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This is a monthly publication intended to provide U.S. Government decision-makers, action officers, and analysts with timely and noteworthy unclassified information on international attitudes towards weapons of mass destruction and efforts to curb their proliferation.

This product seeks to combine the skills and capabilities of subject matter specialists with those of foreign language experts to gain insights into issues that are shaping the proliferation landscape.

Our goal is to assist our readers in planning for today's issues and those that may be just over the horizon.

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CRITICS URGE MORE ACTIVE ARAB ROLE IN IRANIAN NUCLEAR NEGOTIATIONS TO COUNTER TEHRAN'S GROWING INFLUENCE, WHILE LEARNING FROM IRAN'S EXAMPLE

During the summit of 2006, as the West awaited Iran's decision on whether it will suspend sensitive elements of its nuclear program in return for a package of incentives, Arab observers appeared to be growing increasingly uneasy. Their core concern is that the Arab states will be little more than spectators as Tehran and the West strike a grand bargain that they fear will likely reshape the Middle East and confirm Iran as the region's dominant political power.

Since June 2006, numerous reports and articles in the Arab media have criticized the lack of initiative and involvement of Arab governments in the on-going negotiations, implying Arab governments have become too complacent about issues that could profoundly affect their own interests. A common theme of some recent articles is the suspicion that Iran will reach an agreement with the United States at the expense of Arab interests. While it may be difficult for Western analysts to comprehend Arab concerns of an Iranian-American rapprochement in light of the long-standing hostility between Washington and Tehran, many Arab analysts believe nevertheless that the United States colluded with Iran in the overthrow of Saddam's nationalist Arab regime in Iraq and that cooperation is continuing between American forces and Shi'a Iraqi parties closely allied with Iran.

Some Arab analysts fear that an Iranian deal with the United States will bring the region back to the days of the Shah and Iran's undisputed military hegemony in the area, a time when Iran was viewed

as the "policeman of region." There is also concern that following a rapprochement with the West, Iran will exert pressure and intimidate many of its smaller Arab neighbors. In the same vein, and in order for Arabs to be the masters of their own destiny, there are calls for Arab governments to transcend narrow national interests and adopt a more unified and assertive stance against Iran's reemergence, calls which echo appeals of previous decades for Arabs to unite to face a threat from Persia.

Raghda Dergham, a reporter for *Al-Hayat*, which is a London-based Arab-language daily distributed throughout the Middle East, decried the lack of Arab involvement in these negotiations, writing: "The West is getting close to a deal with Iran... and the Arabs, where are the Arabs?" She urged Arab governments to voice their concerns over the shaping of the Middle East, in general, and the Persian Gulf region, in particular, adding that "Gulf countries have the ability to use their influence emanating from oil and their close political and security ties to avoid being overlooked in the

Iranian issue.... Arab countries should take part in shaping the region." [1] Similarly, *al-Jazeera's* popular TV segment "*Ma Wara' al-Khabar* [Behind the News]," commentator Mundir Souleiman, argued that the position taken by Arab countries should not simply follow the United States, but should take into account their own strategic interests in terms of their relation's with Iran. [2]

An op-ed piece in *Asharqalawsat*, a London-based pan-Arab daily published throughout the Middle East, struck a similar note, with analyst Salih al-Kallab stating, "The Americans and the Iranians are about to reach a historic agreement based on balancing the interests of the two parties by rendering unto God what is God's and unto Caesar what is Caesar's and redesigning the map of this region." Further explaining the point, he continued, "The West will be compelled to accept the solution offered by the Iranians: to trade the military part of



Iranian chief nuclear negotiator Ali Larijani (left) with EU Foreign Policy Chief Javier Solana (right)
Source: www.farsnews.com.



Iran's nuclear capabilities for a major regional role in the Middle East." This, he concluded, will result in "the functional division of roles between Tehran and Washington [that] is more than a mere worry for some Arab countries." [3] Another piece in *Al-Hayat* identified specific issues on which Iran might take a growing role, stating that Iran had pledged to "cooperate with the international community regarding regional and Middle Eastern crises and bring peace and stability to the region, including [with respect to] Afghanistan, Iraq, Palestine, and the Syrian-Lebanese issue and start direct negotiations with the U.S. regarding mutual interests." [4]

Appearing on al-Jazeera's "Ma Wara` al-Khabar [Behind the News]," on August 14, the day a ceasefire halted the Israel-Hezbollah conflict in Lebanon, Mustafa Allabad, editor of the Arabic magazine *East Nama*, underscored Arab concerns: "If 'god forbid' a battle erupts between Washington and Iran," he stated, "the losers and those who will pay the price are the Arab countries, which will be caught in the crossfire in this confrontation. I think the time has come to formulate a united Arab political stance, not necessarily with Iran or against it, but to protect Arab interests. But truthfully, the only two trends in the current regional climate are the American Israeli project and the Iranian project." [5] ("Project" apparently refers to a policy of military force or the plan to use military force in the region.)

Also fueling Arab anxieties is that the incentive package offered to Iran has received the approval of the United States, which is considered in some Arab circles as amounting to a tacit recognition of the Iranian Revolutionary government and as a first step towards negotiation and bartering between the United States and Tehran. The package reflects the willingness of the U.S. administration to "co-exist with the Islamic Republic of Iran [which is] headed by theocrats" and potentially to resume relations should there be a need to do so. [6]

A piece in the Pan Arabist *al-Quds al-Arabi*, struck a more assertive note, arguing that Arab leaders should take the current nuclear negotiations as a valuable lesson. It stressed that Arab leaders should see these negotiations as a victory for Iran's steadfast approach, which "forced the U.S. to give up its former aggressive attitude. This was the result of the Iranian leadership's perseverance and the fact that Iran has gained the largest possible

number of cards that it can use to put pressure on the U.S. especially in Iraq." [7] It added that Arab leaders should refrain from being mere followers of the United States and pursue a more assertive posture following Iran's example.

On July 27, at the height of the Israel-Hezbollah conflict in Lebanon, Egyptian security analyst Salamah Ahmad Salamah reiterated the theme that Arab countries, especially Egypt, should emulate Iran's resolute behavior, focusing specifically on the nuclear sector. In an unusually explicit commentary in the English-language version of *al-Ahram*, (a weekly version of the Cairo daily, which is closely linked to the Egyptian government), he wrote:

We should compare our conditions and actions with those of Tehran. Iran has doggedly pushed on with its nuclear program in the face of fierce U.S. and European opposition. Iran has been cajoled and threatened, offered carrots and sticks, and it refused to listen. Iran refused to trade its nuclear program for a bag of poisoned sweets. We, on the other hand, buckled at the first temptation. Egypt and other Arab countries gave up their nuclear programs in the 1970s and 1980s because we were told to do so or else were frightened in the wake of Chernobyl. Whatever the motives, Arab populations were duped and now have to pay homage to a scientifically and militarily superior Israel.... I do not know how far Iran is from having nuclear weapons. Suffice it to say that whatever progress it has made, it has scared its foes.... Iran is standing up to the United States and Israel, and because it is doing so has a chance to escape the tragic fate of Lebanon. Had one Arab country, say Egypt, refused to bow to threats and listen to temptations, we would have had nuclear weapons, just as Israel, India, Pakistan, and North Korea do. And things would have been different in this region. We would not have been watching the rape of Lebanon. We would not have seen the United States throwing its weight around the region. We would have had nuclear parity, and with it some respect. The humiliation and helplessness that we now feel could have been avoided had we acted in a timely manner, had we had more foresight, and had the strength to stand up for our rights. [8]



The mid-July to mid-August 2006 war between Israel and Hezbollah is likely to have a deep impact on the region. It is too early to tell, however, what effect the conflict will have on Arab views of the Iranian nuclear negotiations. While some governments may view Tehran's growing influence in the region with added alarm, others may gravitate to Iran, reflecting Hezbollah's increasing popularity on the Arab street. In either case, Arab governments may well be stimulated to engage more assertively in the Iranian nuclear negotiations, as their critics have demanded – either to contain Iranian influence in the region, or to support Tehran in its resistance to the demands of Western powers.

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SAUDI BALLISTIC MISSILE BASES: PROSPECTIVE TARGET FOR MILITANTS?

On May 30, 2006, high-resolution satellite images of Saudi missile bases and details of Saudi ballistic missile capabilities were posted on the Islamist website *al-Khayma*. Although not the website of an operating Jihadi group, *al-Khayma* has in recent months posted numerous pro al-Qaeda communiqués and other material, including coverage of the abduction and execution

of the Egyptian ambassador to Iraq and the death of Abu Musab al-Zarqawi. The presence of Saudi missile base information on an Islamist website may indicate future interest by Islamist groups in attacking such sites. [1]



CSS-2 Ballistic Missile
Source: [www.fas.org]

The satellite images posted on *al-Khayma* were captured and translated mainly from non-governmental Western arms control websites. They were introduced with a verse

from the Koran focusing on the necessity to build strength to face the enemy and a saying of the Prophet Mohammed stressing secrecy in whatever endeavors are undertaken. This is followed by a history of Saudi missile procurement and a description of the Saudi Arabia's CSS-2 ballistic missile, including such technical aspects as its range, accuracy, payload, warhead type, guidance system, physical measurements, fuel type, and the time needed to launch the missile. All of this material is presented in Arabic. [2] This is followed by a number of detailed satellite images of the *As Salil* base in Saudi Arabia, about 500 km south of Riyadh, where some of the CSS-2s are housed.

Riyadh acquired several dozen CSS-2 "East Wind" missiles from China between 1986 and 1988, a purchase that was reportedly discovered by the United States in March of 1988. [3] The missiles, which have a range of 2,500 kilometers and a reported payload of 2,000 kilograms, are capable of hitting numerous targets in the Middle East, including Tel Aviv and Tehran, thus providing Saudi Arabia one of the most advanced missile capabilities



in the region. Indeed, the CSS-2 is thought to be the longest range ballistic missile system in the Middle East, with the possible exception of Israel's Jericho II system. The CSS-2 uses liquid fuel and has a launch preparation time of 120 to 150 minutes. [4] The relatively inaccurate system (with only a 50 percent likelihood of landing within 2.5 kilometers of its target) was designed for use with nuclear warheads. Saudi Arabia has declared, however, that its CSS-2s carry only conventional high explosives and has pledged not to manufacture nuclear weapons. Riyadh reinforced this pledge by joining the nuclear Nonproliferation Treaty (NPT) in 1988.

It is important to clarify that this specific posting on *al-Khayma* did not advocate an attack on the Saudi missile bases. The posting is significant, nonetheless, because postings on Islamist websites have often followed a progression in the past where initially, informational text and pictures concerning a particular topic are posted and then, as the topic gains interest among the online Islamist community, subsequent postings evolve into elaborate Jihadi training manuals and/or overt calls for targeting relevant locations or capabilities.

A clear example of this progression can be seen in nuclear-weapon related postings on Islamist websites. For example, *Al-Khayma* was among the first to post an informational nuclear text in late 2004, which dealt with the history of nuclear weapons and included some rudimentary diagrams. It was mainly an Arabic translation of a document written by an individual or group with the online moniker "Outlaw Labs" that is currently posted on various American websites. [5] In the following months, numerous additional nuclear texts were gradually posted on other Islamist websites, each reflecting increased knowledge and displaying increased hostility. The most important nuclear posting is the "Nuclear Preparation Encyclopedia," which was posted on *al-Firdaws* operational Jihadi website in October 2005. [See "*Al-Qaeda Jihadi Website Publishes 'Nuclear Preparation Encyclopedia,'*" WMD Insights, January 2006, http://www.wmdinsights.com/11/ME1_Al-Qaeda.htm]. This "encyclopedia," which appeared more sophisticated than previous postings, included unverified information about critical mass and the amount of fissile material needed in the construction of nuclear weapons. Additionally, it provided various sketches and

diagrams in English and Arabic of purported gun-type and implosion-type nuclear warheads, and declared the information was "a present to the Amir [Captain] of the Mujahideen Sheikh Usama Bin Laden, God bless him, for the Jihad in the path of God." [6]

The posting concerning Saudi ballistic missiles on *al-Khayma* does not contain operational information regarding the possible vulnerabilities of these systems to attack and does not call for action to be taken against them. It would not be surprising, however, if this initial posting spurred increased interest in the topic and led to publication of more inflammatory commentary regarding the Saudi systems in the future on this website or others.

