced that since the United States did not intend to move offensively against China and could communicate this clearly to Beijing, the Chinese would not intervene militarily in response to American forces crossing the 38th parallel into northern Korea. As we know, the Chinese ultimately moved from merely warning to acting, with extremely unpleasant and enduring consequences for all involved.

Notes

1. *CIA Report on the Ballistic Missile Threat to the United States Through 2015*, September 1999, n.p.; on-line, Internet, 11 January 2000, available from http://www.usconsulate.org.hk/uscn/others/1999/0909.htm. The Taepo Dong-1 MRBM derives its name from the North Korean eastern coastal town of Taepo Dong which is about 10 kilometers from a facility used for test firing ballistic missiles.

2. National Institute for Defense Studies, *East Asian Strategic Review 1998–1999* (Tokyo, Japan: Defense Agency, 1999), 64–65. Although no country could verify that North Korea had orbited a small satellite, the United States and South Korea publicly stated that North Korea had failed in its attempt to orbit a small satellite with the Taepo Dong missile. Countering the US and South Korean statements, the Japanese Defense Agency concluded that "although the theoretical possibility of putting an

extremely small object into orbit by the launch method (employed by North Korea) cannot be ruled out entirely, the possibility that the ballistic missile carried a satellite capable of performing some significant function including communications and Earth observations is small. And it is highly likely that North Korea had launched the ballistic missile primarily for the purpose of testing various technology with a view to extending the range of its ballistic missiles."

3. Written Statement of Adm Dennis C. Blair, commander in chief, US Pacific Command, in House, *House Armed Services Committee on Fiscal Year 2000 Posture Statement*, 3 March 1999.

4. Evan Medeiros, *Second US-China Conference on Arms Control, Disarmament and Nonproliferation: Missiles, Missile Defenses and Regional Stability*, Conference Report, April 1999, n.p.; on-line, Internet, 21 January 2000, available from http://www.cns.miis.edu/cns/ projects/eanp/conf/uschina2/report.htm.

5. Richard D. Fisher Jr., "Building a More Secure Asia Through Missile Defense," *The Heritage Foundation Asian Studies Center Backgrounder*, no. 138, 24 October 1995, n.p.; on-line, Internet, 10 January 2000, available from http://www.heritage.org/library/archives/asc/asc_138.pdf. In 1985, then Secretary of Defense Caspar Weinberger invited Australia, Japan, and South Korea to participate in the Strategic Defense Initiative Program. Of the three invitees, only Japan responded positively. Beginning in 1987, Japan allowed its relevant private companies to participate in missile defense architecture studies with the US Department of Defense.

6. The White House, *A National Security Strategy for a New Century* (Washington, D.C., December 1999), 34-37; and Department of Defense, *The United States Security Strategy for the East Asia-Pacific Region* (Washington, D.C.: Office of the Assistant Secretary of Defense [Office of International Security Affairs], November 1998), 7-8.

7. Thomas J. Christensen, "China, the US-Japan Alliance, and the Security Dilemma in East Asia," *International Security* 23, no. 4 (Spring 1999): 50.

8. Ibid., 51.

9. Statement of The Honorable Jacques S. Gansler, under secretary of defense for acquisition and technology, in House, House Armed Services Subcommittees on Research and Development and Procurement, *FY 2000 Budget for Ballistic Missile Defense*, 25 February 1999, n.p.; on-line, Internet, 10 January 2000, available from http://www.acq.osd.mil/ousda/testimonies/bmd_testimony_final.htm. The Honorable Gansler stated, "In light of the widespread deployment of theater ballistic missiles today, the Department's immediate missile defense priority is to develop, procure, and deploy Theater Defense systems to protect forward-deployed elements of the US armed forces, as well as allies and friends, against cruise and ballistic missiles (as well as aircraft)."

10. *The United States Security Strategy for the East Asia-Pacific Region*, 24.

11. "North Korea, US to Meet on Missile Issues," *Arms Control Today*, July/August 1999, 29.

12. "Japan Concerned Over N. Korea Biochemical Warheads," 14 September 1999, n.p.; on-line, Internet, 12 January 2000, available from http://tmd.ggwdp.net/tmd25.htm#Japan Concerned Over N. Korea Biochemical Warheads.

13. "US Official Concerned on N. Korea Nuke Potential, China Likely Supplier," *Inside China Today*, 5 February 2000, n.p.; on-line, Internet, 8

February 2000, available from http://www.insidechina.com/news.php3?id=132214.