Nonetheless, it is important to note that in the past several years Saudi Arabia has endured domestic terrorist attacks on a variety of targets, including a series of bombings in May 2003 of residential areas housing foreign nationals; an attack in December 2004 on the U.S. consulate in Jeddah; and a thwarted attempt in February 2006 to severely damage the world's largest oil refinery at *al-Baqaiq* [7]. Al-Qaeda has taken responsibility for each of these attacks. Some observers note that the attempted attack against the *al-Baqaiq* oil refinery constituted a shift in al-Qaeda's strategy away from attacking Westerners and focusing instead high-visibility, "critical infrastructure" assets of the Saudi state.[8]

Given this apparent realignment, it is not unlikely that the network will attempt to attack additional symbols of Saudi power, possibly including military sites, in the hope of undermining Riyadh's authority. In this context, al-Qaeda might consider the destruction of one or more CSS-2s at the *As Salil* missile base to be a particularly attractive objective, although defeating security at the site would likely pose significant challenges.

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INDIA'S AGNI III MISSILE TEST MAKES FEW WAVES ABROAD, MORE AT HOME

On July 9, 2006, India conducted its first test of an intermediate-range ballistic missile, bringing it one step closer to joining the small group of states to possess such capabilities. Although the test was unsuccessful, the development of the missile, designated the Agni III ("fire" in Hindi), has considerable implications for the region. With an expected range of between 3,000 and 4,000 km, this nuclear-capable missile would put major cities in eastern China, including Beijing and Shanghai, within India's reach for the first time. [1] In spite of such implications and the fact that the test came only five days after North Korea's widely condemned firing of seven missiles, including the unsuccessful

test of the 5,000-6,000 km range Taepodong II, the Agni III launch received little international attention and subdued official reaction from the few states that did comment on the development. The response highlighted the readiness of foreign governments to distinguish between military advances made by a state perceived to be a responsible member of the international community and those pursued by a nation perceived as a repeated violator of international norms. Within India, however, the failure of the Agni III test triggered extensive criticism among domestic observers.

Background

The Agni III is the latest component of India's Integrated Guided Missile Program (IGMP), which began in 1983 and has been overseen by India's Defense Research and Development Organization (DRDO), a wing of the Indian Defense Ministry. The test of the missile was originally scheduled for November 2004. However, the launch was repeatedly postponed for technical and political reasons, most recently due to concerns that it might negatively affect the consideration by the U.S. Congress of a pending agreement, which was signed by President George W. Bush and Indian Prime Minister Manmohan Singh on July 18, 2005, to reopen U.S. nuclear cooperation with India after a decades-long U.S. embargo. [2] According to Indian press accounts, however, the DRDO was given a "green light" for testing after both the visit to India of U.S. Chairman of the Joint Chiefs of Staff General Peter Pace in June 2006, in which he declared that he did not see a test as destabilizing, and after favorable votes on the U.S.-India nuclear agreement in two key U.S. Congressional committees on June 27 and 29. [3]

While the launch of the Agni III missile began with a successful firing of its first stage, the missile's second stage failed to separate shortly after lift-off, causing the missile to crash into the Bay of Bengal less than 1,000 km from its launch site. The exact reason for this failure has yet to be determined. DRDO scientists have highlighted that a number of new technologies were used in the missile, and it is possible that one or more of these may have been the cause of the failure. [4] The day after the test of the Agni III, India suffered a second setback when its launch of a Geostationary Satellite Launch



Vehicle (GSLV), developed by the Indian Space Research Organization (ISRO), failed. Both the launch vehicle, which is India's most powerful civilian rocket, and the communications satellite it was attempting to place into orbit were destroyed by ground controllers when the GSLV veered off course shortly after launch. [5]

India and North Korea: A Tale of Two Tests

The July 9 Agni III test followed North Korea's unsuccessful flight test on July 5 (local time, July 4 in the United States) of a similar system known as the Taepodong II, a long-range nuclear-capable missile, which is considered to have the potential to reach Hawaii, Alaska, and possibly the California coast. The North Korean test, which was accompanied by the firing of some six less capable missiles, including several short-range Scud C and medium-range Nodong missiles, was met with intense international criticism. Japan and the United States were particularly vocal in their condemnation of the North Korean firings, which appeared deliberately timed to coincide with the U.S. Independence Day holiday.

Contributing to concerns was that the test of the Taepodong II and launch of the Nodongs ended a voluntary moratorium that North Korea had adopted in 1998 on tests of its longer range missiles. In recognition of that moratorium, in 2000, the United States had lifted certain sanctions on North Korea including a travel ban, a broad trade ban, and restrictions on investment and remittances. [6]

The reaction to the North Korean tests led to an emergency meeting of the United Nations Security Council that resulted in a unanimous July 15, 2006, Security Council resolution demanding that North Korea halt its missile program. Security Council Resolution 1695 also imposed a mandatory ban on transfers by any UN member state of missile-related equipment or technology to North Korea and on the transfer of funds to that country intended to support the North Korean missile program. [7]

Although the Agni III launch, like that of the Taepodong II, was conducted by a state possessing nuclear weapons and involved a missile that could eventually pose a new threat to a potential adversary, the Indian launch inspired little comment.

Japan

Japan, which was at the forefront of the stern international reaction to the North Korean missile tests, was the only state to publicly express displeasure or concern over the Agni III launch.

The day after that event, the deputy director of the Oceania Affairs Bureau of the Foreign Ministry of Japan informed the Indian embassy in Tokyo that India's launch was contrary to international disarmament and nonproliferation efforts. He went on to state that, "It was especially regrettable that the test was conducted at a time when Japan and others in the international community have been working to secure regional peace and stability over North Korea's missile launches." [8]

Even this, however, was a mild rebuke. Japan, which has been a vocal proponent of disarmament, in particular nuclear disarmament, had issued critical statements in response to India's previous ballistic missile tests, as contrary to disarmament and non-proliferation norms. In this case, Japan's expression of dismay appeared to be directed primarily at the timing of the test, rather than at India's development of long-ranged ballistic missiles, per se. Japan undoubtedly feared that the Indian test might be taken as evidence that testing long-range nuclear-capable missiles was an acceptable practice, thereby undercutting Tokyo's call to condemn North Korea's tests as a "threat to international peace and security," under Chapter 7 of the UN Charter. Such a finding was needed to provide the legal basis for the imposition of mandatory UN sanctions against Pyongyang.

United States

The U.S. response to the Agni III test was equally muted. The Bush Administration did not issue a





statement on the attempted launch, preferring to respond to queries from reporters, and avoiding criticism of the Indian test. White House Press Secretary Tony Snow, for example, responded to a question regarding the North Korean and Indian tests by stating:

There is a significant difference and a noteworthy difference between India and North Korea. India has pursued its program in such a way as not to be a threat or provocation to its neighbors.... North Korea, meanwhile, not only defied the express wishes of its neighbors and others in the neighborhood [who in the weeks prior to the Taepodong test had called on North Korea to desist], it also fired missiles as a provocation, without warning, to others, and therefore, has created the diplomatic activity that you now see. [9]

Furthermore, Snow indicated that, even if North Korea had given prior notice of its decision to test its missiles, Washington would have objected to the missile launches because North Korea had previously agreed to implement a moratorium on testing longer range systems. (As of late July 2006, the United States was considering the re-imposition of the sanctions on North Korea that it had lifted in 2000 in conjunction with the moratorium.) [10]

One important U.S. objective in signing the July 18, 2005, nuclear agreement with India, it may be noted, has been to strengthen ties to India as a strategic counterweight to China in Asia. [11] U.S. failure to object to the Agni test publicly, after Washington was notified that a test was impending, and the Bush Administration's subsequent avoidance of criticism of the launch would be consistent with this broad U.S. goal, given the Agni III's potential importance to Indian nuclear deterrence vis-à-vis China.

Australia

Australia adopted a stance in response to the Agni III test that balanced several factors. It urged restraint in the further testing of missiles in South



Asia, but stressed that the Indian tests could not be equated with those conducted by North Korea. A spokesman for the Australian Department of Foreign Affairs and Trade (DFAT), stated, "We hope that India and Pakistan will exercise restraint in their ballistic missile program and continue the process of building confidence between them." He also noted that India had notified Pakistan in advance of the test, in accordance to pre-existing bilateral confidence-building arrangements; North Korea did not provide pre-notification of its tests to any of its neighbors. In addition, the spokesman noted, "North Korea has been a leading supplier of missile-related exports to countries seeking to acquire ballistic missile capabilities. India, in contrast, has undertaken to implement missile export controls equivalent to the Missile Technology Control Regime (MTCR)." [12] Like Japan, Australia also recognized, however, that efforts to restrain the North Korean missile program may be undermined by testing elsewhere in Asia.

In commenting on the Agni III launch, Australian foreign affairs analyst Greg Sheridan highlighted that, "the proliferation of missiles in Asia is of first-order importance to Australia." [13] While also noting that North Korea poses a particular proliferation challenge for both nuclear weapons and missiles, Sheridan pointed out that the increasing development of long-range missiles in Asia reduces the defensive benefit provided by Australia's geographic distance from the states developing such technology. This consideration suggests that, regardless of the context, the development of long-range missiles in Australia's neighboring region is still seen as a potential strategic challenge.

China

The countries most concerned with the further development of India's ballistic missile capabilities are its regional strategic rivals, China and Pakistan. China in particular has a stake in the evolution of India's Agni III program because, as noted, the missile would give India the ability for the first time to target certain key Chinese cities with nuclear





weapons. While Indian defense analyst C. Uday Bhaskar rejected the notion that the Agni III is oriented towards China, stating that, "any strategic capability is not aimed at any particular nation," another prominent Indian strategic analyst, K. Subramanyan, specifically described the Agni III as a deterrent against China. [14] [15] Subramanyan further asserted that building such a deterrent and building relations with China are not mutually exclusive endeavors: "If India were to borrow a lesson from China, it is possible to develop the Indian missile as well as improve relations with Beijing," adding, "That is what the Chinese did vis-à-vis the U.S." [16]

In spite of such strategic implications for China, Chinese analysts somewhat surprisingly have not reacted to the Agni III program with alarm, seeing it as a symbol of Indian prestige to demonstrate India's emergence as a power with global ambitions and not simply as an anti-China weapon. The recent strengthening of Sino-Indian military confidence building measures, in particular the May 29, 2006, signing of a bilateral memorandum of understanding on defense, has also served to reduce tensions. [17] In the past, China has not issued strongly negative reactions to Indian missile tests, and the lack of any official response to the Agni III test beyond casual reporting in the official news media is not surprising in the context of delicate, but improving Sino-Indian relations. It is also possible that Beijing avoided comment on the Agni III to avoid elevating India's importance by suggesting that China was concerned about New Delhi's growing nuclear missile capabilities.

Pakistan

The official Pakistani reaction to the test was simply to confirm that India had provided notice of its intentions beforehand in accordance with a bilateral agreement on missile testing, signed in 2005. When asked whether the Indian test was discussed during a subsequent meeting between Pakistani Foreign Minister Khurshid



Kasuri and U.S. Secretary of State Condoleezza Rice on July 10, 2006, Kasuri responded that the issue was not discussed because Pakistan, like India, considers itself free to conduct missile tests of its own, when necessary. [18]

Pakistani analysts, however, did seek to draw conclusions from India's failed test. Dr. Samar Mubarikmund, the chair of Pakistan's National Engineering and Science Commission (Nescom), which has been involved in the development of Pakistani missile systems, took the opportunity to deride India's missile designers for their "incompetence," claiming that Pakistan's "indigenous" missile program maintained its superiority in South Asia. [19] This comment suggests that, as India's deterrent capabilities improve, Pakistan may seek to compensate through improvements of its own strategic arsenal. The fact that Pakistan has been vulnerable to attack by India's nuclear-capable shorter-range missiles, including the short-range Prithvi and the medium-range Agni I and II, may also have reduced the significance of the Agni III test for Islamabad.

Comparative Threats

By many measures, North Korea can be said to pose a greater threat to international stability than India, thus making its missile launches more disturbing. Because of its violations of International Atomic Energy Agency safeguards and withdrawal from the nuclear Nonproliferation Treaty (NPT), North Korea's nuclear program is under greater scrutiny by the UN Security Council. India is not the subject of such Security Council attention, having never accepted restrictions on its nuclear activities. North Korea's disturbing history of exporting powerful missiles and the technology to produce them to Iran, Libya, Pakistan, and Syria have greatly heightened the dangers posed by weapon of mass destruction programs in these countries and created concerns that Pyongyang might export still longer-range missiles, such as the Taepodong II, once they are developed. India has never been charged with exporting missiles or related technology to others. Furthermore, while North Korea is an isolated totalitarian state, India is a stable democracy, well integrated into the international economy, making it appear far less threatening to many members of the world community.



On the other hand, the spread of long-range missile capabilities in any setting can spawn new dangers, as Australian analysts have noted. Disparate responses by the international community to similar behavior, moreover, could contribute to the erosion of international norms against the expansion of advanced weapon-of-mass-destruction delivery capabilities. Thus foreign governments have had to balance a range of concerns in developing their responses to the Indian and North Korean launches. Nonetheless, the clear consensus was to distinguish between the two cases and recognize that the nature of the regime acquiring advanced delivery systems greatly affects the dangers they pose.

Domestic Critique of Indian Launch Failures

In light of the failures in July of both the Agni III and GSLV launches, some Indian commentators have questioned whether India's strategic technological capacity may be suffering from systemic problems. Indeed, in offering explanations for the failure of the Agni III test, DRDO chief M. Natarajan indicated that the departure of young scientists from the organization negatively affected the organization's developing programs. [20] This sentiment has been echoed by Indian columnists who cite the outsourcing of Indian professionals to Western interests as a debilitating factor in the advancement of India's strategic capabilities. Calling for India to focus its young talent on engineering and technology, one commentator wrote, "India has diverted most of its engineering and technology talents to MBA schools, call centers, data operations, and simple low revenue application software development...In the mean time Indian technology has gone no where." [21] This internal "brain drain" of Indian technological talent has been an issue for a number of years—in 2004, for

example, it was estimated that 78 percent of Indian engineers leave their fields after graduation to work for Western business-processing outsourcing (BPO) companies. [22] Thus, India's ambitions to develop advanced weapons platforms, such as long-range ballistic missiles, may be hindered by a dearth of technical expertise.

The close proximity of the two unsuccessful launches also offered commentators and analysts the opportunity to compare the capabilities of the two organizations responsible for India's space launch and missile programs, respectively. Many analysts point to the different organizational cultures of the two agencies as the reason for what, historically, have been divergent track records, with ISRO enjoying more consistent success than DRDO. These analysts highlight that, while ISRO operates on commercial principles, which necessitate competition in the globalizing space industry, DRDO is sheltered from accountability because of its place in the defense establishment. According to one press account:

ISRO and DRDO are actually studies in contrast, two high-profile organizations heavily funded by public money and trying to meet India's goals of self-reliance in critical technology. The difference is, one [ISRO] has learnt from its failures and has a brilliant track record, while the other [DRDO] seems lost. [23]



A top down view of the GSLV- F02
source: <http://www.tribuneindia.com/2006/20060722/saturday/main1.htm>

The DRDO has consistently come under fire for cost over-runs and delays in its major projects, including the development of a main battle tank, a light combat aircraft, and two surface-to-air missile systems. Such problems have also strained relations between the DRDO and the military, with former chief of staff of the Indian Navy Admiral L. Ramdas commenting after the Agni III test: "The Indian armed services' experience with DRDO-made armaments has not been a happy one," adding that, "their reliability is often extremely



poor.” [24] Dissatisfaction with DRDO was also expressed by members of the Indian Parliament, as well as Prime Minister Singh, who lamented the continual time and cost overruns facing the Indian defense industry, in a mid-May address at DRDO Headquarters. [25] During a previously scheduled meeting with Defense Minister Mukherjee on July 12, Indian parliamentarians indicated their concern over the failure of the Agni III test, as well as over continuing delays in other DRDO projects. Some parliamentarians suggested that the DRDO conduct an “introspective review” of its role and “redefine its strategy for the future.” [26]

The limitations facing the Indian aerospace complex also have implications for the U.S. agreement with India to explore civil space cooperation (signed July 18, 2005, along with the U.S.-India nuclear accord), as there is a possibility that technical assistance and cooperation provided by the United States might be used in India’s strategic missile programs. [27] While the DRDO has been the lead organization for the development of India’s ballistic missile arsenal, it has made use of components originally developed by ISRO for the Indian civil space program, including the booster rockets for the Agni I and II. [28] While the Agni III is believed to have used a newly-developed booster, continued problems with the missile, and/or with more advanced systems, such as the intercontinental ballistic missile (ICBM) India is said to be developing, could tempt India to borrow technology and components directly from its civil space program.

India to Move Beyond Failed Test

India currently remains poised to continue testing and finalizing the development of the Agni III in the near future. The Indian government has approved at least two further tests to be conducted in late August 2006, and Defense Minister Mukherjee indicated that testing would continue until success was achieved. [29] Therefore, it may be only a matter of time before India joins the club of states possessing nuclear-armed intermediate-range ballistic missiles.

Nonetheless, as the cautious responses to the Agni III test demonstrate, so long as India continues to develop its missile capabilities in what the

international community considers a responsible manner - in the context of confidence-building with its neighbors and abiding by non-proliferation norms regarding the transfer of sensitive technologies - it is unlikely to face the international pressure exerted on proliferators deemed to be more threatening, such as North Korea.

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NORTH KOREA MISSILE EXERCISE HAS POLITICAL IMPACTS FOR SOUTH KOREA

On July 5, 2006, local time, North Korea flight tested seven ballistic missiles, including the long-range Taepodong-II (also known as the Paektusan-II). [1] South Korea's cautious response to the tests caused an intense political reaction at home and exacerbated tensions in Seoul's relations with the United States.

Missile Firings, Basing Data

The North Korean Foreign Ministry called the July 5 launches part of the "Korean People's Army's routine military exercises to increase the nation's capacity for self-defense." The Ministry emphasized that North Korea is not a member of the Missile Technology Control Regime and is not bound by any international laws or agreements restricting its missile tests. The Ministry also declared that Pyongyang's missile development and deployment maintain a balance of forces and preserve peace and stability in the region. [2]

The Taepodong-II, thought to have a range of 5,000 to 6,000 kilometers, failed shortly after liftoff, but there were conflicting reports about the missile's performance during the flight test. On July 6, Yi Sŏng-gyu, Director of Intelligence for South Korea's Joint Chiefs of Staff, testified before the National Assembly that the missile developed problems about 42 seconds into flight but continued to fly for about seven minutes to a range of about 499 km. [3] However, the South Korean press reported in closed testimony before the National Assembly that officials of the South Korean National Intelligence Service estimated the missile developed engine



problems and crashed into the sea off the coast of Musudan-ri about 40 seconds after liftoff. [4] The Japanese government initially believed the missile traveled somewhere between 400 and 640 kilometers from the launch site, but the Japanese media subsequently reported that according to U.S. intelligence, the missile apparently exploded about 1.5 km from the launch pad and fell into the sea about 40 seconds after liftoff. [5]

The North Korean exercise included the launch of four short-range (300-600 kilometer range) Scud variants and two medium-range (approximately 1,300 kilometer-range) Nodong missiles, launched from Kitaeryöng, Anbyön-kun, Kangwön Province, about 40 kilometers south of Wönsan, a port city on North Korea's east coast. The last missile tested appears to have been a Scud-ER ("extended range") with a range of about 850 kilometers, which could potentially reach southern Japan, including Osaka. [6] (Most of Japan is also in range of the Nodong system.) Reports indicate that North Korea did not test a new intermediate-range (2,500 to 3,000 kilometers) ballistic missile (IRBM) that is under development, which is based upon the Soviet-designed SS-N-6 submarine-launched ballistic missile (SLBM). [7]

According to a July 2006 report published by South Korea's Institute of Foreign Affairs and National Security (IFANS), a research institute under the Ministry of Foreign Affairs and Trade, North Korea has deployed about 200 Nodong

missiles and about 50 of the new IRBMs (SS-N-6 variant), which have yet to be flight tested. The report claims that North Korea has constructed a number of underground bases with ballistic missiles capable of striking Japan and U.S. military forces in East Asia. [8] The following table consolidates published information on North Korean missile bases, relying on information from this and the other sources listed.

North Korean Underground Missile Bases

Note: The list of underground missile bases in the table below is not exhaustive; additional bases could exist. The reliability of some of the information in this table is uncertain. Sources: Yun Tök-min, "Pukhan'üi t'andomisail p'ürogüraem p'yöngga [Assessment of the North Korean Missile Program]," IFANS, July 26, 2006; Yang Söng-uk, "Puk, chiha misailgiji könsöljung [North Constructing Underground Missile Bases]," *Munhwa Ilbo*, August 3, 2006, [<http://www.munhwa.com>]; Yi Myöng-gön, "Puk, hanil chudun migun kyönyang misailgiji könsöl [North Builds Missile Bases Aimed at U.S. Military Forces in Korea, Japan]," *Tong'a Ilbo*, August 3, 2006, p. 2, in KINDS, [<http://www.kinds.or.kr>]; Nuclear Threat Initiative "North Korea Missile Profile: Missile Facilities-Missile Bases," [http://www.nti.org/e_research/profiles/NK/Missile/64_699.html].

Location	Missiles	Status	Probable Targets
Yöngjö-ri, Yanggang Province	Possibly Taepodong-I; Nodong; and/or SS-N-6 variant	Completed in 1995	Okinawa, U.S. military forces in Japan
Chüנגgang-üp, Chagang Province	Possibly Taepodong-I; Nodong; and/or SS-N-6 variant	Completed in 1995	Okinawa, U.S. military forces in Japan
Kusöng, North P'yöng'an Province	Nodong	Completed in 1995	U.S. military forces in Japan
Okp'yöng-dong, Munch'ön, Kangwön Province	Probably Nodong	Completed in 1997 or 1998	U.S. military forces in Japan
Mt. Üngdök (?), Musudan-ri, North Hamgyöng Province	Nodong	Under construction; possible support facility and/or expansion of base at Mt. Komdök, Hwadae-kun	U.S. military forces in Japan
Mountain site near Chöngjin, North Hamgyöng Province	Taepodong-I or Taepodong-II	Completed in 1999	Guam; possibly Alaska, Hawaii and/or western U.S.
Chöngju, North P'yöng'an Province	Nodong	?	U.S. military forces in Japan
Töksöng-kun, South Hamgyöng Province	?	Large underground facility under construction	?
Sangnam-ri, Höch'ön-kun, South Hamgyöng Province	Possibly Taepodong-II or SS-N-6 variant	Large underground facility under construction; about 70-80 percent completed	U.S. military forces in Japan; Guam; possibly Alaska, Hawaii and/or western U.S.



Location	Missiles	Status	Probable Targets
Chiha-ri, P'an'gyo-kun, Kangwŏn Province	Hwasŏng (Scud); possibly Nodong, SS-N-6, Taepodong-I/II in the future	Underground construction underway for expansion	South Korea; U.S. military forces in South Korea, Japan; Guam; possibly Alaska, Hawaii and/or western U.S.
Mt. Komdŏk, Hwadae-kun, North Hamgyŏng Province	Nodong	Completed around 1993	U.S. military forces in Japan
Yongnim-ŭp, Yongnim-kun, Chagang Province	Possibly Nodong, SS-N-6, and/or Taepodong-I/II	Construction began around 1994, probably completed	U.S. military forces in Japan; Guam; possibly Alaska, Hawaii and/or western U.S.
Wŏnsan, Kangwŏn Province	Possibly Nodong, SS-N-6, and/or Taepodong-I/II	Under construction in 2001; possibly completed	U.S. military forces in Japan; Guam; possibly Alaska, Hawaii and/or western U.S.