14. Stephen A. Cambone, "The United States and Theatre Missile Defence in Northeast Asia," *Survival* 39, no. 3 (Autumn 1997): 66–84. See also Michael Jonathan Green and Nagashima Akihisa, "Key Areas to Watch in Japan-US Security Relations," *Japan Quarterly*, January-March 1999, 17–22 and "US Official Concerned on N. Korea Nuke Potential, China Likely Supplier." In the CIA report released in February 2000, it is stated that the US intelligence community assesses that North Korea has produced enough plutonium for at least one, and possibly two, nuclear weapons.

15. Taewoo Kim, "South Korea's Missile Dilemmas," *Asian Survey* 39, no. 3 (May–June 1999): 486–503.

16. Richard D. Fisher Jr., "Time to Stop North Korea's Missile Blackmail," *The Heritage Foundation Executive Memorandum*, no. 550, 8 September 1998, n.p.; on-line, Internet, 12 January 2000, available from http://www.heritage.org/library/execmemo/pdf/em_550.pdf.

17. Cambone, 67.

18. Richard D. Fisher Jr., "China Increases Its Missile Forces While Opposing US Missile Defense," *The Heritage Foundation Backgrounder*, no. 1268, 7 April 1999, n.p.; on-line, Internet, 12 January 2000, available from http://www.heritage.org/library/backgrounder/bg1268es.html.

19. *Ballistic and Cruise Missile Threat*, National Air Intelligence Center NAIC-1031-0985-99, April 1999, n.p.; on-line, Internet, 10 September 1999, available from http://www.fas.org/irp/threat/missile/naic/index.html. The DF-15 is alternately referred to as the M-9 or CSS-6. Likewise, the DF-11 is also designated as the M-11 or CSS-7. See also David G. Wiencek, *Dangerous Arsenals: Missile Threats In and From Asia*, Bailrigg Memorandum 22 (Lancaster, United Kingdom: Centre for Defence and International Security Studies, 1997), 11–20.

20. Fisher, "China Increases Its Missile Forces While Opposing US Missile Defense."

21. Gary Klintworth, "To TMD or Not to TMD," *Free China Review*, September 1999, n.p.; on-line, Internet, 21 January 2000, available from http://www.fas.org/news/taiwan/1999/R9909p42.htm.

22. Fisher, "China Increases Its Missile Forces While Opposing US Missile Defense."

23. *Ballistic and Cruise Missile Threat.*

24. Ibid.

25. Fisher, "China Increases Its Missile Forces While Opposing US Missile Defense." Fisher provides convincing evidence that the Chinese are probably pursuing MIRVing of the DF-5. He obtained possible evidence that China is developing new, smaller reentry vehicles when attending the 1998 Zhuhai Air Show. Also, the Chinese Long March CZ-2C/SC SLV used to place 10 (as of April 1999) Iridium communications satellites on orbit is a slightly modified version of the DF-5 ICBM. And both government and industry sources have stated that the Iridium launch bus could be quickly converted for small nuclear warheads.

26. Ibid.

27. Wiencek, 8.

28. Ibid.

29. "Chapter 6: Missile Defenses," *1998 Secretary of Defense Annual Report to the President and the Congress*, n.p.; on-line, Internet, 21 January 2000, available from http://www.fas.org/man/docs/adr_99/chap6.html.

30. Stephanie Mann, "Missile Defense: US & Asia," 18 March 1999, n.p.; on-line, Internet, 21 January 2000, available from http://www.fas.org/news/japan/990318-japan-tmd.htm.

31. The Honorable Paul G. Kaminski, under secretary of defense for acquisition and technology, "Cooperating in a Competitive Environment," remarks, Center for Strategic and International Studies Inaugural Conference on From Shadows to Substance: Defining an Action Plan for Transatlantic Defense Cooperation, 27 February 1995, n.p.; on-line, Internet, 21 January 2000, available from http://www.acq.osd.mil/ousda/speech/competitive_env.html.

32. Green and Akihisa, 21.

33. Fisher, "Building a More Secure Asia Through Missile Defense."

34. Michael C. Sirak, "United States, Japan Finalize Deal on Navy Theater Wide Cooperation," *Inside Missile Defense* 5, no. 17 (25 August 1999): 12.