Domestic Political Fallout in South Korea

The missile exercise has exposed political rifts in South Korea. After the North Korean launches, South Korean President Roh Moo-hyun became the target of severe criticism from his opponents because he remained silent about North Korea's tests until July 11. [9] In this vacuum, three National Assembly committees held hearings the day after the missile tests, giving the opposition Grand National Party (GNP or Hannaradang) an opportunity to condemn the Roh government. Pak Chin (Park Jin), GNP member of the Unification, Foreign Affairs and Trade Committee, called Roh's national security policy and his North Korea policy total failures that have created a national crisis in foreign affairs and national security. Pak said Roh's North Korea policy could not provide peace and security for South Korean citizens. Yi Hae-bong, GNP member of the same committee, said that the inter-Korean Kaesŏng Industrial Complex and Mt. Kŭmgang tourism project in North Korea, which South Korea has subsidized, should be closed down and that fertilizer and food aid should be suspended unless Pyongyang promised it would not launch missiles again and returned to the Six-Party talks on ending its nuclear weapons program. (In addition to North Korea, China, Japan, Russia, South Korea and the United States are participants in these talks.)

Hwang Chin-ha and Yi Sŏng-gu, GNP members of the National Assembly's National Defense Committee, said that at 4:00 a.m., on July 5, a mere 20 minutes after the first launch, the Japanese Prime Minister began to chair a meeting on North Korea's action, but that the ROK defense minister did not

get his first report until 4:10 a.m. and President Roh did not receive a report on the launch until about 5:00 a.m. Even Kim Myŏng-ja and Yi Kŭn-sik, ruling Uri Party members of the National Defense Committee, called the Roh government's response "too passive." [10]

The GNP conducted briefings and issued several statements that were sharply critical of the Roh government. On July 10, the GNP spokesperson accused Roh of "sleeping peacefully while North Korea fired missiles," and demanded that Roh "wake up." The spokesperson said it was a "comedy" when the Blue House (the South Korean presidential residence and office) explained that Roh had remained silent because he did not want to surprise the South Korean people. [11] The GNP welcomed UN Security Council Resolution 1695 condemning the North Korean tests and imposing sanctions against the North Korean missile program and said the party was opposed to the North Korean missile tests because other countries in the region, including South Korea, "would have no choice but to increase their armaments" in response. [12] The GNP called Roh's North Korea policy a "complete failure" and accused the Roh government of having no "will or desire to protect the lives and assets of the South Korean people." [13]

It appears that Roh and his advisors were concerned about overreacting and raising tensions with North Korea, fearing this could enflame the regional security environment and destabilize South Korean markets and investor confidence. On July 9, the Office of the President of South Korea issued a blistering rebuttal, which accused the opposition party and some of the media of exaggerating the threat and playing on citizens'



fear for political purposes—just as South Korea’s authoritarian rulers had exploited such anxieties prior to democratization. The statement also said there was no reason “to make a fuss like Japan.” [14] The GNP seized on Roh’s statement that there is no need to overreact, claiming that it amounted to a declaration that South Korea was opposed to international cooperation in dealing with the North Korean missile issue. [15]

Growing Tensions in U.S.-ROK Alliance

In the weeks after the July 5 North Korean missile exercise, a growing rift between Washington and Seoul has become evident.

On July 13, 2006, General Burwell B. Bell, commander of U.S. Forces Korea, criticized Seoul for its tranquil reaction to the missile exercise, and he counseled South Korean lawmakers to consider the deployment of missile defenses. [16] Bell’s advice drew a swift rebuke from the Uri Party’s Kim Wŏn-ung, chairman of the National Assembly’s Unification, Foreign Affairs, and Trade Committee. In response to Bell’s remarks that North Korea has approximately 800 Scud and Nodong missiles targeting South Korea, Kim said that the missiles are not really aimed at South Korea per se, but at U.S. military bases in South Korea in order to retaliate against any U.S. preemptive strike. [17]

The *Chosŏn Ilbo*, a major South Korean conservative daily, published an editorial that in turn challenged Kim, stating, “Kim’s remarks make it difficult to tell whether Kim is the chairman of North Korea’s Supreme People’s Assembly or the chairman of the National Assembly’s Unification, Foreign Affairs and Trade Committee.” [18]

Bell’s remarks were made against a background of wider U.S.-South Korea disharmony over how best to manage North Korea’s unconventional weapons and advanced delivery systems, with Seoul committed to a strategy of engagement, and Washington, while prepared to pursue negotiations, favoring a strategy of isolating and penalizing Pyongyang. The difference in viewpoints was seen in the two states’ differing perspectives on the content of a UN Security Council resolution responding to the July 5 missile firings, as the United States sought to impose powerful sanctions

on North Korea, while South Korea preferred a more moderate result.

As these events were unfolding, U.S. - South Korean relations were also perturbed by uncertainties over the future of the Combined Forces Command (CFC). At a security forum hosted by the South Korean National Assembly on July 13, Bell also told lawmakers that the United States was considering disbanding the CFC, which combines U.S. and ROK military forces under a single command in wartime, and establishing separate command structures for U.S. Forces Korea and ROK military forces. Bell said the United States has been studying this option since October 2005, but that a final decision had not been made. [19]

In early August, seventeen former ROK defense ministers expressed their opposition to disbanding the CFC, which many South Koreans believe is critical in deterring North Korea and symbolic of Washington’s alliance commitment. [20] The Bush Administration has proposed dismantling the CFC in 2009, and Seoul has countered with the suggestion that the change be postponed until 2011 or 2012. [21] While the debate continued over the status of the bilateral alliance, President Roh said on August 9 that the ROK could exercise operational control of its forces during a conflict as required, if the CFC were suddenly to be disbanded. [22] At a press conference the next day in Seoul, Representative Henry Hyde, chairman of the U.S. House of Representatives Committee on International Relations, said he “would support a transfer of operational control at the earliest possible moment.” [23]

There are other signs of a deepening split between Washington and Seoul. During a television interview on July 23, ROK Unification Minister Yi Chong-sŏk (Lee Jong-seok) said that the United States failed more than anyone else in preventing North Korea from conducting the July 5 missile exercise. [24] Minister Yi’s remarks drew criticism from both ruling and opposition party lawmakers, but President Roh defended Yi’s comments before reporters two days later. [25] Both Roh and Yi have expressed opposition to any economic sanctions against North Korea in retaliation for the missile tests, but Tokyo and Washington have pursued more punitive measures against Pyongyang. [26]



September U.S.-South Korea Summit

As ties between Seoul and Washington continued to deteriorate, the Blue House announced on August 16 that Roh would meet President George W. Bush in Washington, on September 14. North Korea's nuclear program and missile tests will be high on the agenda, and the two leaders will also discuss the U.S.-ROK alliance and negotiations over a proposed bilateral free trade agreement, among other issues. [27]

However, the day after the summit arrangements were announced, the South Korean press reported that during an "off-the-record conversation with a few reporters" on August 13, President Roh stated he had low expectations for his meeting with President Bush. According to the *Korea Times* and the *Hankook Ilbo*, Roh said, "I don't think I can persuade the United States anymore. I think it would also be tough for me to persuade Bush to normalize relations with Pyongyang at next month's summit." [28] Roh's comments indicate his belief that Washington needs to ease its hard line against Pyongyang in order to resolve the North Korean nuclear issue, but the Bush Administration may be highly unlikely to reverse its policy towards North Korea in the wake of the July missile exercise.

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BEYOND NO-FIRST-USE: RECENT CHINESE DISCUSSIONS OF NUCLEAR STRATEGY

In July 2005, People's Liberation Army (PLA) Major General Zhu Chenghu provoked considerable controversy when he declared that China should

respond with nuclear weapons if the United States intervened with powerful conventional military forces in a confrontation over Taiwan. [1] In the intervening year, however, high-level Chinese military officials have disavowed any change to the country's long-standing no-first-use policy, which states that China will not be the first to use nuclear weapons in a conflict. [2] Nonetheless, Zhu's remarks highlight an ongoing debate in China on the issues of nuclear doctrine and the no-first-use policy, reflected by growing and more public discussion of these topics in the Chinese media and academic literature.

A review of these writings suggests that these discussions fall largely into three lines of argument:

1. Those who stress that the no-first-use doctrine must remain the guiding principle of China's nuclear weapons policy for moral and political reasons;
2. Those who argue that the no-first-use doctrine remains the correct approach for China because conventional deterrence is more credible than the threat of first nuclear use; and
3. Those who are prepared to debate whether China's no-first-use doctrine should remain unchanged, especially if it appears that because of the preemptive capabilities of U.S. conventional forces, upholding the traditional doctrine would undermine China's limited nuclear retaliatory capabilities.

Morality and Politics

Following its first nuclear test in 1964, Beijing announced that it would adhere to a policy of no-first-use (NFU) of nuclear weapons and called for worldwide nuclear disarmament. Alone among the five nuclear-weapon-states recognized in the nuclear Nonproliferation Treaty, China adopted a minimal deterrent strategy relying on a small number of nuclear weapons to deliver punitive, counter-value responses to an adversary's first strike. The Chinese government has persistently upheld this position over the past 32 years and has reiterated this stance on a number of occasions. The majority of Chinese analysts discussing the no-



first-use issue argue that this position has served Chinese strategic interests well since the 1960s giving Beijing the moral high ground and lending credence to its commitment to the total elimination of nuclear weapons worldwide. For these analysts, nuclear weapons serve only one purpose: to retaliate against nuclear attacks.

Writing in late 2005, for example, retired Major General Pan Zhenqiang, a former director of the Institute of Strategic Studies at the PLA National Defense University, openly criticized General Zhu's remarks as the "wrong theme at the wrong place and the wrong time." He went on to list five reasons why the no-first-use position should be maintained, namely because it: upholds the underlying principle that nuclear war should be avoided; promotes strategic stability; reinforces international arms control efforts; enhances China's international reputation; and fosters less contentious relations with Taiwan. [3]

Similarly, Major General Peng Guangqian, a renowned analyst of nuclear and military strategy at the PLA Academy of Military Sciences, echoed General Pan's comments in an August 2005 article when he stated that the principle of no-first-use conforms to the global nuclear taboo, which has made nuclear weapons essentially unusable except under the most extreme conditions. Indeed, Peng argued, the first use of nuclear weapons by any country would be unthinkable today. He believes that China should not change its existing policy, which emphasizes: the defensive nature of China's nuclear arsenal; China's doctrine of no-first-use; the limited size of Chinese nuclear forces; China's efforts to promote nuclear disarmament and international nuclear arms control; and China's commitment to the ultimate goals of "total elimination and thorough destruction" of nuclear weapons. [4]

Sound Strategy

The second group of scholars suggests that nuclear weapons are essentially symbolic tools to advance political and strategic goals, rather than military weapons to be used in conflict. For these analysts, discarding no-first-use would not enhance China's security, which depends on the credibility of its resolve to use maximum conventional force to meet any conventional attack. Even threats to

China's fundamental security interests, such as U.S. military intervention to support Taiwan in a cross-Strait conflict, would be better deterred by strong conventional forces, this group stresses. [5]

Li Bin of Tsinghua University, a well-known Chinese analyst of arms control and nuclear strategy, argues in a forthcoming article that China has adopted a no-first-use policy because its nuclear strategy is first and foremost to counter nuclear coercion. In particular, Li argues that any suggestion of first use during a conventional conflict is neither morally acceptable nor credible. Indeed, he suggests that even when nuclear weapons states are suffering defeat in conventional wars against weaker, non-nuclear weapon states, use of nuclear weapons has, at most, been contemplated but has never been undertaken. This also explains China's no-first-use policy, he concludes, since it would never be credible for China to declare it will use nuclear weapons first. [6]