35. Robert Wall, "US, Japan Agree on Cooperative Missile Defense," *Aviation Week & Space Technology* 151, no. 8 (23 August 1999): 46.

36. Michael C. Sirak, "US-Japan Cooperation on TMD Research Awaits Diet Budget Process," *Inside Missile Defense*, 27 January 1999, 3.

37. "Standard Missile," n.p.; on-line, Internet, 12 January 2000, available from http://www.flthlpdsk.chinalake.navy.mil/help2/weapons/surflaunch/standard.htm,

See also "Navy Theater-Wide Missile Defense (NTWMD)," n.p.; on-line, Internet, 12 January 2000, available from http://www.boeing.com/defense-space/missiles/ntwmd/index.htm. The Standard Missile is an all-weather, ship-launched, medium- to long-range, fleet air defense missile system family that provides advanced air defense for an entire fleet area. On 24 January 1997, the Navy successfully demonstrated a TMD capability when a modified Standard Missile-2 Block IV destroyed an in-flight Lance theater ballistic missile. The NTW system will use a new missile designated the Standard Missile-3. The Standard Missile-3 will be developed from the Standard Missile-2 Block IV by removing the warhead and radar seeker from the nose and replacing it with a third-stage kick motor plus kinetic kill vehicle and modifying the associated software.

38. Sirak, "United States, Japan Finalize Deal on Navy Theater Wide Cooperation,"12.

39. Information is derived from personal discussions with embassy personnel in March 2000 during an Air War College Regional Studies trip to Japan and South Korea.

40. Shawn W. Crispin and Susan V. Lawrence, "In Self-Defence," *Far Eastern Economic Review* 162, no. 26 (1 July 1999): 24.

41. Ibid.

42. Ibid.

43. "S. Korea Refuses Participation in TMD," *Jane's Defence Weekly* 31, no. 11 (17 March 1999): 16.

44. Barbara Opall-Rome, "Seoul Seeks Medium-Range Missile Force," *Defense News 14*, no. 9 (8 March 1999): 1. These same points were made by US embassy personnel in Seoul, Republic of Korea, when I asked them in March 2000 about prospective South Korean participation in a US-Japan-South Korea cooperative TMD development and deployment program.

45. Shim Jae Hoon and Shawn W. Crispin, "Different Drummer," *Far Eastern Economic Review* 162, no. 26 (1 July 1999): 26.

46. Opall-Rome, 1.

47. Capt George A. Hutchinson and Craig M. Brandt, "International Armament Cooperation and Theater Missile Defense: Why South Korea is

Reluctant to Join the Club," *Air Force Journal of Logistics* 23, no. 3 (Fall 1999): 24. See also "South Korea," n.p.; on-line, Internet, 21 January 2000, available from http://www.fas.org/irp/threat/missile/skorea.htm. Through reverse engineering and modifications of US-supplied Nike Hercules surface-to-air missiles, South Korea has produced two versions of a two-stage, solid-fuel surface-to-surface missile. They are designated NHK-1 and NHK-2 with ranges of 180 and 260 km and payloads of 500 and 450 kg, respectively.

48. Hoon and Crispin, 26.

49. "The Missile Technology Control Regime," *The Arms Control Association Background Paper*, July 1999, n.p.; on-line, Internet, 21 January 2000, available from http://www.armscontrol.org/FACTS/mtcr.html. The Missile Technology Control Regime is an informal export control arrangement among 32 nations, including some of the world's most advanced suppliers of ballistic missiles and missile-related materials and equipment. The regime is designed to stem the spread of ballistic and cruise missiles capable of delivering a 500-kilogram payload 300 km or more, by establishing a common export control policy (the guidelines) and a shared list of controlled items (the annex) that each country implements with its own national legislation. The MTCR is neither an international treaty nor a legally binding agreement. MTCR members voluntarily pledge to adopt the regime's export guidelines and to restrict the export of items contained in the regime's annex. While all nations have been encouraged to abide by the MTCR's terms, not all states have been invited to become formal regime members. A number of nonmember states have made public and legislative commitments to adhere unilaterally to the MTCR Guidelines and Annex. South Korea is one of these nonmember adherents.

50. Opall-Rome, 1.

51. Jun Kwan-Woo, "Korean and French Firms Plan Missile Venture," *Space Daily*, 7 February 2000, n.p.; on-line, Internet, 8 February 2000, available from http://www.spacer.com/spacecast/news/korea-00c.html.

52. Greg May, "Thinking About TMD: Relations with China and Asia's Stability," *Nixon Center Program Brief 5*, no. 2 (6 January 1999): n.p.; on-line, Internet, 28 December 1999, available from http://www.nixoncenter.org/publications/Program%20Briefs/vol5no2TMD.htm.

53. Christensen, 54.

54. Cameron W. Barr, "The Concept: An Asian Missile Shield," *Christian Science Monitor* 91, no. 92 (8 April 1999): 12.

55. Medeiros. The PAC-2 Plus is a subconfiguration of the PAC-2 Patriot missile defense system. It does not have the enhancements of the PAC-3 system that is currently under development and which will be a significant advance over the PAC-2. The PAC-3 will incorporate significant radar improvements, software enhancements, advanced remote launch/communications capabilities, and joint interoperability with other TMD systems like the THAAD system. Additionally, the PAC-3 will use a new interceptor armed with a kinetic kill vehicle rather than fragmentation warheads. See also *Report to Congress on Theater Missile Defense Architecture Options for the Asia-Pacific Region*, 8. A comprehensive analysis of the architecture requirements for the defense of Japan from limited theater ballistic missile attacks by North Korea only (China was not included) resulted in a requirement of more than one hundred PAC-3-like TMD systems for countrywide defense. The PAC-3-like configuration analyzed consisted of remotely linked PAC-3 systems (for extended battlespace) integrated with THAAD-like radars for enhanced cueing information.

56. Steven Mufson and Helen Dewar, "Pentagon Issues Warning to China: US Officials Criticize Beijing White Paper Backing Use of Force Against Taiwan," *Washington Post*, 23 February 2000, 16.

57. Christensen, 63.

58. "China Opposes Inclusion of Taiwan in TMD," *Beijing Review* 42, no. 36 (6 September 1999): 7.

59. The "three no's" policy was stated by President William Jefferson Clinton in Shanghai during the June 1998 Sino-United States summit: no United States support for Taiwan's independence; no support for two Chinas or one China, one Taiwan; and no support for Taiwanese entrance into international organizations for which statehood is a prerequisite.

60. Medeiros. This three-day conference was attended by over sixty US and Chinese government officials and nongovernmental experts for discussions of China's increasing ballistic missile deployments and the bilateral disputes of the US's plans to deploy a NMD system and TMD technology sharing with Japan and Taiwan. The main goals of the conference were to (1) identify the nature and scope of the key differences related to ballistic missile deployments, missile defenses, and regional stability; (2) develop a range of possible solutions to address US defense requirements and Chinese security concerns; (3) enhance US and Chinese understanding of the policy trends and key people and institutions involved in internal discussions about missile deployments, missile defenses, and regional security; and (4) promote interactions between US and Chinese arms control officials and experts to exchange information and insights, coordinate activities, and open new lines of communication.

61. This personal opinion is based on my research for this paper and discussions with a retired US Navy admiral who served on the US Pacific Command's staff. The Chinese do not currently have the capability, nor will they obtain the capability within the next 15 to 30 years, to prevent the United States from responding should they decide to use military force to repatriate Taiwan. And if the United States decided to oppose China, the Chinese could not prevail. Additionally, China has too many compelling reasons not to wage war against Taiwan. Around 40,000 Taiwanese businesses have invested approximately $40 billion within the Chinese mainland, contributing substantially to the Chinese leadership's current, top-priority goal of economic modernization. One-third of the total output of Taiwan's information industry is produced by mainland Chinese plants. China is Taiwan's largest consumer market, and Taiwan is China's first-ranking supplier. A war against Taiwan would likely result in China being treated by the international community as a pariah nation, rapidly ensuring derailment of this foremost national goal. Lastly, war against Taiwan could lead to the military rearmament of Japan, something China wants to avoid at all costs.

62. Bill Gertz, "Pentagon Study Finds China Preparing for War with US," *Washington Times*, 2 February 2000, 4.

63. David M. Lampton, "Enhancing Global, Regional, and Taiwan Security for the Twenty-First Century," testimony before the US Senate Committee on Foreign Relations Hearings on S. 693, The Taiwan Security Enhancement Act, 4 August 1999, n.p.; on-line, Internet, 20 March 2000, available from http://www.nixoncenter.org/publications/testimony/8_4_99tsea.htm.