Li also indirectly challenged General Zhu's argument that first use of nuclear weapons might make sense in a situation where China faced conventional defeat by an adversary like the United States. He argued that, given the small size and limited sophistication of China's nuclear arsenal in comparison to that of the United States, for China to use nuclear arms—even after suffering severe damage from an enemy's conventional forces—would only invite further destruction. In effect, it could transform a mere military defeat into a national catastrophe. What can and should be done, he concluded, is to strengthen China's conventional capabilities, while improving the survivability of China's limited nuclear deterrent force. Li further noted that China's discarding its no-first-use doctrine could heighten the insecurity of some non-nuclear weapon states and provoke them to pursue nuclear arms of their own. Thus, abandoning no-first-use would provide no advantages and could carry significant costs. [7]

Sun Xiangli, a nuclear arms control specialist with the Beijing Institute of Applied Physics and Computational Mathematics, has taken a similar stance. Writing at the end of 2005, she argued that for China, nuclear weapons are largely considered to be political and strategic deterrent weapons and that this fundamental underpinning of Chinese policy has not changed since 1964. Nor is it likely to be altered in the near future, she stressed, even



though the security circumstances confronting China have dramatically changed in the last decade, including the U.S. development and deployment of a national missile defense system and its research on new low-yield nuclear weapons. [8] (*Editor's note: The Bush Administration's request for funds to support research and development on new low-yield nuclear weapons was rejected by the U.S. Congress in November 2004.*)

New Strategic Calculus

The third group of analysts argues that China's no-first-use policy, while morally appealing and politically useful, should not be allowed to impose undue—and indeed dangerous—constraints on China's strategic nuclear options, especially at a time when China's nuclear and conventional forces are limited and comparatively unsophisticated compared to those of its potential adversary. Representing this school, in addition to General Zhu, are scholars such as Shen Dingli of Fudan University.

In an article that appeared in late 2005, Shen argued: "If China's conventional forces are devastated, and if Taiwan takes the opportunity to declare *de jure* independence, it is inconceivable that China would allow its nuclear weapons to be destroyed by a precision attack with conventional munitions, rather than use them as a true means of deterrence." [9] What Shen is arguing here is not that the no-first-use doctrine should necessarily be abandoned, but rather that a more serious discussion is needed regarding how China can most effectively protect its core national security interests. If no-first-use continues to serve China's needs, it should be maintained and upheld; however, if this doctrine becomes a moral and philosophical straightjacket that undermines China's national security, then, Shen argues, it should be modified.

But the broader question that Shen's and, for that matter, General Zhu's arguments, have implicitly raised, is whether the ends, even if ultimately defensive, will always justify the means. The current discussions on no-first-use harken back to PLA debates in the 1980s on the strategy of active defense, where the issue was whether some forms of offensive actions might be necessary in the face of impending enemy attack. In a separate article, Shen suggests that in the past, only nuclear

weapons could destroy the other side's nuclear arsenals; however, today, this could be achieved by using precision-guided conventional munitions. China's silo-based early-generation strategic nuclear weapons, and China's national security for that matter, could face serious risks should the enemy launch such attacks with precision conventional munitions. These would be tantamount to low-yield nuclear first strikes. [10] The implication is that, fearing such an attack was imminent, China, even as it endorsed the principle of no-first-use, might be entitled to employ its nuclear forces before the other side did.

The need to reconsider China's no-first-use doctrine in order to preserve the credibility and survivability of China's nuclear deterrent is also receiving support from some Chinese commentators on the Internet. One proposed variation, which would be more in keeping with the principle of no-first-use than Shen's, but which would be difficult to implement in practice, is the strategy of launch on warning or *lingqian huanji* [counter attack prior to zero hour]. This envisions the launch of Chinese nuclear missiles once China has determined that the enemy has launched its own nuclear attacks, but before these have struck their targets on Chinese territory. [11]

Status Quo Continues

For now, no-first-use remains in place as official Chinese policy. Indeed, reports of the PLA Strategic Missile Force (SMF) exercises strongly hint that the country would not only refrain from using nuclear weapons first, but would also delay a counter-attack until after it had absorbed the incoming nuclear strike (*houfazhiren*). [12] Despite this seeming continuity in Chinese doctrine, the pronouncements of retired Chinese military figures and academics suggest that a serious debate on the future of this posture is likely to continue and even intensify in the months and years ahead.

The above discussion offers a number of new insights into how Chinese military strategists and security analysts perceive the role of nuclear weapons in the country's defense posture and the continued relevance of its no-first-use policy. While the fact that such debates have been allowed—albeit still within a relatively small circle of analysts—can be seen as evidence of growing



openness and transparency within Chinese society on such a sensitive issue, one must also note that these analysts' influence on official policy remains quite limited. Decisions on and implementation of official policy in this area continue to be the exclusive prerogative of China's party and military leadership at the highest level. However, the fact that China's nuclear use policy is being debated publicly implies that it has also been the subject of internal discussions and that, while it remains unchanged for the moment, the door has been left open to further official examination of the policy. [13]

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RUSSIAN GOVERNMENT WHITE PAPER ON WMD NONPROLIFERATION REVEALS BOTH DIFFERENCES AND SIMILARITIES WITH U.S. APPROACH

At the end of June 2006, the Military-Industrial Commission (MIC) of Russia, speaking on behalf of the Russian government, published a White Paper on nonproliferation, formally titled, "The Russian Federation and the Situation with Nonproliferation of WMD and Means of Their Delivery: Threats, Assessments, Tasks, and Methods of Implementation." [1]

In many respects, the 25-page document parallels U.S. policy statements on the subject in that it strongly endorses all of the major international efforts to limit the spread of nuclear, chemical, and biological weapons, as well as missile delivery systems. The document supports not only the formal elements of the global nonproliferation regimes, including treaties, international



inspections, and supplier group organizations, but also major associated initiatives, such as UN Security Council Resolution 1540 (requiring states to control weapons of mass destruction (WMD) commodities), the Proliferation Security Initiative (aimed at interdicting illicit transfers of WMD and missiles), and U.S. and international cooperative threat reduction programs to secure WMD stocks, particularly in Russia.

In other respects, however, the Russian report departs markedly from U.S. views, sometimes directly taking issue with U.S. approaches to the proliferation challenge. Differences are particularly acute regarding the use of military measures to combat proliferation and the nature of the nuclear terrorism threat.

This article will highlight particularly noteworthy points in the Russian White Paper and its differences with U.S. government thinking.

Introduction

The MIC was created in March 2006 and is “attached” to the Russian government rather than a part of its formal bureaucratic structure. It is responsible for coordinating defense production in Russia, an activity now dispersed among numerous, competing private and quasi-private enterprises; it also manages Russian arms export activities. [2] Although the organization has no direct responsibility for developing or implementing Russian nonproliferation policy, the MIC is headed by Sergey Ivanov, the Russian Minister of Defense, who was also recently appointed Deputy Prime Minister, and the White Paper declares that it authoritatively represents the views of the Russian government.

In addition to a preface and a brief concluding section, the paper is divided into five chapters dealing with broad trends in proliferation; international responses (focused on treaties and other regime elements); Russian policy (focused on Russia’s support for international regimes and its efforts to implement their requirements domestically); export controls; and practical steps Russia has taken to reduce, eliminate, and protect WMD.

A notable statement appears at the outset of the document: “The transparency of any state regarding its priorities in the sphere of international security

is the most important means of strengthening confidence, increasing predictability in international affairs, and facilitating multilateral solutions to difficult problems.” [3] It represents a significant departure from the past Russian and Soviet preference for secrecy and suggests that a new openness in Russia’s formulation and implementation of its foreign policy may be underway.

Restrained Tone

In comparison to the urgency reflected in a comparable U.S. document, the December 2002 “National Strategy to Combat Weapons of Mass Destruction,” the Russian White Paper is more muted and descriptive. Its opening characterizations of the proliferation danger are sober, but do little to concretize the threat:

Proliferation of nuclear, chemical, and biological weapons, as well as their missile delivery systems, is one of the major factors determining the nature of the threats to the national security of the Russian Federation, taking into account its geographical location and the length of its borders. The Russian leadership is paying particular attention to this question. [4]

*

Proliferation of WMD is one of the main threats to Russian national security. An increase in the number of countries possessing WMD, particularly when these states are in regions bordering Russia, unquestionably presents a major threat to Russian security. [5]

*

For the foreseeable future, the greatest threat faced by Russia and other states in the area of nonproliferation will emanate from the possible use by terrorists of some type of WMD. [6]

In contrast, a parallel passage in the U.S. National Strategy states:

Weapons of mass destruction (WMD)—nuclear, biological, and chemical—in the possession of hostile states and terrorists represent one of the greatest security challenges facing the United States.



Weapons of mass destruction could enable adversaries to inflict massive harm on the United States, our military forces at home and abroad, and our friends and allies. Some states, including several that have supported and continue to support terrorism, already possess WMD and are seeking even greater capabilities, as tools of coercion and intimidation. For them, these are not weapons of last resort, but militarily useful weapons of choice intended to overcome our nation's advantages in conventional forces and to deter us from responding to aggression against our friends and allies in regions of vital interest. In addition, terrorist groups are seeking to acquire WMD with the stated purpose of killing large numbers of our people and those of friends and allies—without compunction and without warning.

We will not permit the world's most dangerous regimes and terrorists to threaten us with the world's most destructive weapons. [7]

The Russian White Paper lacks the acute sense of potential vulnerability – and the assertive response – seen in the U.S. document.

Opposition to Military Measures

Although the Russian White Paper was prepared under the leadership of the Russian Defense Minister, the document is also notable for its rejection of the use of military measures to restrain proliferation. The point is made repeatedly in the document either directly or by contrasting the Russian approach to that of other nations.

At the outset of Chapter I, which reviews proliferation trends, the White Paper states, for example:

It must be emphasized that during the last 10-15 years, approaches to nonproliferation have become ever more politicized. The assessment of proliferation threats largely depends on the geopolitical posture of a given state, its relations with its allies, economic interests, and historical experience. Therefore, depending on their understanding of this term, individual states employ political, economic, diplomatic, and at times even force to achieve their WMD nonproliferation goals.

The Russian Federation remains committed to solving these questions primarily by political and diplomatic means. It considers the use of force an extreme measure that can only be employed on the basis of a UN Security Council resolution. [8]

Several paragraphs later the document explicitly opposes key elements of U.S. counterproliferation strategy, although without mentioning the United States. Specifically:

At the global level there is a clear weakening of the guarantee of national sovereignty, and [there is] interference, including by force, into the internal affairs of other countries, sometimes under the pretext of solving nonproliferation problems. There have also been dangerous attempts to justify the possible use of nuclear weapons in a “non-nuclear” conflict to strike “hard and deeply buried targets.” Under these circumstances, some states are beginning to contemplate the nuclear choice as a means of deterring aggression, as a factor that would enhance their international status, and as a tool for attaining superiority over their neighbors and reaping economic benefits. [9]

The White Paper makes an implicit, but nevertheless clear distinction between nonproliferation regimes based on international agreements and counterproliferation activities, which include more proactive measures, often outside the framework of established multilateral agreements. It is noteworthy that the White Paper never uses the term “counterproliferation,” which is a hallmark of U.S. strategy under the Bush Administration.

The document also repeatedly emphasizes Russia's commitment to diplomatic measures, rather than military alternatives, in combating proliferation. In a particularly strong statement on the subject, the White Paper quotes from the *The Russian Foreign Policy Concept*, published in 2000, which declares:

Russia reaffirms its unswerving course toward participating jointly with other states in averting the proliferation of nuclear weapons, other weapons of mass destruction and means of their delivery, as well as



related materials and technologies. The Russian Federation is an ardent supporter of strengthening and developing relevant nonproliferation regimes. [10]

Terrorist Nuclear Explosive Discounted

The White Paper's characterization of the threat of nuclear terrorism is another area that appears to diverge significantly from U.S. thinking. Although a close reading of the document suggests that Russia is more concerned about state-driven proliferation than proliferation by non-state actors, the document speaks frequently of the WMD terrorist threat, indicating that Moscow, like Washington, is devoting considerable attention to this problem.

One passage in the White Paper regarding nuclear terrorism, however, implies that Russia continues to minimize the danger that a terrorist group might actually build and detonate a nuclear explosive device:

Although the probability of independent production of nuclear explosive devices by terrorists is low, given its technical complexity, it is possible that terrorists might develop primitive weapons using radioactive materials (so-called "dirty bombs"). [11]

In the United States, by contrast, it is widely feared that a well-funded, international terrorist group, such as al-Qaeda, could fabricate a device with a true nuclear yield, if it gained access to highly enriched uranium. (This material can be detonated using a relative simple "gun-type" design, which is far less complex than the "implosion-type" device that would be needed to detonate a weapon using plutonium for its core.) [12]

The White Paper's downplaying of this aspect of the nuclear terror threat is surprising given the fact that Russia and the United States are engaged in a number of major programs to limit the use of highly enriched uranium for civilian purposes and to reduce the number of sites holding stocks of the material because of concerns about nuclear terrorism. Many of these programs are mentioned positively in other sections of the White Paper.

On the other hand, the White Paper gives considerable attention to another facet of the non-

state actor nuclear proliferation threat: the potential of international networks of private individuals and organizations to spread relevant technology and know-how among would-be state proliferators. In this regard, the document specifically notes the dangers posed by the network established by Pakistani nuclear scientist A. Q. Khan. The strong focus on this issue suggests that the White Paper's authors consider the danger of non-state actors' facilitation of state proliferation to be a more urgent threat than non-state terrorist organizations' acquisition of nuclear weapons for themselves.

Other Russian Complaints – and Compliments

A number of additional Russian concerns regarding U.S. policy are noted in passing throughout the report, again usually without mentioning the United States by name.

- ◆ Russian discomfort with the continued presence of U.S. nuclear forces in Europe is alluded to in the report's discussion of proliferation trends: "There are still nuclear weapons on the territory of several non-nuclear states that do not formally possess such weapons, particularly in Europe. This situation cannot but elicit disquiet from the standpoint of nuclear weapons proliferation." [13]
- ◆ In describing the background for current proliferation trends, the White Paper appears to have the United States in mind when it states that after the Cold War, "Instead of opposing blocs, there are now numerous crises and conflicts caused, among other reasons, by the tendency of certain countries to act hastily, without consideration for the global community and its universally recognized institutions." [14]
- ◆ In discussing missile proliferation, the report cites U.S. military programs in space as a challenge: "U.S. research plans for the creation of space weapons are also a source of concern. These plans could provoke a number of states to acquire 'cheaper' counterweapons, including WMD." [15]
- ◆ The document also takes issue with the opposition of the United States to the Comprehensive Test Ban Treaty (CTBT). After declaring that the Treaty, which was opened for signature in 1996, "made a significant



contribution to the strengthening of the nuclear nonproliferation regime,” the White Paper states that the U.S. stance hurts prospects for the treaty:

Of the 44 states which must adhere to the CTBT for it to enter into force, it has not been ratified by China, Columbia, the DPRK, Egypt, India, Indonesia, Iran, Israel, Pakistan, and the United States. The position of the United States, which has refused to ratify the treaty, is not helping accelerate the entry of the CTBT into force. [16]

On the more complimentary side, the report notes the contributions of many countries, including the United States, to programs to enhance WMD security in Russia and reduce WMD stocks there. It also endorses the Proliferation Security Initiative, which was launched in May 2003 by the United States and which Russia joined a year later, after initially shunning the effort. In addition, the document speaks positively about the START I and the Moscow Treaty (also known as the Strategic Offensive Reductions Treaty, or SORT), but notes that: “The START treaty will expire on December 5, 2009. The U.S. and Russia face challenges connected with meeting the deadline requirements of the SORT and START treaties. This situation calls for the adoption of mutually agreed solutions.” [17] (*On Russian views concerning the future of START I, see related article in this issue of WMD Insights.*)

Export Control: Praise for Russian Achievements, Complaints About the United States

The White Paper regards national systems of export control as a particularly important barrier to proliferation of WMD and delivery systems. It assesses the Russian export control system as “reliable and mature,” highlights its achievements, and identifies only one area for further improvement – closer interaction with former Soviet states within the framework of the Collective Security Treaty (also known as Tashkent Treaty), the Eurasian Economic Community, and the Common Economic Space. These treaties and organizations have overlapping membership of various former Soviet republics, although none includes the Baltic states, Ukraine, Moldova, or Georgia.

The White Paper takes a different tack when it speaks about the United States, however. It emphasizes that: “Multilateral export control regimes must not be used to impose unfair terms of competition and force competitors out of international markets in weapons and high technology. [18] This comment refers to the widespread perception in Russia that the United States – and sometimes U.S. allies, as well – use WMD nonproliferation as a pretext to limit the access of Russian high-technology companies to international markets. The best known example of this perception is the belief that U.S. opposition to Russian construction of the Bushehr nuclear power station in Iran was motivated not by nonproliferation concerns, but by the desire of U.S. firms to prevent the Russian nuclear industry from competing effectively in the international market for nuclear power reactors. The recent introduction of sanctions by the United States against two major Russian companies for allegedly selling sensitive products to Iran is a more recent example. These sanctions were widely regarded in Russia as “punishment” for the recently signed large-scale arms sales agreements with Venezuela. [19]

CBW Comments Recall Challenges

The White Paper’s discussion of chemical weapon proliferation notes that: “New risks are appearing in connection with research and development of so-called non-lethal chemical weapons.” [20] Although apparently aimed elsewhere, the comments call to mind that Russia, itself, has developed such weapons, and used them in October 2002 against the terrorists who held hundreds hostage in a Moscow theater. Since the use of such assets for police purposes of this kind is not prohibited by the Chemical Weapons Convention (CWC), the White Paper appears to be concerned about their use on the battlefield by other states possessing or acquiring these agents; however, it leaves unclear which states may be the focus of this point.

Similarly, the report notes that a particular challenge in the area of chemical weapons proliferation is that the CWC is not yet universally ratified. It further states that “implementation of its provisions at the national level leaves much to be desired.” Although the White Paper authors



presumably had other states in mind, this comment is a reminder of Russia's difficulties in implementing the CWC's provisions for the destruction of existing CW stockpiles. Indeed, while its program has gained considerable momentum and while Russia has been granted an extension of the relevant CWC deadlines, of all CWC parties that have acknowledged possessing such weapons, Russia still has the farthest to go in destroying its chemical weapon stocks. [21] The United States, it may be noted, has also encountered problems in its program and has received an extension of time for the destruction of its chemical weapon stocks.

Two statements in the White Paper beginning the discussion of biological weapons proliferation deserve careful consideration. Here the report declares:

During the 30 years of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (BWC) not one state has declared its possession of such weapons. However, there is also no reliable information demonstrating the complete cessation of work on biological weapons (BW). [22]

The statements invite attention because they gloss over the fact Russia has acknowledged that, after the Soviet Union had joined the BWC in 1972, it developed biological weapons. The acknowledgement was made in May 1992 by President Boris Yeltsin, who stated in a newspaper interview that the 1979 anthrax outbreak in Sverdlovsk had not been a natural event, but an accidental release from a BW facility. [23] Yeltsin had issued a decree in April 1992 banning any offensive biological weapons work in Russia. Similarly, the White Paper's statement on the difficulty of confirming the cessation of offensive biological weapons work fails to acknowledge that the United States has publicly accused Russia of continuing elements of the offensive biological weapons program pursued by the Soviet Union. [24] It is not clear what states the authors of the White Paper may have had in mind in making this comment. Rather, in view of the difficulties in ensuring compliance with the BWC, the White Paper emphasizes the need for developing a verification mechanism for the treaty. It notes, however, that the

effort to develop such a mechanism was blocked by the United States in July 2001.

Although this analysis has given particular attention to aspects of the White Paper that diverge from U.S. views, the White Paper *in toto* strongly supports international efforts to curb the spread of WMD and advanced delivery systems. It also identifies extensive work by Russia to fortify its own nonproliferation activities. A further positive dimension of the report is that it identifies a wide number of pathways through which states and terrorist organizations might seek to develop WMD and missiles, indicating where initiatives to curb such activities need to be focused. On balance, the White Paper appears to reflect Russia's growing engagement and activism in global nonproliferation affairs, but with caveats indicating that significant differences continue with the United States on these matters.

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President Yeltsin publicly and bravely acknowledged and then renounced the massive biological weapons program Russia had inherited from the Soviet Union." Cited in Michael Moodie, "The Soviet Union, Russia, and the Biological and Toxin Weapon Convention," *Nonproliferation Review*, (Spring 2001), p. 65.

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program may remain largely intact and may support a mobilization capability for the production of biological agents and delivery systems."

UKRAINE REJECTS RUSSIAN ACCUSATIONS OF MISSILE TECHNOLOGY CONTROL REGIME VIOLATION

In its June 30, 2006 White Paper on nonproliferation, the Military-Industrial Commission of the Russian Government openly accused Ukraine of violating the Missile Technology Control Regime (MTCR), which limits proliferation of longer-range missiles and relevant technologies. (See related story on the White Paper in this issue of WMD Insights.) When presenting the White Paper to the public, Vice-Premier, Minister of Defense, and Chairman of the Military-Industrial Commission Sergey Ivanov repeated the accusation. He clarified that "in 2000 and 2001, during the tenure of Ukrainian president Leonid Kuchma, a Ukrainian company 'Progress,' a subsidiary of 'UkrSpetsExport'[the Ukrainian state arms export organization], sold six cruise missiles Kh-55 to China and six more such missiles to Iran." Ivanov characterized that deal as a "blatant violation of MTCR." [1]

The Russian accusations caused anger in Ukraine. Ukrainian Foreign Ministry spokesman Vasili Filipchuk announced that Ukraine was strictly following the guidelines of the MTCR and does not condone violations of the regime's rules. The cases to which Ivanov referred, he added, were discovered by Ukrainian law enforcement organizations and the crimes were committed by "international criminal groups," with the participation of citizens of Ukraine, Russia, and Australia. Accordingly,

Ukraine rejected the Russian accusations that it had violated the MTCR and called the accusations an attempt to "create an atmosphere of suspicion and mistrust toward Ukraine in the run-up to the G-8 summit [held July 15-17, 2006, in St. Petersburg]." [2]





The MTCR restricts transfers of missiles able to carry a 300 kilogram payload to a distance of 500 kilometers or more. Soviet-made Kh-55 long-range air-launched cruise missiles (NATO designation AS-15 "Kent") were developed for deployment on Tu-95 heavy (strategic) bombers (each intended to carry between 6 and 16 missiles depending on modifications) and on Tu-160 heavy bombers (intended to carry 12 missiles). The system, whose capabilities place it well above the MTCR threshold, has a range of 3,000 kilometers and, in the Soviet arsenal, carried a nuclear warhead with a yield of 200 kilotons (ten times larger than the weapon that destroyed Nagasaki).

In addition to violating the rules of the MTCR, the transfer of these missiles to third countries would also violate the "non-transfer" provisions of START I (a treaty on the reduction and limitation of strategic offensive arms signed in 1991 between the United States and the Soviet Union; Ukraine became a party to that treaty after it became an independent state). [3] As many as 1,612 Kh-55s remained in Ukraine after the break-up of the Soviet Union. [4] All of the missiles were to have been destroyed in Ukraine and/or sold to Russia. It is not clear why Russia did not address the possible violation of START I in its White Paper. (In its 2001 and 2005 reports on the compliance of foreign governments with their arms control obligations, the U.S. Department of State determined that Ukraine was in compliance with its obligations under START I.) [5]

The cases of illegal export of cruise missiles were discovered by the Security Service of Ukraine in 2004 and made public by Prosecutor General of Ukraine Svyatoslav Piskun in the spring of 2005 after the conclusion of an investigation. [6] The first transfers of Kh-55s case took place in 2000 and involved Oleg Orlov, a Russian citizen and businessman who lived in the Czech Republic, and Vladimir Yevdokimov, a former official of the Security Service of Ukraine and later Director General of "UkrAviaZakaz" company. They exported six cruise missiles to China using a forged certificate that stated the missiles were to be transferred to Russia. In

2004, Orlov was arrested in the Czech Republic and extradited to Ukraine. Yevdokimov was arrested in Ukraine and in the summer of 2005 sentenced to six years imprisonment.

The second case took place in 2001 and involved Valeri Malev, a former head of the Ukraine's state-owned arms export organization, "UkrSpetsExport" and an Australian citizen named Khaider Sarfraz. (According to its website, UkrSpetsExport, the "State Company for Export and Import of Military and Special Products and Services, is the only organization authorized by the Ukrainian Government to implement the export potential of the military industrial complex of the Ukraine.") Both Malev and Sarfraz subsequently died, allegedly in car accidents, Malev in 2002 and Sarfraz in 2004. [7] The two perpetrators exported cruise missiles to Iran also using a forged end-user certificate that stated the missiles were to be transferred to Russia.

A parallel investigation into the matter by a Ukrainian parliamentary committee, conducted after the November 2004 "Orange Revolution" that brought reformist President Viktor Yushchenko to power, strongly implied that that senior officials of the Ukrainian government during the presidency of Leonid Kuchma had knowledge of the transactions. In a January 2005 letter to Yushchenko, Hrihory Omelchenko, deputy chairman of the Ukrainian parliamentary committee on organized crime and corruption and leader of the investigation, declared, "These cruise missiles were hidden in military depots of the Ukrainian Defense Ministry under the control of [the Defense Ministry] and under documentation signed by senior officials of the ministry, saying they were in fact designated as destroyed." [8] Omelchenko also stated that his investigation was being thwarted by officials who had served in the government of former President Leonid Kuchma, a charge that implicitly raised

questions as to whether the investigation by Prosecutor General Piskun had fully exposed the possible role of higher level officials in the Kuchma government.

In late March 2005, Petro Poroshenko, secretary of Ukraine's National Security





Council, declared the 2000-2001 missile sales were not endorsed by the Ukrainian government at the time as official policy. "We're not talking about a crime carried out by the state of Ukraine," he said. "There's no evidence that this sale was sanctioned." [9] Nonetheless, he also announced that he had ordered the Defense Ministry and Ukraine's secret police to make a full account of the disposition of the country's Kh-55 arsenal. [10] In April 2005, President Yushchenko confirmed that the 2000-2001 sales had taken place. [11]

Insufficient information is publicly available to determine whether the Kuchma government was sufficiently involved in the missile sales to sustain the Russian charge that Ukraine violated the MTCR in 2000-2001 or whether the export of the Kh-55s was merely the work of criminal conspirators, operating independently. However, given that the missiles were among the most powerful in the world and were the subject of strict accountability procedures under START I (which required their destruction or transfer to Russia) and given the role of Ukraine's official arms export agency in some of the sales, there is reason to suspect that senior Ukrainian officials were involved in the illicit sales. Russia did not allege that Ukrainian violations of the MTCR were continuing.

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FORMER RUSSIAN MINISTER OF ATOMIC ENERGY YEVGENI ADAMOV RELEASED FROM JAIL PENDING TRIAL

On July 21, 2006, the Supreme Court of Russia overturned an earlier decision by the Moscow City Court and ruled that former Minister of Atomic Energy Yevgeni Adamov should be released from jail pending trial. [1] Adamov is accused in Russia of



embezzling 3 billion rubles (roughly \$100 million) in state funds, and in the United States of embezzling \$9 million, as well as money laundering and tax evasion. [Note: WMD Insights has obtained a copy of the U.S. indictment against Adamov. To view the document go to http://www.wmdinsights.com/PDF/Adamov_US_Indictment.pdf].

Adamov was arrested in Switzerland in May 2005 at the request of the United States, but in December 2005 was extradited to Russia, which had filed its own charges against him soon after his arrest. Upon arrival in Russia, Adamov was placed in jail awaiting the end of the investigation of his activities, incarceration that was expected to extend until his trial began. Adamov's two co-defendants remained out of jail, but were prohibited from leaving their city of residence. [For additional background see "Former Russian Minister of Atomic Energy Yevgeni Adamov Awaits Trial on Charges on Embezzling \$100 Million," WMD Insights, June 2006 issue, http://www.wmdinsights.com/16/16_R1_FormerRussianMinister.htm].

Because Russian law does not allow incarceration for longer than two months without a special court order, the Russian State Prosecutor's Office requested repeated extension of Adamov's incarceration at two month intervals. Each request was granted by the Basmannyi District Court in Moscow, which has jurisdiction over the Adamov proceeding. Although Adamov's defense team appealed each of these rulings, all were affirmed. The latest extension, which was to keep Adamov in custody until August 8, 2006, was overturned, however, because Adamov's defense team was able to take advantage of a rule banning pre-trial incarceration for longer twelve months, if the investigation of the pending case has been completed by the State Prosecutor and presented to the defendant. [2] The 12-month period since Adamov's arrest (counting the time he spent in a Swiss jail) ended on May 2, 2006, creating the legal basis for the Supreme Court's decision to overturn the May 23 lower court order extending Adamov's incarceration.

Upon his release and in subsequent interviews, Adamov declared his innocence and said he was prepared to prove it in court. His trial is expected to begin in the fall of 2006. Adamov disclosed that he had not expected that he would be incarcerated

in Moscow upon extradition from Switzerland. [3] He also said that he planned to return to work at NIKIET, the research institute that he headed before and after his tenure as Minister of Atomic Energy and, indeed, he appeared there on the next day after his release from jail. [4] Reinforcing his protestations of innocence, Adamov also declared that he "insisted" on being present at court hearings in the United States. He noted, however, that if he was unable to be present in person in the U.S. court "for one reason or the other," he planned to participate in the court hearings via teleconference. [5]

It should be noted that the attitude of Russian media toward Adamov has undergone a remarkable change in the past several months. As recently as the spring of 2006, the consensus seemed to be that Adamov was guilty and that the official case against him represented only a portion of his actual wrongdoing. Although many journalists reporting on the case and independent observers believed that the case against Adamov was launched by the State Prosecutor's Office as an excuse to prevent his extradition to the United States (indeed both Russian lawmakers and Foreign and Interior Ministry officials have cited the relevance of Russia's national security interests in the extradition to and trial of a former member of the government in a third party state), few doubted the underlying validity of that case. [6]

More recently, however, sympathies have begun to shift in Adamov's favor. Media reports have ceased discussions of his guilt, and coverage has been limited to brief, neutral accounts of the accusations against the former minister. Indeed, recent attention has concentrated on his age and poor health and, especially, on the behavior of the State Prosecutor's Office and courts. It is possible, however, that this change of heart is related less to Adamov's particular situation than to the declining reputation of Russia's prosecutors and courts, which are increasingly perceived in Russia as having compromised themselves in several notable cases in the past several years and as often manipulating Russian law for political reasons. Skilled advocacy by Adamov's defense team, highlighting various legal errors in recent months, appears to have contributed to the remarkable change in the media's attitude about his case.



Adamov's trial is expected to shed some new light on his tenure as head of NIKIET and as Minister of Atomic Energy. If he is found guilty of seeking to enhance his personal wealth during this time by misappropriating U.S. funds provided to the Russian government for nonproliferation programs, U.S. decision-makers will likely seek to draw lessons regarding the underlying motives for positions taken by NIKIET and the Ministry of Atomic Energy in various negotiations and regarding the adequacy of controls over U.S. expenditures.

In a late-breaking development, on August 21, after a preliminary hearing, a local court returned Adamov's case to the State Prosecutor with a request that the prosecution "remove shortcomings" in the case. Depending on the details, the decision could indicate that there are significant deficiencies in the material presented by the prosecutors, which could jeopardize the criminal proceedings against Adamov. [7]

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PUTIN SEEKS TO "REPLACE" START I TREATY

The Strategic Arms Reduction Agreement (START I) was signed by George H.W. Bush and Mikhail Gorbachev in August 1991. The treaty expires in December 2009, unless it is extended for a five-year period or replaced by another treaty. According to Article XVII (2) of the accord, "No later than one year before the expiration of the 15-year period [during which START I will remain in force], the Parties shall meet to consider whether this Treaty will be extended. If the Parties so decide, this Treaty will be extended for a period of five years unless it is superseded before the expiration of that period by a subsequent agreement on the reduction and limitation of strategic offensive arms."

Russian President Vladimir Putin announced on June 27, 2006, that Russia plans to negotiate a new treaty with the United States that will supersede START I, which expires in 2009. Russian analysts indicate that Putin's goal is to gain new flexibility in managing Russia's strategic nuclear deployments, while maintaining START I's verification and transparency measures, with modest reforms that will reduce the expense and cumbersome nature of some requirements. The new pact might also incorporate and supersede the 2002 Strategic Offensive Reductions Treaty, also known as the Moscow Treaty, which is due to expire in 2012.

Putin revealed his goal of developing a new treaty during remarks at a June 27 conference of Russia's ambassadors, declaring: "The stagnation we see today in the area of disarmament is of



particular concern. Russia is not responsible for this situation. We support renewed dialogue on the main disarmament issues. Above all, we propose to our American partners that we launch negotiations to replace the START Treaty, which expires in 2009." [1] Three days later, Deputy Foreign Minister Sergey Kislyak disclosed at a press conference that the United States and Russia were already engaged in discussions on a new START accord. [2] According to Sergey Prikhodko, Presidential Aide to Vladimir Putin and Chairman of the Russian G-8 Presidency 2006 Organizing Committee, Putin discussed the issue with President George W. Bush at the G-8 Summit in St. Petersburg on July 14, 2006, and the two leaders "decided what had to be done." [3]

The key phrase in Putin's June 27 statement was "replace the START Treaty." It is one indication that the Russian government does not want to retain START I in its present form, but also does not want to see the essence of the treaty completely eliminated. Rather, Moscow hopes to replace the pact with an updated version. With the United States now apparently engaged in discussions on the future of the treaty, key questions are how much of START I Russia and the United States may want to preserve, change, or add.

START I and the Moscow Treaty

START I limits to approximately 6,000 the number of nuclear warheads that the United States and Russia may each deploy on long-range, or "strategic," land-based missiles, submarine-launched missiles, and bombers. The treaty contains strict sub-limits for different categories of strategic launchers, as well as complex accounting rules. It also provides for elaborate inspections and other verification procedures to provide confidence to each party that the other is complying with these requirements.

The Moscow Treaty, signed by the United States and Russia in 2002, adopted a very different approach that reflected the change in U.S.-Russian relations after the Cold War and the desire of

both sides to maximize flexibility in planning their respective strategic postures. It limits the number of nuclear warheads each side may deploy on strategic offensive systems to between 2,200 and 1,700 by the end of 2012, when the treaty is set to expire, although it contains no restrictions on the types of strategic systems that can be deployed or the number of warheads per missile or bomber. However, as both sides reconfigure their nuclear

arsenals under the Moscow Treaty, they must continue to comply with rules set out in START I, which remains in force. The Moscow Treaty also contains no verification measures; instead, the United States and Russia have taken advantage of the pre-existing START I verification system to provide confidence that the other side is moving towards the reductions that must be in place in 2012 under the Moscow Treaty.



*George H.W. Bush and Mikhail Gorbachev
(with interpreter)
Signing the START 1 Treaty, July 31, 1991*

Multiple Warheads for the Topol-M

The inter-relationships between the requirements of the two treaties have raised a number of issues that Russia hopes to address through a replacement treaty to START I. One such issue, singled out by a number of Russian experts, is ensuring that Russia has the right to deploy multiple, independently-targeted reentry vehicles (MIRVs) on its new Topol-M intercontinental ballistic missile (ICBM), in lieu of the single warhead the system now carries. One well known Russian expert, Aleksei Arbatov, has noted that if Russia is limited to placing only a single warhead on the Topol-M, it will have a difficult time deploying the quota of warheads allowed under the Moscow Treaty after two of its older, multi-warhead ICBMs (known as the SS-18 and SS-19) reach the end of their service lives around 2015. [4] Vladimir Dvorkin, the former director of the 4th Research Institute of the Strategic Rocket Forces, confirmed that after the end of service lives of these existing types of ICBMs, it will be essential for Russia to have the option of MIRVing the Topol-M. [5] Russia appears to be actively preparing for this alternative. [See "Russia to Deploy Defense-Penetrating ICBM," in the December 2005/January 2006 issue



of WMD Insights, http://www.wmdinsights.com/11/R1_RussiatoDeploy.htm.] START I, however, would prohibit this configuration because of its rule banning increases in the number of warheads deployed on existing types of missiles, a category that includes the Topol-M. Merely extending START I in 2009, without change, would therefore deprive Moscow of the opportunity to place multiple warheads on this system.

Arbatov has suggested that Russia could, in exchange for the elimination of this rule, agree to relax START I limits on “downloading,” or reducing the number of warheads on existing types of missiles. Downloading is a primary means of reductions for the United States under the 2002 Moscow Treaty, but START I establishes rather strict limits on this practice because of concerns that downloaded missiles might be rapidly refitted with additional warheads in a crisis.

Some Russian military experts have proposed going further to ensure Russia will have the legal right to place multiple warheads on the Topol-M, advocating that country withdraw from START I altogether. [6] The decision of the Russian government to seek the replacement of START I, however, seems to indicate that this more radical view has been rejected.

Verification

Key Russian officials, including Lt. Gen. Nikolai Artuykhin, Chief of the Department on Control over Treaty Implementation of the Ministry of Defense, believe that a key benefit of START I that should be preserved is its well-developed transparency and verification system. [7] The desire to maintain this system seems to be an important motive behind Russia’s decision to preserve some of the elements of the old treaty in a modified form. It should be noted, however, that many in Moscow believe that the START I verification system is cumbersome and expensive and could be simplified in ways that would uphold the degree of transparency afforded by the original treaty, while reducing the burden, in particular, of mutual short-notice inspections. (It is

also worth noting that START I’s rigid verification rules, intended to confirm compliance with various ceilings, sub-limits, and the like, do not fit well with the more flexible approach of the Moscow Treaty towards strategic launcher and warhead deployments. Thus, if a START I replacement treaty were to adopt the flexible character of the Moscow Treaty, it is possible that the two sides would consider more extensive revisions in the original START I verification mechanisms.)



Russian ICBM - Topol-M

Vladimir Dvorkin has also called for simplification of START I’s dismantlement and conversion procedures. Dvorkin notes, for example, that strategic submarines have to be physically dismantled in order to be removed from accounting under the treaty, but it would be more logical to allow their conversion for use with shorter range, non-nuclear cruise missiles. The same problem arises with respect to heavy bombers, which could also make a substantial contribution to Russia’s conventional forces if instead of requiring dismantlement, conversion of the systems were allowed. [8]

Parties

Another issue that the two sides will need to address before they engage in formal negotiations is how many states will be party to a START I replacement treaty. START I was originally concluded as a bilateral treaty between the United States and the Soviet Union, but after the Soviet disintegration in December 1991, four newly independent states had strategic weapons in their territories. START I was then revised to include all four countries. Today, however, of the four, only Russia remains a nuclear weapon state, with strategic launch platforms. It seems logical that Russia will want the replacement to START I to be formulated as a bilateral U.S.-Russia document, but Russian officials have not commented on this publicly. Such a change in START I would mean, however, that as a legal matter, the replacement treaty will be a completely new agreement and not an amended version of START I.



Time Ripe for Negotiations

Although the issue of MIRVing Topol-Ms has been on the agenda of the Russian military for some time, the Russian government has refrained from raising it in exchanges with the United States on the implementation of START I, because to increase the number of warheads carried by the Topol-M would have required an amendment to the treaty. Some issues, including simplification of the treaty's verification system, were on the agenda of the START III consultations in 1997-2000, but those negotiations were never completed. The impending expiration of START I offers a convenient opportunity to raise all issues of concern.

The Future Outlook

How the United States will react to Russian initiatives in the areas of new warhead deployment, verification, and downloading remains to be seen. The United States will undoubtedly have issues of its own that it hopes to address in the negotiations on the future of START I, perhaps including transparency requirements for non-strategic nuclear weapons.

Both sides also will most certainly be mindful of domestic political processes and their impact on the negotiations. Russia holds its next presidential election in the spring of 2008, and the United States in November 2008. Neither President Putin nor President Bush is eligible to run for reelection. To preserve their roles in the strategic arms reduction process, however, both leaders have strong incentives to press forward with negotiations on a START I replacement treaty, possibly one that might incorporate and supercede the 2002 Moscow Treaty, and set out a long-term road map for the bilateral nuclear arms reduction process.

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CONSTRUCTION OF RUSSIA'S FIRST FLOATING NUCLEAR POWER PLANT RAISES PROLIFERATION ISSUES, OPPORTUNITIES

In mid-June 2006, Sergey Obozov, the Acting Director General of RosEnergoAtom, the Russian government-owned corporation responsible for building and operating the country's nuclear power plants, signed a contract with the SevMash shipyard in Severodvinsk to construct Russia's first



floating nuclear power station. The signing of the contract crowned more than a decade of effort, Obozov said, beginning with work on designing the station and soliciting bids for its construction. [1] The choice of fuel for the reactors, however, could raise proliferation concerns. At the same time, the business model for possible future export of the units could strengthen international nuclear trade practices.

The floating nuclear power station will consist of two KLT-40S reactors with a total output of 70 MW of electricity. The same type of reactor is used in the propulsion systems of some Russian nuclear-powered icebreakers. The floating nuclear power reactors will use seawater for coolant. The cost of the first floating nuclear power plant is estimated at 9.1 billion rubles (about \$330 million), but if future orders permit serial production of the units, costs are expected to decrease by approximately 15 percent. [2]

The level of enrichment of the fuel for the floating nuclear power plants is a matter of some debate. In 1994, it was reported that the Murmansk Shipping Company, operator of Russia's civilian ice-breaker fleet, had stated that KLT-40S reactors use fuel enriched to between 30 and 40 percent uranium-235, implying that the KLT-40S would use the same fuel. [3] All uranium enriched to 20 percent or more uranium-235 is considered "highly enriched uranium" and is potentially usable for nuclear weapons. Since 2004, however, Russian officials and parliamentarians have repeatedly declared that the reactors would use fuel enriched to less than 20 percent uranium-235, which would avoid the proliferation risks associated with higher enrichment levels. [4] It is not clear, however, whether this fuel has been designed and certified for use in the KLT-40S. (These proliferation issues are discussed further below.)

Each two-reactor floating plant will be able to provide enough electricity for a city of 200,000 or contribute to the energy supply of larger cities. Although the units are quite small compared to land-based nuclear power stations being built

today, which typically produce 1000 MW or more of electricity, RosEnergoAtom believes the floating reactors' size will make them attractive for remote areas lacking access to centralized power systems and for seawater desalinization projects. China, Indonesia, Malaysia, and South Korea are said to have shown interest in the project, opening the possibility of an export market for the floating units. [5]

The completion of construction of the first floating nuclear power station is scheduled for 2010. It is expected that each floating nuclear power plant will remain in operation for 40 years, with a dry-dock overhaul conducted every 12 years.

According to existing plans, the first floating nuclear power station will supply electricity to the area around Arkhangel, on the White Sea, and will be moored near the SevMash plant, the main facility of Russia's State Nuclear Shipbuilding Center, where Russia's nuclear submarines are produced. Other prospective sites are Kamchatka, Chukotka, Uakutia, Primorskii Krai (all in the Russian Far East) and Krasnoyarsk (in central Russia, with a coastline on the Arctic Ocean). Current plans foresee construction of as many as 20 floating nuclear power plants. [6]



Artist's Conception of Russian Floating Nuclear Power Plant

Source: SevMash

[<http://www.msnbc.msn.com/id/13316942/>]

The floating nuclear power station will be built in Russia, with Russian financing. Earlier, a consortium of Chinese banks offered to fully finance construction of the first such station on the condition that it be built in China by Chinese shipbuilders. RosEnergoAtom rejected the idea, however, saying that transportation of materials to China and then of the completed hull from China to Severodvinsk for the installation of the reactors would be impractical. Instead, the entire unit will be built at Severodvinsk. Rosatom sources, however, did not rule out the possibility of a joint venture with China on constructing floating nuclear power plants in the future. [7]

According to some reports, in addition to China, South Korea was also prepared to finance the construction of the floating power plant. Both states, however, wanted to control the construction



of future units for Russia, as well as the sale of such stations for use in their own countries. The possibility of foreign funding received serious consideration in Russia, but in the end the decision was made to finance the project exclusively from Russian sources, namely the Russian Federal Nuclear Agency (Rosatom); the Russian state-owned oil and gas corporation, Gazprom; and, apparently, the Russian federal budget. [8]

Nonproliferation Issues and Opportunities

If the floating nuclear power plant reactors use highly enriched uranium fuel, the announcement of the contract to build the first such units could raise a number of important proliferation issues. Although uranium-235 enriched to 80-90 percent is best suited for nuclear weapons, 40 percent enriched uranium fuel could also be used for this purpose and might be an attractive target for terrorists. [9]

In this context, the frequency of fueling cycles for the floating reactors and the details of fuel management arrangements would be important factors in determining the degree of risk posed by their uranium fuel. According to press accounts in 2005, quoting sources involved in developing the floating nuclear power reactors, the reactors will be refueled at three-year intervals, and special security measures were being planned to address the possible associated dangers, including protection against underwater attacks by divers and advanced personnel access controls. [10]

Apart from these security concerns, the use of highly enriched uranium as fuel in a new class of reactors could undercut international efforts to curb the use of highly enriched uranium for civilian purposes around the globe. Under a program launched in 2004, known as the Global Threat Reduction Initiative, for example, Russia and the United States are actively collaborating to repatriate to Russia Soviet- or Russian-supplied highly enriched uranium from former Soviet republics and former Soviet bloc states. Moscow and Washington are also cooperating to convert Soviet-designed reactors outside of Russia that currently use highly enriched uranium fuel to allow them to operate on low-enriched uranium instead. [11] (Moscow, however, has remained silent on whether it will

convert its domestic civilian research reactors to low-enriched uranium fuels.)

If, on the other hand, the floating reactors are to be fueled with low-enriched fuel, then the proliferation risks posed by the program would be effectively eliminated, and it would reinforce the broader U.S.-Russian effort to reduce the use of highly enriched uranium in the civilian sector.

Separately, Russia's approach to possible exportation of the floating units could also contribute to international nonproliferation efforts. According to the model developed by Rosatom, foreign customers would purchase only the products from the reactor, that is, electricity or, in the case of a desalinization project, fresh water. They would not control the floating nuclear power plant itself, either directly or indirectly. The crew and other personnel would be exclusively Russian and neither technology nor fresh or spent fuel from the reactors would leave Russian hands. [12]

For the past two years, the United States and the International Atomic Energy Agency, among others, have been seeking to develop new approaches to civil nuclear cooperation that reduce the need for states to develop indigenous capabilities for producing enriched uranium fuel or for "reprocessing" spent fuel – capabilities that can provide access to weapons-usable nuclear materials. [13] Under an approach to nuclear cooperation based on the Russian floating nuclear power plant model, these and virtually all other steps involving nuclear technology would be handled by the supplier country, while the purchaser would obtain the benefits of using nuclear energy to produce electricity.

This business model could establish a new approach for nuclear power plant exports, more generally, which could strengthen the international nonproliferation system. The concept that the floating nuclear power plant would never leave Russian control could, in principle, be adapted to on-shore nuclear power plants sales, with nuclear power reactors and their fuel being owned and operated by the supplier country, thereby reducing traditional proliferation risks.

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